Lee Subdivision Project

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prepared by

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Acronyms

3CE	Central Coast Community Energy
ADA	Americans with Disabilities Act
ADT	average daily trips
ADU	accessory dwelling unit
AFY	acre-feet per year
AMBAG	Association of Monterey Bay Area Governments
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
BRA	Biological Resources Assessment
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFD	community facilities district
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CRPR	California Rare Plant Rank
CTS	California tiger salamander
CWA	Clean Water Act
dBA	A-weighted decibel
EIR	Environmental Impact Report

FESA	federal Endangered Species Act
FP	fully protected
FT	federally threatened
FTA	Federal Transit Administration
GHG	greenhouse gas
HCP	Habitat Conservation Plan
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
LAFCO	Local Agency Formation Commission
L_{eq}	equivalent noise level
LSAA	Lake and Streambed Alteration Agreement
LTA	Local Transportation Authority
MBARD	Monterey Bay Air Resources District
MBTA	Migratory Bird Treaty Act
MLD	most likely descendant
mph	miles per hour
MSR	Municipal Service Review
MT	metric tons
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
NAHC	Native American Heritage Commission
NO_X	nitrous oxides
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWIC	Northwest Information Center
OHP	State Office of Historic Preservation
OPR	California Office of Planning and Research
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	fine particulate matter
PM_{10}	course particulate matter
PRC	Public Resources Code
PUD	Planned Unit Development
ROG	reactive organic gas
ROW	rights-of-way

RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBCFD	San Benito County Fire Department
SBCWD	San Benito County Water District
SCWD	Sunnyslope County Water District
SLF	Sacred Lands File
SR	State Route
SSC	species of special concern
ST	state threatened
SVP	Society of Vertebrate Paleontology
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
RWQCB	Regional Water Quality Control Board
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VMT	vehicle miles traveled
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
WST	western spadefoot toad

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Executive Summary

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed Lee Subdivision Project ("proposed project" or "project"). This section summarizes the characteristics of the proposed project, alternatives to the proposed project, and the environmental impacts and mitigation measures associated with the proposed project.

Project Synopsis

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Project Description

This EIR has been prepared to examine the potential environmental effects of the project. The following is a summary of the full project description, which can be found in Section 2, *Project Description*.

The project site is located at 291 Old Ranch Road, southeast of the City of Hollister and east of Fairview Road, in unincorporated San Benito County. The project site is regionally accessible from State Route 25 and locally accessible from Fairview Road (see Figure 2-1). The project site encompasses most of the property contained within Assessor's Parcel Number (APN) 025-320-004, excluding the northeastern corner of the property. The property comprising APN 025-320-004 is approximately 39.5 acres in size; whereas the project site is approximately 33.4 acres, which includes the 27.45-acre area proposed for development, an approximately 3.15-acre slope easement (to be graded in support of the residences along the eastern boundary of the project site), and an approximately 2.8-acre natural drainage easement. The remaining 6.1 acres of would remain undeveloped, and is referred to as the remnant portion. No application for development on the 6.1-acre remnant portion has been proposed and future development of the remnant portion is not foreseen at this time.

The project site contains a raised knoll in the central portion of the site, with elevations gradually decreasing in all directions from the knoll. The project site currently has a one-story residence and a barn, which cover an area of approximately 9,950 feet. The remainder of the site is dry-farmed with oat hay (animal feed), given the poor soil quality (site soils have a non-irrigated land capability classification of 3 and 4: severe limitations and very severe limitations, respectively; Natural Resources Conservation Service 2024). Old Ranch Road is currently a paved two-lane private road that provides access to adjacent rural residences and terminates at the existing residence in the project site.

The site has a land use designation of Residential Mixed (RM) as defined by the Land Use Element of the County's General Plan, but is currently zoned Rural (R) by the County's Zoning Ordinance. The project site is immediately bordered by rural residential development to the west, rural residences with vineyards and an associated winery to the north (Leal Vineyards), and planned development to the south and east. Leal Vineyards includes active agricultural operations of the vineyards along the northern border of the project site. Land to the south is planned for the Fairview Corners residential development, with 5,000-square foot minimum lot sizes. Similarly, land west of Fairview Road has been developed with the Roberts Ranch Subdivision residential development, and the West of Fairview residential development is under construction, both with 6,000-square foot minimum lot sizes. Additionally, between Fairview Corners and Highway 25, Gavilan Community College's San Benito Campus is also under construction.

Project Characteristics

The proposed project would involve demolition or removal of the existing one-story residence, barn, septic system, and leach field, to allow for the subdivision of 141 residential lots. These new residential lots would be developed with 121 one- and two-story single family detached units and 20 single-family duet units. A total of approximately 21 percent of the residences (30 units) would be designated as affordable housing, per an affordable housing agreement between the applicant and the County (which would be entered into as a condition of approval). A total of 30 accessory dwelling units (ADU) would be included in the project, all of which would be deed restricted for low-income housing. The project includes public land dedications for street rights-of-way (ROW) and a public park. Table ES-1 summarizes the project characteristics.

Table ES-1 Project Characteristics

Address	291 Old Ranch Road
APN	025-320-004 (portion)
Height/Stories	1-2 stories
Total Lot Area	**33.4 acres**
Residential Lots	16.43 acres
Public Park/Public Open Space	2.13 acres
Passive Open Space	0.50 acre
Internal Public Streets	8.27 acres
Lift Station Parcel	0.12 acre
Slope Easement	3.15 acres
Natural Drainage Easement	2.80 acres
Total Residential Lots	**141 lots[1]**
Single Family Detached (SFD) Units[2]	121 units
Single Family Attached (SFA) Units	20 units
Accessory Dwelling Units	30 units (all of which would be deed-restricted low income~~(~~)
Minimum SFD Lot Size	4,200 square feet
Minimum SFA Lot Size	2,500 square feet
Net Residential Density	8.58 DU/net acre
Gross Residential Density	4.22 DU/gross acre

Notes: DU = dwelling units

[1] Please refer to the affordability options described below this table.

[2] The respective number of SFD single-story and SFD two-story units may vary; however, the total of both unit types would remain at 121 units.

The project is subject to the County's inclusionary housing requirements, pursuant to County Code Chapter 21.03 (Affordable Housing Regulations). To satisfy this requirement, the applicant is proposing 30 ADUs (described further in Section 2.5.3 of the Project Description), all of which would be deed restricted for 30 years to ensure affordability. These 30 proposed affordable ADUs would represent approximately 21 percent (21%) of the total units, thereby exceeding the County's requirement of 20 percent.

The County's Zoning Code Chapter 25.07 and California Government Code Section 65852.27 allow for the construction of an ADU on any lot which is zoned for residential use and is connected to public water and wastewater service.

Parking and Site Access

Access to the project site would be provided from Fairview Road via the existing Old Ranch Road, which would be improved to County transportation standards. A secondary site access at the southern project boundary would connect to the planned Fairview Corners residential development to the south, providing secondary fire, police, and emergency vehicles access, as well as private vehicles, bicycle, and pedestrian access to the Fairview Corners and Gavilan College, thus increasing safety to those southerly developments. Internal streets, including the existing Old Ranch Road, which is currently a private road, would be constructed as part of the project and dedicated to San

Benito County for maintenance through a community facilities district (CFD). The existing segment of Old Ranch Road would be improved to conform with County standards and would be extended to the proposed public park. Internal streets include blocks, loops, and one cul-de-sac, providing access to each proposed residential lot. Shared driveways are proposed for seven of the residential lots on the southerly portion of the project site. Shared driveways would be maintained through reciprocal access and maintenance agreements.

Sidewalks would be provided on all internal streets for pedestrian use. Additionally, the project would provide sidewalk connections to the planned Fairview Corners sidewalks and trail at the southern project boundary. This expanded pedestrian network would provide pedestrian access to nearby local parks, including the proposed on-site park. While no bicycle-only trails are proposed on site, bicyclists could use the proposed street network and connection to off-site trails.

Utilities

The project site is within the Sunnyslope County Water District (SCWD) service boundary. The project's water system would connect to the future Fairview Corners water system at the southern project boundary and to the existing water system in Old Ranch Road. Buildout of the project site and adjacent planned development would result in a looped system of water mains between Gavilan Community College's San Benito Campus, Fairview Corners residential development, and the current residences on Old Ranch Road. The project also includes the installation of non-potable water mains for possible future irrigation of the proposed public park and remainder parcel, as well as installing non-potable water mains through the project site to the intersection of Old Ranch Road and Fairview Road. The proposed non-potable water mains would connect to the planned development immediately south of the project site. The proposed on-site potable and non-potable systems would be dedicated to SCWD for operation and maintenance, funded through water rates collected by SCWD.

For wastewater treatment service, SCWD would contract with the City of Hollister for the conveyance and treatment of project-generated wastewater. The wastewater main would be extended to a manhole on the west side of Fairview Road, and from this point, project wastewater would flow in the existing City wastewater collection system to the treatment plant. Off-site wastewater infrastructure would be sized to serve proposed project buildout.

Stormwater would flow into an off-site drainage located on the northeastern portion of the parcel on which the project site is located. On-site stormwater would be collected and conveyed by an on-site network of catch basins and underground pipes located in the proposed street system. Stormwater would be conveyed eastward and would be discharged into the adjacent drainage channel via a new outfall, with flow rates controlled such that they do not exceed the pre-development peak flow rate. An additional stormwater main would be constructed through the park from the south boundary of the site to the proposed outfall, which would convey a small amount of stormwater from the property south of the project site. The proposed stormwater underground chamber design would have the volume capacity to detain a 500 year storm. Further, the current design retains the volume for the 95^{th} percentile storm, which is greater than the volume for the detention of a 500-year storm. San Benito County would be responsible for maintenance of the proposed on-site stormwater system, funded through a County CFD.

In terms of other utilities, local telephone and internet service would be provided by AT&T, cable television by Charter TV, natural gas service by Pacific Gas and Electric Company (PG&E), and electricity by Central Coast Community Energy (3CE) through PG&E transmission lines.

Construction and Grading

Construction of the proposed project is expected to occur over three years beginning in 2025 or 2026, once a Grading Permit has been acquired. It is estimated that demolition, site preparation, and grading of the project site would occur first over four months; utility installation and internal roadway paving over the following six months; site cleanup over the next two months; and residential home buildout over the following two years. Excavation depths would be approximately 12 feet at the knoll in the center of the site and approximately 15 feet at the rear of the lots overlooking an existing drainage tributary. Grading would occur immediately southwest of the drainage corridor. Proposed grading would not disturb the existing drainage corridor. In total, approximately 163,400 cubic yards of excavation and approximately 113,700 cubic yards of fill would be required, resulting in export of approximately 49,700 cubic yards from the site.

Sustainability Features

The elongated east/west lot configuration would accommodate daylighting with a north/south exposure for many of the lots, thus promoting energy savings and enhancing lighting. Daylighting places windows, skylights, and other openings such that sunlight can provide internal lighting, reducing the demand for electricity from internal light fixtures during daytime hours. The stormwater design would implement low-impact development techniques. The project would extend a non-potable water main for future irrigation of the park and other open space areas, which would reduce the project's potable water demand. The project would install photovoltaic systems on all proposed residential structures, equal to the expected electricity usage, as is required by Section 150.1(b)14 of the 2022 Building Energy Efficiency Standards for low-rise residential buildings (3 stories or fewer).[1] The project would meet the requirements of the 2022 California Energy Code. All proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems.

Project Objectives

The primary objectives for the project are as follows:

- Create an environmentally sound community that supports livability and quality of life situated adjacent to existing residences in both the County and City to avoid leap-frogging of vacant parcels not planned for development.[2]
- Reduce the pressure for residential development on prime farmlands and farmlands of statewide importance within San Benito County by developing on agriculturally insignificant lands.
- Provide a balanced approach to land use that accommodates future growth, protects community assets, meets affordability requirements, and protects environmental resources.
- Provide a mix of residential housing types that will meet the needs of, and be affordable to, various household sizes, unit types, and income levels, including the local county workforce such as teachers, emergency workers, nurses, and others.
- Provide at least twenty percent (20%) deed-restricted low income housing through the provision of ADUs, thereby exceeding the County's required levels throughout the project.

[1] The 2022 Building Energy Efficiency Standards apply to projects that submitted a permit application after January 1, 2023.
[2] Leap-frogging refers to the development of parcels that are not adjacent to already developed parcels or planned for development.

- Provide efficient development standards in combination with respecting the environmental hazards on the project site, including seismic zones, slopes, and natural resources that enable efficient lot design to achieve a higher density that is still appropriate for the surrounding area.
- Provide a circulation network that promotes both a safe and quiet neighborhood and enables the County's circulation and emergency services goals in this portion of the county by connecting to the adjacent approved residential street at the project site south boundary.
- Provide a second point of access (ingress and egress) for public fire, police, and emergency vehicles, private vehicles, bicyclists, and pedestrians relating to the proposed Gavilan Community College San Benito Campus and Fairview Corners residential development, thus increasing safety to those southerly developments.
- Improve existing Old Ranch Road to County standards and dedicate it to the County.
- Provide convenient on-street pedestrian facilities and shared travel lanes for bicycles to promote outdoor activity, including connection to the Fairview Corners and Gavilan College street, sidewalk, and trail network, thereby providing connectivity for walking and bicycling to the new Gavilan College Hollister campus.
- Provide cohesive and integrated land uses and infrastructure in proximity to existing utilities, infrastructure, and public services adjacent to existing/approved neighborhoods and public spaces.
- Provide for park facilities that are both formal and informal to meet a variety of activities and needs.
- Locate a new public park in an area that is both adjacent to the residences and offers views and a vista point to provide both physical and visual amenities for the residents to enjoy.
- Provide for stormwater infiltration.
- Connect to the Fairview Corners and Gavilan College utilities at the project site southern boundary, thereby providing redundancy in the domestic water system.
- Extend the County's non-potable water main to the remaining undeveloped portion of the project parcel, the Dividend Homes development to the south, the Old Ranch Road/Fairview Road connection to the west, and the on-site park to provide sustainable irrigation from a connection point at the project site southern boundary.
- Provide for emergency overland stormwater release from the northeast portion of the Fairview Corners project across the easterly side of the project site.

Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed project. Studied alternatives include the following three alternatives. Based on the alternatives analysis, Alternative 1 was determined to be the environmentally superior alternative and Alternative 2 was determined to be the environmentally superior build alternative.

- Alternative 1: No Project
- Alternative 2: Reduced Density
- Alternative 3: Higher Density

Refer to Section 5, *Alternatives*, for the complete alternatives analysis.

Areas of Known Controversy

The EIR scoping process did not identify any areas of known controversy for the proposed project. Responses to the Notice of Preparation of a Draft EIR are summarized in Section 1, *Introduction*.

Project Permits and Approvals

The proposed project would involve the following permits and approvals:

- **San Benito County (Lead Agency)**
  - Zoning Code Amendment to Residential Multiple (RM) with a Planned Unit Development (PUD) Combining District, including changes to text, if required
  - Zone Map Change to Residential Multiple (RM) with a PUD Combining District
  - Vesting Tentative Map to subdivide the project site into single-family residential lots, and to dedicate public streets, park, and open space
  - Final subdivision map(s)
  - Grading and improvement plan
  - Grading Permit
  - Encroachment Permit
  - Building Permits
  - Affordable Housing Agreement
  - Annexation to the County's CFD
  - Development Agreement
  - Other County permits and approvals necessary or desirous to the development of the project
- **US Army Corps of Engineers**
  - Clean Water Act permits associated with the proposed outfall
- **California Department of Fish and Wildlife**
  - Lake and Streambed Alteration Agreement associated with the proposed outfall
  - Incidental Take Permit for California Tiger Salamander
- **Central Coast Regional Water Quality Control Board**
  - National Pollutant Discharge Elimination System Construction General Permit
- **Monterey Bay Air Resources District**
  - Authority to Construct Permit
- **San Benito County Water District**
  - Stormwater outfall
- **San Benito County Department of Environmental Health**
  - Removal of on-site septic system

- **Sunnyslope County Water District (SCWD)**
  - Implementation of contract with City of Hollister for wastewater service
- **City of Hollister**
  - Implementation of a contract between City and SCWD to provide wastewater collection and treatment services and facilities to the proposed project

Issues Not Studied in Detail in the EIR

As described in Section 1.4, there is no substantial evidence that significant impacts would occur to the following issue areas: Aesthetics, Agriculture and Forestry Resources, Energy, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, and Wildfire. These environmental resource areas are discussed briefly in Section 4.10, *Effects Found Not to be Significant.*

Impacts to Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Noise, Transportation, Tribal Cultural Resources, and Utilities and Service Systems were found to be potentially significant and are addressed individually in Sections 4.1 through 4.9.

Summary of Impacts and Mitigation Measures

Table ES-2 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the *CEQA Guidelines.*
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the *CEQA Guidelines.*
- **Less than Significant.** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact:** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-2 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure(s)	Residual Impact
Air Quality		
Impact AQ-1. The proposed project would not conflict with or obstruct implementation of the Monterey Ban Air Resources Control District (MBARD) 2012-2015 Air Quality Management Plan. This impact would be less than significant.	None required.	Less than Significant
Impact AQ-2. Construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the MBARD region is in nonattainment under applicable federal or State ambient air quality standards. Therefore, impacts related to construction would be less than significant.	None required.	Less than Significant
Impact AQ-3. The proposed project could potentially expose sensitive receptors to substantial pollutant concentrations in the form of toxic air contaminant emissions given the proximity to surrounding sensitive receptors. Impacts would be less than significant with mitigation incorporated.	**Mitigation Measure AQ-3: Construction Emissions Reduction.** Prior to issuance of grading permits, the following measures shall be implemented: ▪ All mobile off-road equipment (wheeled or tracked) greater than 50 horsepower used during construction activities shall meet the United States Environmental Protection Agency Tier 4 final standards. Tier 4 certification can be for the original equipment or equipment that is retrofitted to meet the Tier 4 Final standards. In the event of specialized equipment where Tier 4 Final equipment is not commercially available at the time of construction, the equipment shall meet Tier 3 standards at a minimum. ▪ Alternative Fuel (natural gas, propane, electric, etc.) construction equipment shall be incorporated where available. These requirements shall be incorporated into the contract agreement with the construction contractor and any applicable subcontractors. A copy of the equipment's certification or model year specifications shall be available upon request for all equipment on site. ▪ Electricity shall be supplied to the site from the existing power grid to support the electric construction equipment. If connection to the grid is determined to be infeasible for portions of the project, a non-diesel fueled generator shall be used.	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Residual Impact
	▪ The project shall comply with the California Air Resources Control Board (CARB) Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of toxic air contaminants (TAC) during construction.	
Impact AQ-4. The proposed project would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. Therefore, impacts would be less than significant.	None required.	Less than Significant
Biological Resources		
Impact BIO-1. The project would result in impacts to special-status plant and animal species. This impact would be less than significant with mitigation incorporated.	**Mitigation Measure BIO-1(a): California Tiger Salamander (CTS), California red-legged frog (CRLF), and Western Spadefoot Toad (WST) Pre-Construction Survey and Avoidance**. The following measures are required to reduce impacts to individual CTS, CRLF, and WST habitat (additional measures may be required by the California Department of Fish and Wildlife [CDFW] and/or United States Fish and Wildlife Service [USFWS]): ▪ No more than 14 days prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall conduct a pre-construction survey within the disked hayfield. The surveys shall include mapping of all areas containing small mammal burrows. ▪ An additional pre-construction clearance survey for CTS, CRLF, and WST shall be conducted where suitable habitat is present not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. ▪ Prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall oversee installation of exclusion fencing (e.g., silt fencing) along the north, east, and southern boundaries of the site (i.e., along the boundaries with undeveloped parcels) to prevent CTS, CRLF, and WST from entering active work areas. ▪ To avoid encountering migrating CTS within range of potentially suitable aquatic habitat, initial ground disturbance within upland areas shall be limited to July 15 to October 15. Work shall be postponed if chance of rain is greater than 70 percent based on the NOAA National Weather Service forecast or within 48 hours following a rain event greater than 0.1 inch. If work must occur during these conditions, a qualified biologist shall conduct a clearance sweep of work areas prior to the start of work. ▪ All projects occurring within or adjacent to habitats that may support CTS or CRLF shall have a County-approved biologist present during all initial ground disturbing/vegetation clearing activities.	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Residual Impact
	▪ If any life stage of the CTS or CRLF is identified within the work area, construction and grading in these areas shall be halted and the County, CDFW, and USFWS shall be contacted immediately. Additional avoidance strategies shall be approved by the County in consultation with CDFW and USFWS to achieve compliance with the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA). At a minimum, mitigation measures shall include purchase of credits at an approved conservation bank or purchase and management of offsite suitable upland habitat for CTS to offset loss of suitable upland habitat for this species (i.e., area[s] containing small mammal burrows) at a ratio of 2:1 (two acres preserved for every one acre of impact). ▪ A pre-construction survey report shall be submitted to the County Resource Management Agency within 15 days of completion of the survey. The report shall include the dates, times, weather conditions, aquatic and terrestrial habitat conditions (including a map of small mammal burrow or burrow complex locations), agency consultation(s) if individuals are discovered, and personnel involved in the surveys. **Mitigation Measure BIO-1(b): Worker Environmental Awareness Program (WEAP).** Prior to the initiation of grading or construction activities (including staging and mobilization), a County-approved qualified biologist shall conduct a WEAP training to be attended by all personnel associated with project construction. The purpose of the WEAP is to aid personnel in recognizing special-status resources that may occur on the project site. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction of the project. In addition, personnel will be briefed on the reporting process in the event of an unintended occurrence or inadvertent injury to a special-status species during construction or operations. All employees shall sign a form provided by the trainer documenting that they have attended the WEAP and understand the information presented to them. A WEAP attendance log that includes the names and signatures of all personnel that have received the training shall be provided to the San Benito County Resource Management Agency, Planning Division compliance monitoring staff prior to the start of grading or construction activities. **Mitigation Measure BIO-1(c): General Avoidance and Minimization Measures**. The following measures shall be implemented during grading and construction activities and implementation of the compensatory mitigation if required under BIO-1(a). ▪ Ground disturbance shall be limited to the minimum necessary to complete construction activities. Construction limits of disturbance shall be flagged. All equipment and material storage, parking, staging and other support areas shall be identified prior to issuance of a grading permit. Areas of special biological concern within or adjacent to construction limits shall	

Impact	Mitigation Measure(s)	Residual Impact
	have highly visible orange construction fencing installed between said area and the limits of disturbance. ▪ All work shall occur during daylight hours. ▪ Upon completion of construction all excess materials and debris shall be removed from the project site and disposed of appropriately. ▪ The work area shall remain clean. All food-related trash items shall be enclosed in sealed containers and removed from the site regularly. ▪ Pets shall be prohibited at the construction site. ▪ All vehicle maintenance/fueling/staging shall occur not less than 60 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies. ▪ All equipment operating on site shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within 100 feet of aquatic habitat and extra spill containment and clean up materials shall be located in close proximity for easy access. ▪ At the end of each workday, excavations shall be secured with a cover, or a ramp shall be provided to prevent wildlife entrapment. ▪ All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling. ▪ To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force shall be followed at all times (i.e., decontamination protocol). ▪ The applicant shall retain a County-approved biologist to monitor compliance with the above avoidance and minimization measures. The approved biologist shall submit monthly maintenance reports during construction to the County. **Mitigation Measure BIO-1(d): Western Pond Turtle and San Joaquin Whipsnake Pre-construction Survey.** ▪ No more than 14 days prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall conduct a pre-construction survey for western pond turtle, and San Joaquin whipsnake (coachwhip) within suitable habitat on the project site. If any of these species are identified within the work area, work that may potentially cause injury or harm to the species shall be halted until the individual leaves the site on their own. CNDDB Field Survey Forms shall be submitted to the CDFW for all special status animal species observed. ▪ The results of this survey shall be included in the pre-construction survey report submitted to the County Resource Management Agency within 15 days of completion of the survey.	

Impact	Mitigation Measure(s)	Residual Impact
	Mitigation Measure BIO-1(e): Nesting Migratory Birds and Raptors Survey and Avoidance. If ground disturbance, vegetation thinning, or other construction activities are proposed during the bird nesting season (February 1 through August 31), a focused survey for nesting raptors and migratory bird nests shall be conducted by a qualified biologist within 15 days prior to the beginning of construction activities to identify active nests. This survey shall be conducted within the proposed construction area and all accessible areas within 500 feet of the construction area for passerines and small raptors (including white-tailed kite and Loggerhead Shrike), and 0.25 mile for golden eagle, and Swainson's hawk. The results of this survey shall be submitted to the County prior to the start of work. If active raptor nests are found, no construction activities shall take place within 500 feet, or 0.25 mile for golden eagle and Swainson's hawk, of the nest until the young have fledged. If active nests are found, a 100-foot no disturbance buffer shall be established around the nest location. The no-disturbance buffer may be reduced based on the recommendations of the qualified biologist and approval of the County. The perimeter of the protected area shall be indicated by bright orange temporary fencing. No construction activities or personnel shall enter the protected area, except with approval of the biologist. If tree removal is necessary, trees containing nests shall be removed during the nonbreeding season (September 1 through January 31). If no active nests are found during the focused survey, no further mitigation shall be required. If a lapse in construction work of 15 days or longer occurs during the nesting season, additional nest surveys shall be required before construction is reinitiated. **Mitigation Measure BIO-1(f): San Joaquin Kit Fox Survey and Avoidance**. Prior to any ground disturbance, a qualified biologist shall conduct a pre-construction survey within the proposed disturbance footprint and a surrounding 250-foot radius within accessible areas. The survey shall establish the presence or absence of San Joaquin kit fox and/or suitable dens in accordance with USFWS survey guidelines (USFWS 1999). The pre-construction survey shall be conducted no more than 30 days prior to ground disturbance. If construction lapses for more than 30 days, the survey shall be repeated. Adjacent parcels under different land ownership are not required to be surveyed. The status of all surveyed dens shall be determined and mapped. Written results of pre-construction surveys shall be submitted to the County within five working days after survey completion and before the start of ground disturbance. If San Joaquin kit foxes and/or suitable dens are not identified in the survey area, further mitigation is not necessary. If San Joaquin kit foxes and/or suitable dens are identified in the survey area, avoidance measures in accordance with USFWS protocol shall only be implemented under the authorization of both a CDFW Incidental Take Permit (ITP) and a USFWS Habitat Conservation Plan (HCP). These measures may include but are not limited to: ▪ If a San Joaquin kit fox den is discovered in the proposed development footprint, the den shall be monitored for three days by a qualified biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.	

Impact	Mitigation Measure(s)	Residual Impact
	▪ Unoccupied dens shall be destroyed immediately to prevent subsequent use following USFWS protocol. ▪ If a natal or pupping den is found, USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW. Documentation of USFWS and CDFW approval shall be submitted to the County prior to den removal. ▪ If San Joaquin kit fox activity is observed at a den during the initial three-day monitoring period, the den shall be monitored for an additional five consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially blocking the entrance with one-way doors such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. ▪ If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances shall be demarcated. The configuration of exclusion zones shall be circular, with a radius measured outward from the den entrance(s). Ground disturbance activities shall not occur within the exclusion zones. Exclusion zone radii for potential dens shall be at least 50 feet and shall be demarcated with four to five flagged stakes. Exclusion zone radii for known dens shall be at least 500 feet and shall be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by San Joaquin kit fox.	
Impact BIO-2. No riparian and sensitive natural communities are present on the project site. No impact would occur.	None required.	No Impact
Impact BIO-3. Implementation of the project would result in the direct filling or removal of up to approximately 21 square feet of protected wetlands. Impacts would be less than significant with mitigation incorporated.	**Mitigation Measure BIO-3(a): Wetland and Drainage Avoidance**. Construction impacts to wetlands and drainages shall be avoided to the maximum extent feasible. Under the direction of a County-approved, qualified biologist, bright orange construction fencing shall be placed to mark a 100-foot buffer from the extent of the wetland to be avoided by construction, as feasible, to protect wetlands and drainages that would not be impacted by the project. The fencing shall be installed prior to the initiation of ground disturbance activities and shall remain in place until grading and construction activities are complete. No vehicles, person, materials, or equipment shall be allowed into the designated protected area. Grading plans shall show the location of these areas and protective fencing. Grading plans showing the location of wetlands and drainages as well as protective fencing locations shall be submitted to the County of San Benito for review and approval prior to issuance of zoning clearance for grading. Construction within the swale shall be avoided during the wet season, from October 1 through May 1.	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Residual Impact
	Mitigation Measure BIO-3(b): Off-Site Drainage Mitigation. Impacts to the off-site drainage shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted) for permanent impacts and minimum ratio of 1:1 (acres of habitat restored to acres impacted) for temporary impacts. Upon final design, the County-approved biologist shall determine the final impacts to wetlands and the subsequent amount of acreage needed for restoration for the project. Restoration on the project site is preferable. However, the County may approve off-site restoration at a location in the same watershed as the project that results in equal compensatory value if the applicant can demonstrate to the County's satisfaction that restoration on the project site cannot be achieved. An Off-Site Restoration Plan developed by a County-approved biologist shall be implemented for no less than five years after construction, or until the local jurisdiction and/or the permitting authority (e.g., USACE) has determined that restoration has been successful. The timing of construction of required mitigation measures shall be determined based on the impacts created by each phase of the project and approved by the County. The applicant shall submit the Off-Site Restoration Plan to the San Benito County Resource Management Agency, Planning Division as well as USWFS, USACE, RWQCB, and/or CDFW (depending upon the agencies permitting authority over the project) for review and approval prior to issuance of grading permits.	
Impact BIO-4. The project would not interfere substantially with wildlife movement. Impacts would be less than significant.	None required.	Less than Significant
Impact BIO-5. The project would not conflict with local policies or ordinances protecting biological resources. No impact would occur.	None required.	No Impact
Impact BIO-6. Implementation of the proposed project would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.	None required.	No impact

Impact	Mitigation Measure(s)	Residual Impact
Cultural Resources		
Impact CUL-1. The project would not cause a substantial adverse change in the significance of a historic resource, as there are no such resources on the project site. There would be no impact.	None required.	No impact
Impact CUL-2. Grading and excavation required for the proposed project would have the potential to unearth and adversely change or damage previously unidentified archaeological resources. Impacts would be less than significant with mitigation incorporated.	**Mitigation Measure CUL-2: Unanticipated Discovery of Archaeological Resources**. If work is halted due to an unanticipated discovery, consistent with Chapter 19.05 of the San Benito County Code, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology (National Park Service 1983) shall be contacted immediately and retained to evaluate the find. In addition to recording the site and preparing an archaeological report (as required per Chapter 19.05), the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the proposed project, additional work, such as data recovery excavation, may be warranted, at the recommendation of the professional archaeologist. If archaeological resources of Native American origin are identified during project construction, a qualified archaeologist will consult with the County to begin Native American consultation procedures.	Less than Significant with Mitigation
Impact CUL-3. Grading and excavation required for the proposed project would have the potential to unearth and disturb previously unidentified or unknown human remains. Impacts would be less than significant with mandatory adherence to existing regulations pertaining to discovery of human remains.	None required.	Less than Significant
Geology and Soils		
Impact GEO-1. A portion of the project site is underlain by the Tres Pinos Fault. Compliance with a building exclusion zone in this area would ensure impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Residual Impact
Impact GEO-2. Seismically induced ground-shaking could destroy or damage residences and infrastructure, resulting in loss of property or risk to human safety. Mandatory compliance with applicable California Building Code requirements and implementation of geotechnical recommendations would render impacts less than significant.	None required.	Less than Significant
Impact GEO-3. There is low potential for seismic related liquefaction, landslides, lateral spreading, and subsidence within the project site. Impacts would be less than significant.	None required.	Less than Significant
Impact GEO-4. Construction of the proposed project could result in soil erosion or loss of topsoil. However, compliance with existing regulations would reduce impacts to less than significant.	None required.	Less than Significant
Impact GEO-5. Expansive soils occur within the project site and construction atop this soil could result in damage to proposed residences and infrastructure. Incorporation of seismic and soil stability measures included in the geotechnical investigation, pursuant to San Benito County Code and the CBC, would ensure that impacts would be less than significant.	None required.	Less than Significant
Impact GEO-6. The project would not require the use of septic tanks or alternative wastewater disposal systems. There would be no impact.	None required.	No Impact

Impact	Mitigation Measure(s)	Residual Impact
Impact GEO-7. The project site partially overlies sediments with high paleontological sensitivity. Impacts would be less than significant with mitigation incorporated.	**Mitigation Measure GEO-7: Paleontological Resources Monitoring and Mitigation**. The County shall require the project proponent to implement the following measures for any construction phase in previously undisturbed geologic strata with high paleontological sensitivity in the project site and off-site improvement areas: 1. **Paleontological Worker Environmental Awareness Program**. Prior to the start of construction, the Qualified Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. 2. **Paleontological Monitoring**. Full-time paleontological monitoring shall be conducted during ground disturbing construction activities (i.e., grading, trenching). Monitoring shall be directed by a Qualified Paleontologist, defined as an individual meeting the SVP (2010) standards of a qualified professional paleontologist (i.e., someone with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years). Paleontological monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring shall be determined by the Qualified Paleontologist based on the observation of the geologic setting from initial ground disturbance, and subject to the review and approval by San Benito County. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions once the full depth of excavations has been reached, they may recommend that monitoring be reduced to periodic spot-checking or ceased entirely. Monitoring shall be reinstated if any new ground disturbances are required, and reduction or suspension shall be reconsidered by the Qualified Paleontologist at that time. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources: a. **Fossil Salvage**. If fossils are discovered, the paleontological monitor shall have the authority to halt or temporarily divert construction equipment within 50 feet of the find until the monitor and/or lead paleontologist evaluate the discovery and determine if the fossil may be considered significant. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Residual Impact
	salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits b. **Fossil Preparation and Curation**. Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist. 3. **Final Paleontological Mitigation Report**. Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to San Benito County. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.	
Greenhouse Gas Emissions		
Impact GHG-1. The proposed project would generate temporary and long-term increases in GHG emissions that would not conflict with 2022 Scoping Plan GHG emission reduction goals. The proposed project would be consistent with applicable plans, policies, and regulations aimed at reducing GHG emissions. As such, impacts would be less than significant.	None required.	Less than Significant
Noise		
Impact NOI-1. Operation of the project would not generate noise in excess of established standards. This impact would be less than significant.	None required.	Less than Significant
Impact NOI-2. Construction and operation of the project would not exceed vibration thresholds. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Residual Impact
Impact NOI-3. The project site is located outside of noise contours associated with airports. Therefore, new development under the proposed project would not be exposed to excessive noise levels from aircraft operations and no impact would occur.	None required.	No Impact
Transportation		
Impact TRA-1. The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be less than significant.	None required.	Less than Significant
Impact TRA-2. The project would not conflict with CEQA Guidelines Section 15064.3(b), and impacts would be less than significant.	None required.	Less than Significant
Impact TRA-3. The project would not substantially increase hazards due to a geometric design feature or incompatible uses. Impacts would be less than significant.	None required.	Less than Significant
Impact TRA-4. The project includes one primary access point to the project site. The proposed project would not result in inadequate emergency access. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Residual Impact
Tribal Cultural Resources		
Impact TCR-1. Grading and excavation required for the proposed project would have the potential to adversely impact tribal cultural resources. Impacts would be less than significant with mitigation incorporated.	**Mitigation Measure TCR-1: Unanticipated Discovery Tribal Cultural Resources**. If cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 200 feet of the find shall cease and desist until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. Staking of the area of discovery will be implemented with stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery. If the County, in consultation with local Native American tribes, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.	Less than Significant with Mitigation
Utilities and Service Systems		
Impact UTIL-1. The project would not require or result in the relocation or construction of new or expanded utility facilities, beyond the on-site improvements and off-site connections necessary to provide services to the project site. The environmental effects of installing on- and off-site facilities for the project are analyzed throughout this EIR, including relevant to water, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Residual Impact
Impact UTIL-2. Sufficient water supplies would be available to serve full project buildout and reasonably foreseeable future development during normal, dry, and multiple dry years. Project impacts would be less than significant.	None required.	Less than Significant
Impact UTIL-3. The project would generate wastewater from the new residential land uses, which would be accommodated by existing wastewater treatment facilities owned and operated by the Sunnyslope County Water District. Sufficient wastewater treatment capacity is available. Potential impacts would be less than significant.	None required.	Less than Significant
Impact UTIL-4. The amount of solid waste that would be generated during construction and operation of the proposed project would not exceed the surplus capacity of the landfill serving the site. Impacts would be less than significant.	None required.	Less than Significant
Impact UTIL-5. The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Impacts would be less than significant.	None required.	Less than Significant

1 Introduction

This document is an Environmental Impact Report (EIR) for a proposed subdivision and residential development located at 291 Old Ranch Road, east of the City of Hollister in unincorporated San Benito County, California. The proposed Lee Subdivision Project (hereafter referred to as “proposed project” or “project”) would be located on a 33.4-acre site currently developed with a one-story residence, a barn, and Old Ranch Road. The project would involve demolition of the existing structures, subdivision of the property into 141 residential lots, and the development of 121 one- and two-story single-family detached units and 20 single-family duet units. A total of 30 junior accessory dwelling units (hereinafter referred to as “ADUs”) would be included in the project, all of which would be deed restricted for low-income housing, providing 21 percent of units as affordable housing. Other components of the project include construction of internal streets, public land dedications for street rights-of-way, a public park, and utility connections. The proposed project is described in detail in Section 2, *Project Description.*

This section discusses (1) the project and EIR background; (2) the legal basis for preparing an EIR; (3) the scope and content of the EIR; (4) issue areas found not to be significant; (5) the lead, responsible, and trustee agencies; and (6) the environmental review process required under the California Environmental Quality Act (CEQA).

1.1 Environmental Impact Report Background

San Benito County distributed a Notice of Preparation (NOP) of the EIR for a 30-day agency and public review period starting on February 22, 2022, and ending on March 24, 2022. The County received letters from four agencies in response to the NOP during the public review period, as well as one comment from the public. The NOP is presented in Appendix A of this EIR, along with the NOP comments received. Table 1-1 summarizes the content of the letters and where the issues raised are addressed in this EIR.

On November 16, 2022, the San Benito County Planning Commission conducted a public hearing on the proposed project. At the conclusion of the hearing the Planning Commission voted 3-1 to deny the project. The applicant appealed. The Board of Supervisors heard the item on December 13, 2022, opened a duly noticed public hearing regarding the appeal of the Planning Commission decision of November 16, 2022, and at the hearing the Board heard and received all oral and written testimony and evidence that was made, presented, or filed, and all persons present at the hearing were given an opportunity to hear and be heard with respect to any matter related to the appeal. At the conclusion of the public testimony, the Board of Supervisors voted to continue its public hearing to January 17, 2023. On January 17, 2023, the San Benito County Board of Supervisors found the EIR inadequate and denied approval of the project.

As such, the County has prepared a Recirculated Draft EIR pursuant to CEQA. The revisions included in the Recirculated Draft EIR include clarification of an off-site grading area, project description changes related to the proposed affordability of the project, and revisions addressing County Board of Supervisors findings of an Inadequate EIR in Resolution 2023-01.

Table 1-1 NOP Comments and EIR Response

Commenter	Comment/Request	Where Comment Is Addressed
State Agencies		
Native American Heritage Commission	Recommends consultation with California Native American tribes that are affiliated with the project area, pursuant to consultation requirements established by Senate Bill 18 and Assembly Bill 52. Provides recommendations for consultation process and record searches.	Comments are addressed in Section 4.8, *Tribal Cultural Resources.*
California Department of Transportation (Caltrans)	States that vehicle miles traveled (VMT) has replaced level of service as the metric of transportation impacts, pursuant to Senate Bill 743. States that traffic data used in transportation analyses must have been collected before March 13, 2020, to avoid measuring abnormal traffic patterns due to the COVID-19 pandemic.	Comments are addressed in Section 4.7, *Transportation*.
Local Agencies		
San Benito County Local Agency Formation Commission (LAFCO)	Indicates that sewer service connection from the City of Hollister would require an amendment to the City's Sphere of Influence. Recommends the project include a Sphere of Influence amendment and describe the amendment in the Project Description. Indicates that the project's sewer extension will need approval from the City of Hollister.	Sewer service connections and related approvals are discussed in Section 2, *Project Description*, and Section 4.9, *Utilities and Service Systems.*
	Recommends that the project site be designated for residential use consistent with the City of Hollister's General Plan.	Land use is discussed in Section 4.10, *Effects Found Not to be Significant.*
	Requests that the EIR recognize that the project would require LAFCO's approval for its action required for wastewater services provision.	Comments are addressed in Section 2, *Project Description*
San Benito High School District (SBHSD)	Claims that the cumulative impact of unmitigated growth in San Benito County is considerable, significant, and adverse to SBHSD schools. Indicates that SBHSD schools do not have capacity for the number of students that would be generated by the proposed project. Indicates that Impact fees collected for the proposed project and cumulative development projects in the County do not adequately cover the cost of needed new school facilities. Claims that payment of school impact fees do not adequately fund the additional schools needed.	Impacts related to public schools are discussed in Section 4.10, *Effects Found Not to be Significant.*

Commenter	Comment/Request	Where Comment Is Addressed
	Requests that the EIR evaluates a community facilities district (CFD) as a potential mitigation measure to address impacts to school facility capacity. Requests an opportunity to work with the County to ensure that adequate mitigation measures are implemented to mitigate project impacts to school facilities and capacities.	
	Indicates that traffic circulation and congestion in areas around San Benito High School are dangerous, and the project would contribute to hazardous traffic conditions around schools.	Traffic related hazards are discussed in Section 4.7, *Transportation.*
Individual Comments		
Mary J. Whitaker Anderson	Expresses concern for water use during construction and increased water demand during operation of the project.	Project water use is discussed in Section 4.9, *Utilities and Service Systems,* and in Section 4.10, *Effects Found Not to be Significant* under Hydrology and Water Quality.
	Expresses concern for traffic safety as the project would increase the number of vehicles on Old Ranch Road and Fairview Road.	Potential transportation impacts are discussed in Section 4.7, *Transportation.*

1.2 Purpose and Legal Authority

The proposed project requires the discretionary approval of the San Benito County Resource Management Agency, Planning Division; therefore, the project is subject to the environmental review requirements of CEQA. In accordance with Section 15121 of the *CEQA Guidelines* (California Code of Regulations, Title 14), the purpose of this EIR is to serve as an informational document that:

> "...will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project."

This EIR has been prepared as a project EIR pursuant to Section 15161 of the *CEQA Guidelines*. A project EIR is appropriate for a specific development project. As stated in the *CEQA Guidelines*:

> "This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation."

This EIR is to serve as an informational document for the public and San Benito County decision makers. The process will include public hearings before the Planning Commission and Board of Supervisors to consider certification of a Final EIR and approval of the proposed project.

1.3 Scope and Content

The following issues were found to include potentially significant impacts and have been studied in the EIR:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Noise
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

In preparing the EIR, use was made of pertinent County policies and guidelines, certified EIRs and adopted CEQA documents, and other background documents. A full reference list is contained in Section 7, *References and Preparers*.

The alternatives section of the EIR (Section 6) was prepared in accordance with Section 15126.6 of the *CEQA Guidelines* and focuses on alternatives that can eliminate or reduce significant adverse effects while feasibly attaining most of the basic project objectives. In addition, the alternatives section identifies the "environmentally superior" alternative among the alternatives assessed. The alternatives evaluated include the CEQA-required "No Project" alternative and two alternative development scenarios for the project area.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. Section 15151 of the *CEQA Guidelines* provides the standard of adequacy on which this document is based. The *CEQA Guidelines* state:

> "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."

1.4 Issues Not Studied in Detail in the EIR

Section 15128 of the *CEQA Guidelines* requires an EIR to briefly describe any possible effects that were determined not to be significant and were therefore not discussed in detail in the EIR. The resource areas below, included in the environmental checklist listed in Appendix G of the *CEQA Guidelines,* were determined to have less than significant environmental impacts:

- Aesthetics
- Agricultural and Forestry Resources
- Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Wildfire

These issues are discussed further in Section 4.10, *Effects Found Not to be Significant.* Remaining issues, including Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Noise, Transportation, Tribal Cultural Resources, and Utilities and Service Systems, are analyzed in Section 4 of this EIR.

1.5 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define lead, responsible, and trustee agencies. The County of San Benito is the lead agency for the project because it holds principal responsibility for approving the project.

A responsible agency refers to a public agency other than the lead agency that has discretionary approval over the project. Responsible agencies include the Central Coast Regional Water Quality Control Board (CCRWQCB), which regulates water quality in the region; the Monterey Bay Air Resources District (MBARD), which regulates air quality in the region; and the San Benito County Local Agency Formation Commission (LAFCO), which coordinates changes in local government boundaries in the county. The EIR will be submitted to these agencies for review and comment.

A trustee agency refers to a state agency having jurisdiction by law over natural resources affected by a project. Trustee agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife.

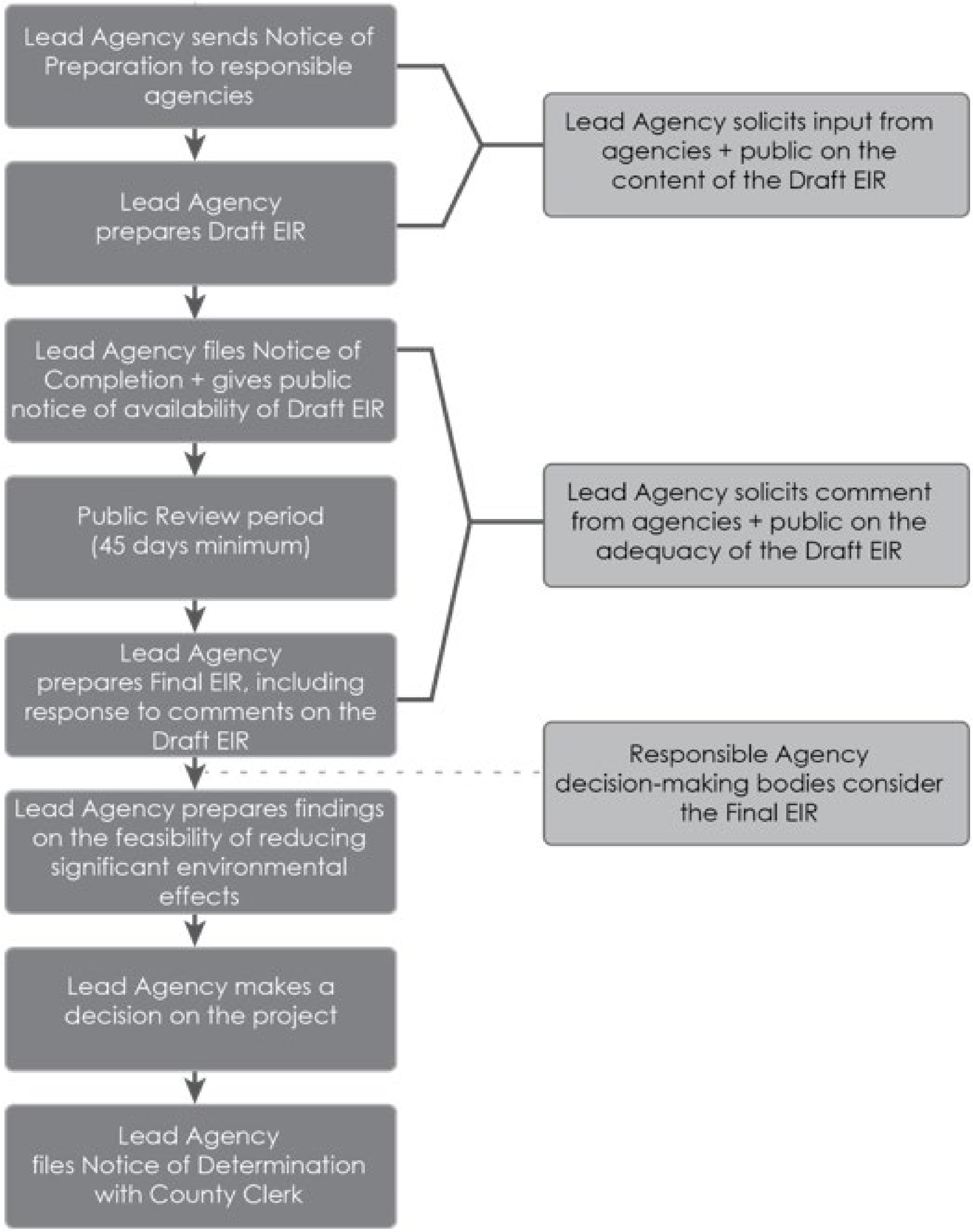
1.6 Environmental Review Process

The environmental impact review process, as required under CEQA, is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order.

1. **Notice of Preparation (NOP)**. After deciding that an EIR is required, the lead agency (San Benito County) must file a NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days.
2. **Draft EIR.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of mitigation measures; g) consideration of alternatives; and h) a discussion of irreversible changes.
3. **Notice of Completion (NOC) and Notice of Availability (NOA).** The lead agency must file an NOC and NOA with the State Clearinghouse when it completes a Draft EIR. The lead agency must place the NOA in the County Clerk's office for 30 days (Public Resources Code Section 21092) and send a copy of the NOA to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and/or c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR requires state agency review, the public review period must be at least 45 days (Public Resources Code 21091).

4. **Final EIR.** A Final EIR must include: a) the Draft EIR or a revision of the Draft EIR; b) list of persons and entities commenting; c) copies of comments received during public review; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** The lead agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** When the lead agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** The lead agency must file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). A local lead agency must file the NOD with the County Clerk. The NOD must be filed with the State Clearinghouse if there are state agency approvals associated with the project. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

Figure 1-1 Environmental Review Process



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2 Project Description

This section describes the proposed project, including the project applicant, the project site and surrounding land uses, major project characteristics, project objectives, and discretionary actions needed for approval.

2.1 Project Applicant

Bill Lee
291 Old Ranch Road
Hollister, California 95023
831-254-9906

2.2 Lead Agency Contact Person

Arielle Goodspeed, Principal Planner
County of San Benito
Resource Management Agency, Planning Division
2301 Technology Parkway
Hollister, California 95023
831-902-2547
agoodspeed@cosb.us

2.3 Project Location

The project site is located at 291 Old Ranch Road, southeast of the City of Hollister and east of Fairview Road, in unincorporated San Benito County. The project site is regionally accessible from State Route 25 and locally accessible from Fairview Road (see Figure 2-1). The project site encompasses most of the property contained within Assessor's Parcel Number (APN) 025-320-004, excluding the northeastern corner of the property. The property comprising APN 025-320-004 is approximately 39.5 acres in size; whereas the project site is approximately 33.4 acres, which includes the 27.45-acre area proposed for development, an approximately 3.15-acre slope easement (to be graded in support of the residences along the eastern boundary of the project site), and an approximately 2.8-acre natural drainage easement. The remaining 6.1 acres of would remain undeveloped, and is referred to as the remnant portion. No application for development on the 6.1-acre remnant portion has been proposed and future development of the remnant portion is not foreseen at this time.

The project site has an irregular shape, including a narrow extension along Old Ranch Road connecting the main portion of the site with Fairview Road. The project site is surrounded by residences, vineyards, and vacant land planned for residential development. Planned development (some of which is already constructed) in the vicinity of the project site includes residences at Fairview Corners to the south, Roberts Ranch to the east (fully built out), West of Fairview to the northeast (under construction), and Santana Ranch to the north (almost built out), and the Gavilan Community College San Benito Campus (under construction) to the south.

2.4 Existing Site Characteristics

2.4.1 Existing Development on the Project Site

The project site currently has a one-story residence and barn on the southwest portion of the site. These buildings cover an area (building footprint) of approximately 9,950 square feet. The residence is connected to municipal water supply through Sunnyslope County Water District (SCWD) and uses an on-site septic system and leach field for wastewater disposal. Old Ranch Road is currently a paved two-lane private road that provides access to adjacent rural residences and terminates at the existing residence on the project site. Old Ranch Road is fully contained within the project site, with the exception of its intersection with Fairview Road. The project site contains a raised knoll in the central portion of the site, with elevations gradually decreasing in all directions from the knoll. Within the parcel that contains the project site, a drainage corridor travels northwest to southeast adjacent to the project's northeastern boundary. Figure 2-1 shows the regional location of the project site and Figure 2-2 shows the location of the site in its neighborhood context. Figure 2-3 shows photographs of the existing residence on the project site that would be demolished or removed to accommodate the proposed project.

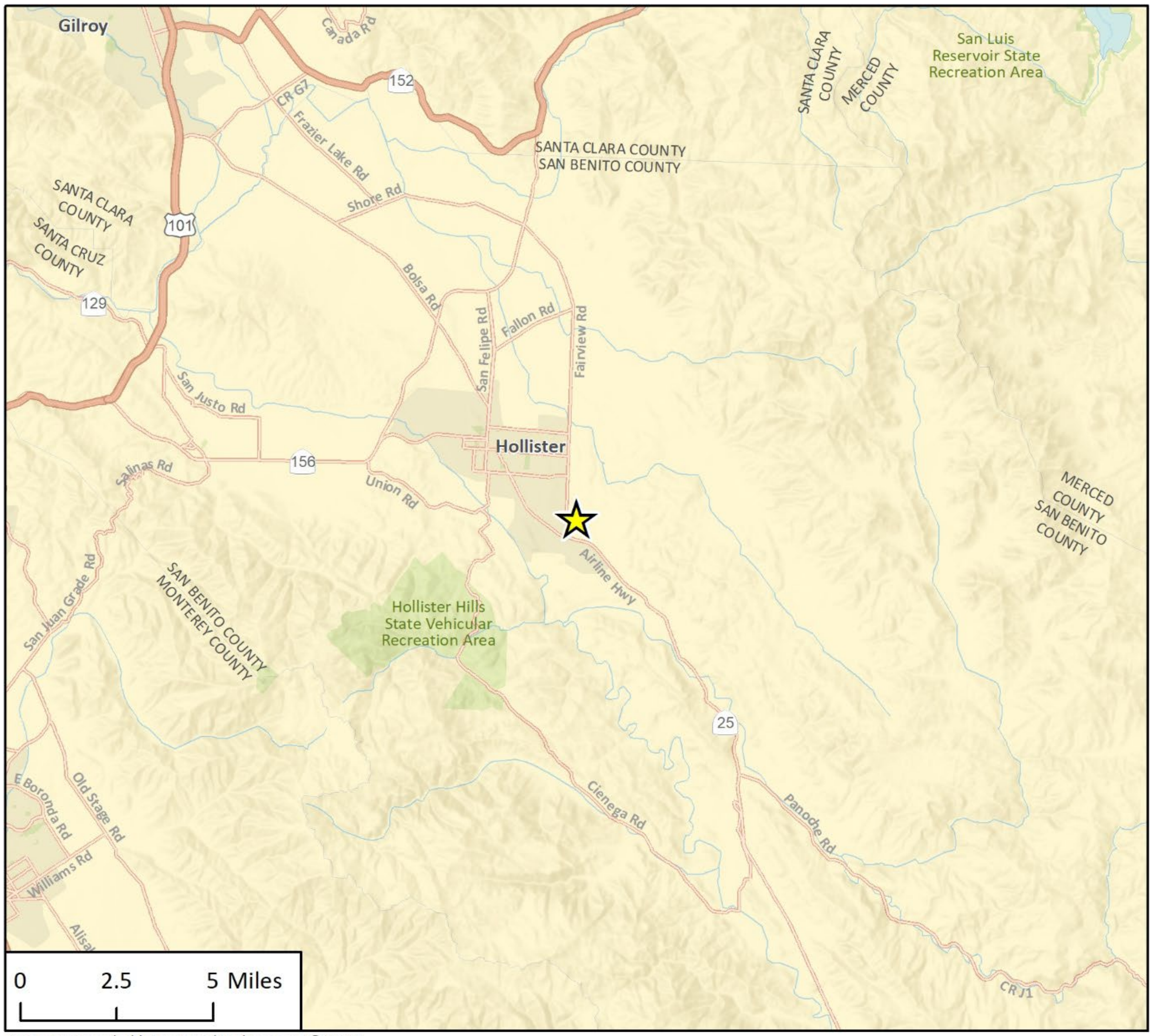
2.4.2 Current Land Use Designation and Zoning

The project site currently has a one-story residence, barn, and Old Ranch Road. The remainder of the project site is dry-farmed with oat hay (animal feed), given the poor soil quality (site soils have a non-irrigated land capability classification of 3 and 4: severe limitations and very severe limitations, respectively; Natural Resources Conservation Service 2024). The project site has a 2035 General Plan land use designation of Residential Mixed (RM) but is currently zoned Rural (R), as defined by the County's Zoning Ordinance and the Land Use Element of the 2035 General Plan. The consistency requirements of State Planning & Zoning Law require the rezone of the project site to a zone consistent with the General Plan's "RM" land use designation. The General Plan's RM land use designation has a maximum density for single-family residences of up to 20 dwelling units per acre, with a maximum floor-area-ratio of 0.8. The current R District (Rural) zoning is inconsistent with that General Plan RM land use designation, as the R District Zoning allows only single-family residence, one additional dwelling, small livestock farming, agriculture, accessory buildings and uses, hobby kennels, and other similar uses, per Chapter 25.03 of the San Benito County Code.

2.4.3 Surrounding Land Uses

The project site is immediately bordered by rural residential development to the west, rural residences with vineyards and an associated winery to the north (Leal Vineyards), and planned development to the south and east. Leal Vineyards includes active agricultural operations of vineyards along the northern border of the project site. Land to the south is planned for the Fairview Corners residential development, with 5,000-square foot minimum lot sizes. Similarly, land west of Fairview Road has been developed with the Roberts Ranch Subdivision residential development, and the West of Fairview residential development is under construction, both with 6,000-square foot minimum lot sizes. Additionally, between Fairview Corners and Highway 25, Gavilan Community College's San Benito Campus is also under construction. Additional information regarding these future projects is provided in Section 3, *Environmental Setting*. Wind in the vicinity of the project site most often flows from the northwest, west and southeast (Iowa State University 2024).

Figure 2-1 Regional Location



Imagery provided by Esri and its licensors © 2022.

Project Location

N

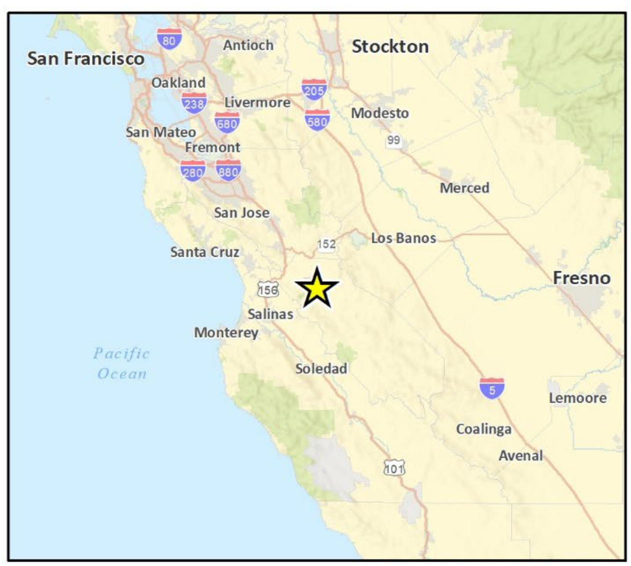


Figure 2-2 Project Site Location

Imagery provided by Google and its licensors © 2023.
Additional information provided by San Benito General Plan, 2021.

Figure 2-3 Site Photographs

Photo 1. View of the barn and private driveway on the project site, facing east from Old Ranch Road.

Photo 2. View of oat hay with foothills in the distance, facing north.

2.5 Project Characteristics

The 33.4-acre project site includes a 27.45-acre area proposed for development, an approximately 3.15-acre slope easement (to be graded in support of the residences along the eastern boundary of the project site), and an approximately 2.8-acre natural drainage easement.

The proposed project would result in the demolition/removal of the existing on-site residence, barn, septic system, and leach field, to allow for the subdivision of 141 residential lots. These new residential lots would be developed with 121 one- and two-story single-family detached units and 20 single-family duet units. A total of approximately 21 percent of the residences (30 units) would be designated as affordable housing, per an affordable housing agreement between the applicant and the County (which would be entered into as a condition of approval). A total of 30 junior accessory dwelling units (hereinafter referred to as “ADUs”) would be included in the project, all of which would be deed restricted for low-income housing.

The project includes public land dedications for street rights-of-way (ROW) and a public park. Construction of internal streets and the proposed park would be undertaken by the project applicant, with the County of San Benito responsible for maintenance of these features through a community facilities district (CFD).

The project would require a Zoning Code Amendment and Zone Map Change to Residential Multiple (RM).

2.5.1 Proposed Site Plan

Figure 2-4 shows the proposed site plan, including 141 residential lots, internal street circulation, public park, and passive open space. Figure 2-4 also indicates which lots would include an ADU (30 total lots), and which would support a single-story building plan (55 total). The duet (single-family attached) lots would support residences that are approximately 80 percent of the size of residences on the single-family detached lots. Table 2-1 provides details on the characteristics of the proposed project.

Figure 2-4 Proposed Site Plan

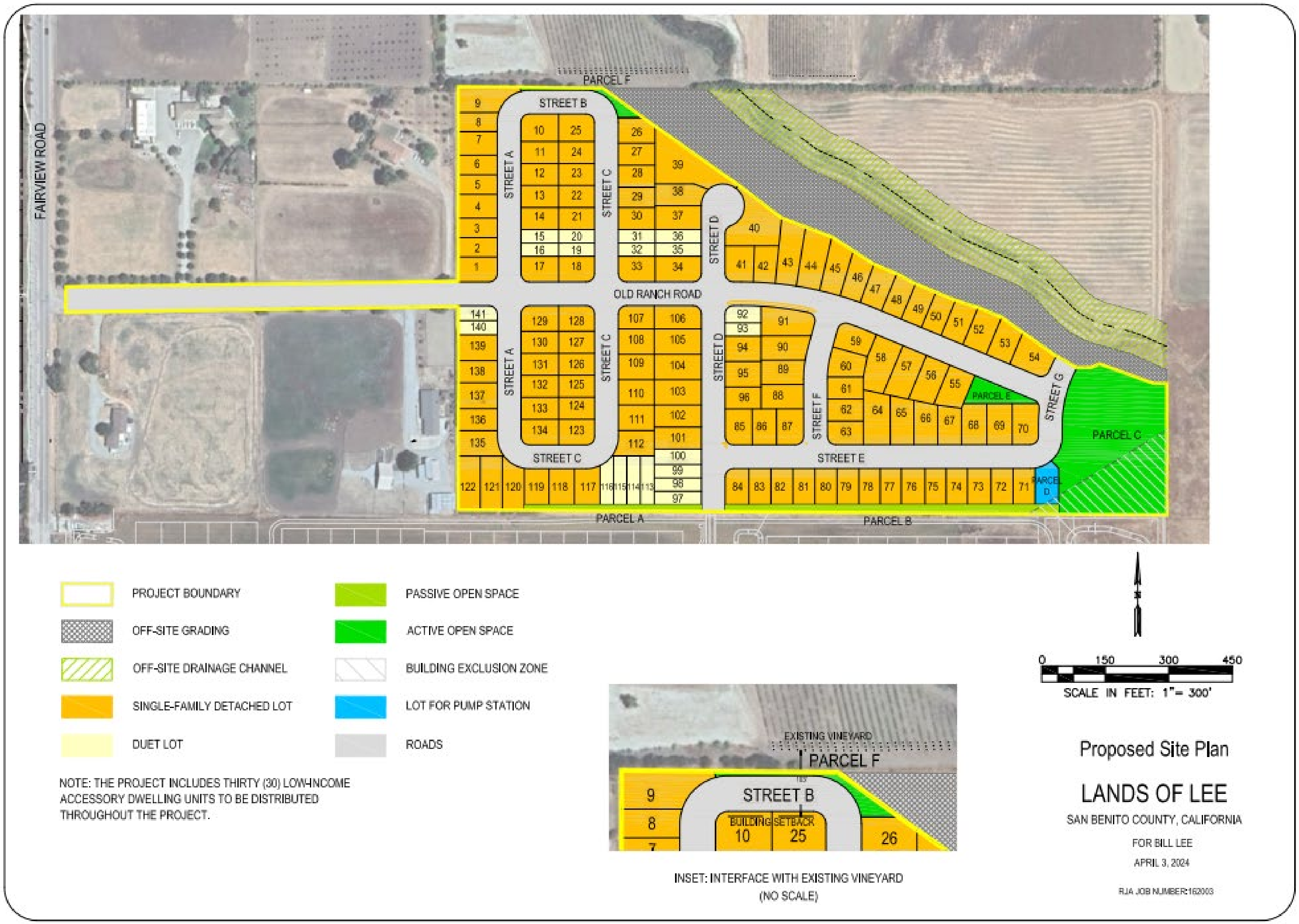


Table 2-1 Project Characteristics

Address	291 Old Ranch Road
APN	025-320-004 (portion)
Height/Stories	1-2 stories
Total Lot Area	**33.4 acres**
Residential Lots	16.43 acres
Public Park/Public Open Space	2.13 acres
Passive Open Space	0.50 acre
Internal Public Streets	8.27 acres
Lift Station Parcel	0.12 acre
Slope Easement	3.15 acres
Natural Drainage Easement	2.80 acres
Total Residential Lots	**141 lots**[1]
Single Family Detached (SFD) Units[2]	121 units
Single Family Attached (SFA) Units	20 units
Accessory Dwelling Units	30 units all of which would be deed-restricted low income
Minimum SFD Lot Size	4,200 square feet
Minimum SFA Lot Size	2,500 square feet
Net Residential Density	8.58 DU/net acre
Gross Residential Density	4.22 DU/gross acre

Notes: DU = dwelling units

[1] Please refer to the affordability options described in Section 2.5.2, below.

[2] The respective number of SFD single-story and SFD two-story units may vary; however, the total of both unit types would remain at 121 units.

2.5.1 Affordability

The project is subject to the County's inclusionary housing requirements, pursuant to County Code Chapter 21.03 (Affordable Housing Requirements). To satisfy this requirement, the applicant is proposing 30 ADUs (described further in Section 2.5.3, below), all of which would be deed restricted for 30 years to ensure affordability. These 30 proposed affordable ADUs would represent approximately 21 percent (21%) of the total units, thereby exceeding the County's requirement of 20 percent.

2.5.2 Accessory Dwelling Units

The County's Zoning Code Chapter 25.07 and California Government Code Section 65852.27 allow for the construction of an ADU on any lot which is zoned for residential use and is connected to public water and wastewater service. The proposed project includes the construction of 30 total ADUs. These ADUs would be designed as an integral part of the single-family structure (i.e., attached).

As proposed, approximately 21 percent (21%) of the total number of proposed single-family residential homes would include a low-income deed restricted ADU (30 ADUs out of 141 single-family units). By comparison, applications for ADUs in the County in 2021 totaled 16 units, or approximately 0.2 percent of all single-family residences in the County (California Department of Finance 2021).[1] Therefore, the amount of ADUs proposed by the applicant exceeds the amount of ADU development that would be expected based on historical ADU production in the County. No ADU development beyond the 30 low-income ADUs proposed by the applicant is assumed for purposes of this EIR.

2.5.3 Parks and Open Space

The project includes a 1.9-acre public neighborhood park in the southeastern portion of the project site. The proposed park would include shaded seating and picnic areas, open grass areas, a vista point with benches and/or picnic tables, and walking and/or bicycling paths. The park would not provide off-street parking, restrooms, or lit recreational facilities. In addition to the 1.9 acre park on parcel C, there is public open space on parcels E & F (.23 acres) which would allow for a greater buffer between the proposed project and existing Leal Vineyards, and an additional 0.5 acre of passive open space along the southern project boundary. Both the proposed park and public/passive open space would be dedicated to San Benito County for maintenance, funded through a community facilities district (CFD). Per San Benito County Code Section 23.15.008(D)(2), the applicant would pay in-lieu fees for the provision of additional off-site parkland in the County.

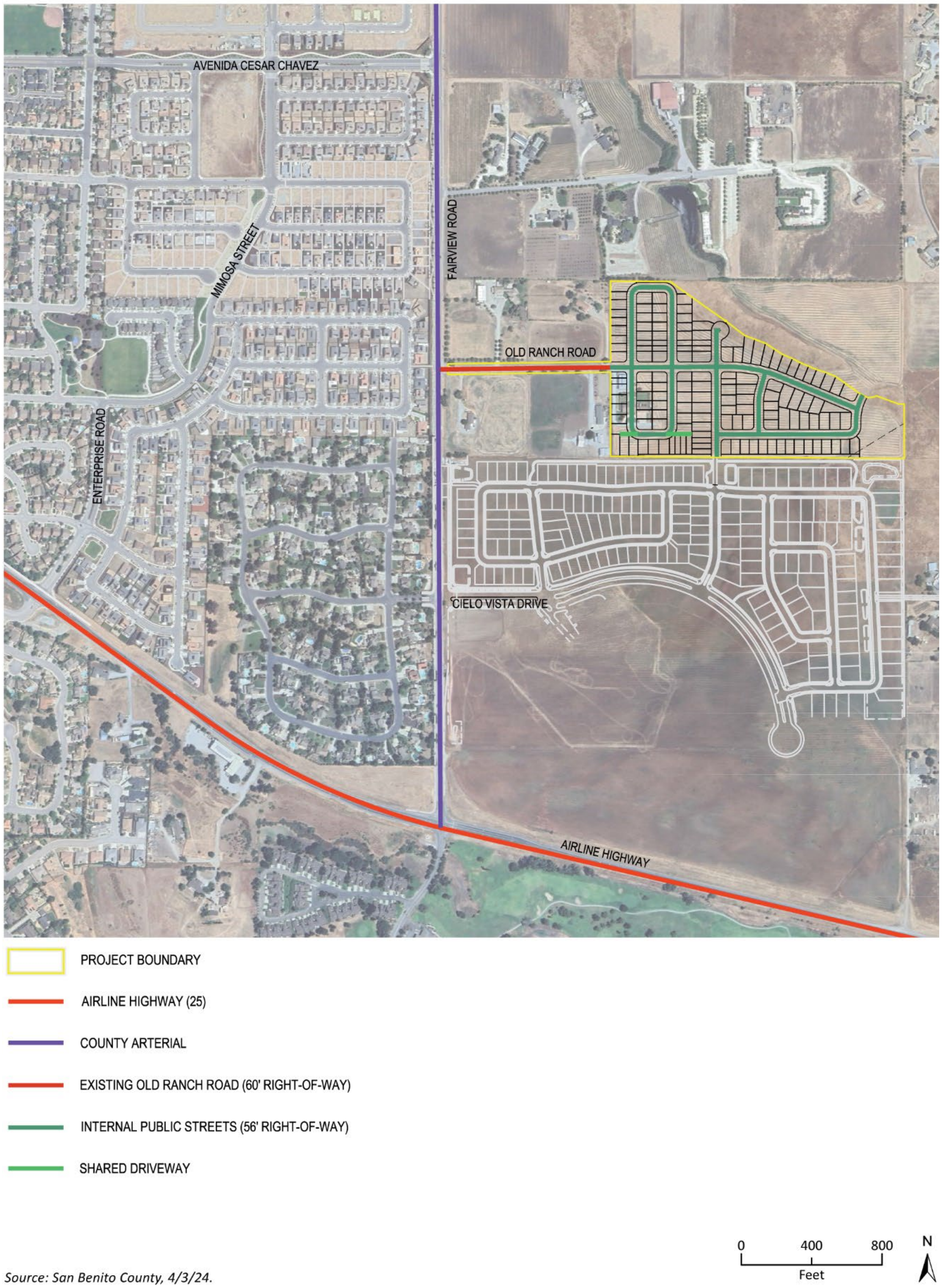
2.5.4 Site Access and Circulation

The main site access would be provided from Fairview Road via the existing Old Ranch Road, which would be improved to County transportation standards. A secondary site access at the southern project boundary would connect to the planned Fairview Corners residential development, providing secondary fire, police, and emergency vehicles access, as well as private vehicles, bicycle, and pedestrian access to the Fairview Corners and Gavilan College, thus increasing safety to those southerly developments. Internal streets, including the existing Old Ranch Road, which is currently a private road, would be constructed as part of the project and dedicated to San Benito County for maintenance through a CFD. Figure 2-5 shows the proposed on-site vehicular circulation and off-site roadway connections.

The existing segment of Old Ranch Road would be improved to conform with County standards of a 34-foot road section with parkways and sidewalks within a 60-foot ROW. Old Ranch Road would be extended to the proposed public park, meeting County standards within a 56-foot ROW. Internal streets include blocks, loops, and one cul-de-sac, providing access to each proposed residential lot. Shared driveways are proposed for seven of the residential lots on the southerly portion of the project site. Shared driveways would be maintained through reciprocal access and maintenance agreements. Sidewalks would be provided on all internal streets. Additionally, the project would provide sidewalk connections to the planned Fairview Corners sidewalks and trail at the southern project boundary. This expanded pedestrian network would provide pedestrian access to nearby local parks, including the proposed on-site park. While no bicycle-only trails are proposed on site, bicyclists could use the proposed street network and connection to off-site trails. Figure 2-6 provides a map of these proposed pedestrian facilities and connections to planned off-site pedestrian facilities.

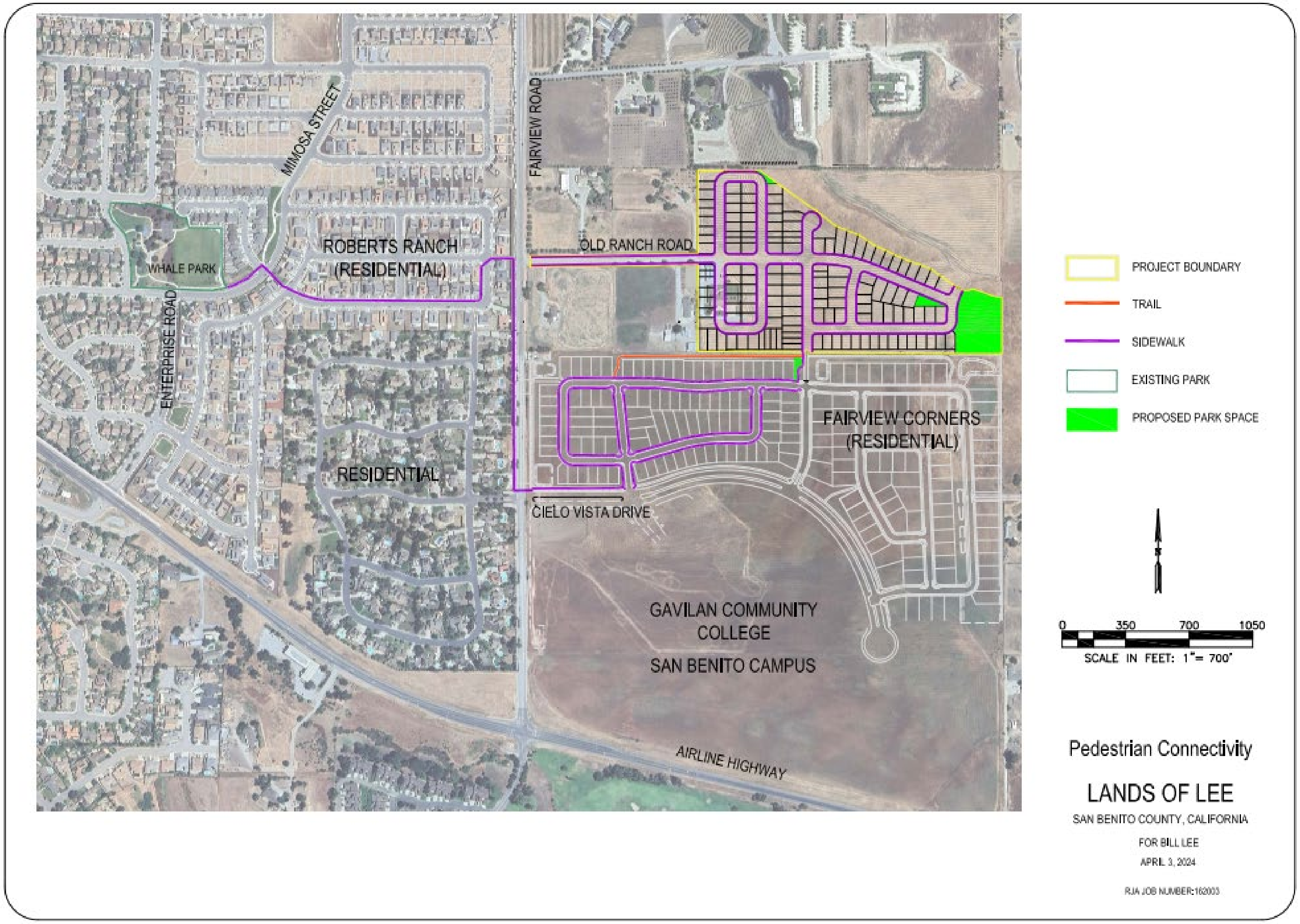
[1] Total residences in the unincorporated county totaled 7,360 units, with 6,410 single-family detached units.

Figure 2-5 Vehicular Circulation



Source: San Benito County, 4/3/24.

Figure 2-6 Pedestrian Connectivity with Adjacent Planned Development



2.5.5 Public Services

The San Benito Sherriff's Department would provide law enforcement services. Fire protection and emergency response services are provided by the City of Hollister Fire Department through a contract with San Benito County. The site is within SBCFD Service Area 26. SBCFD contracts with the California Department of Forestry and Fire Protection (CAL FIRE) to manage and provide these services. The nearest fire station is the CAL FIRE station at 1979 Fairview Road, approximately 1.4 miles north of the site.

2.5.6 Utilities

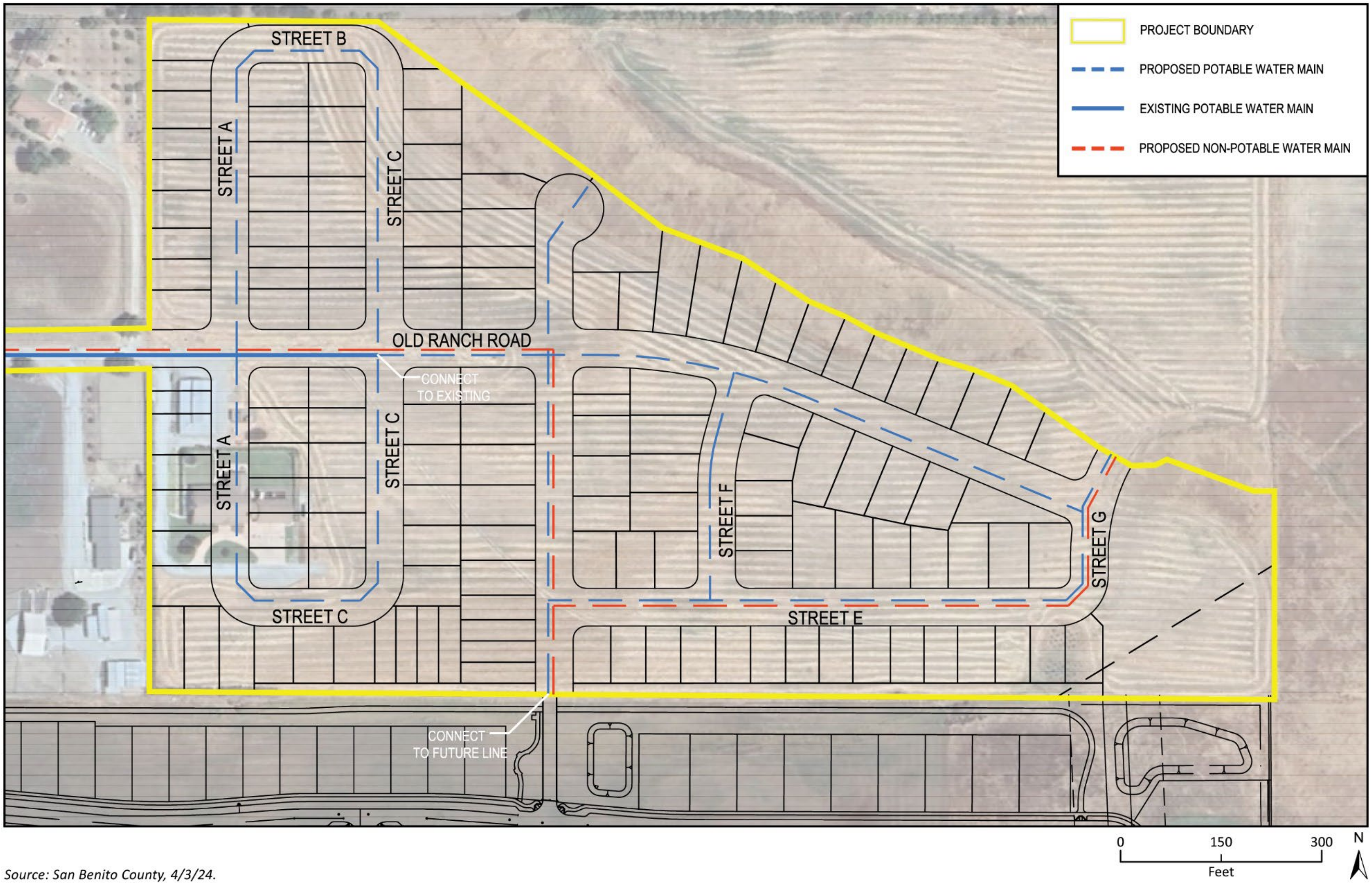
Water

The project site is within the Sunnyslope County Water District (SCWD) service boundary. The project's water system would connect to the future Fairview Corners water system at the southern project boundary and to the existing water system in Old Ranch Road. Buildout of the project site and adjacent planned development would result in a looped system of water mains between Gavilan Community College's San Benito Campus, Fairview Corners residential development, and the current residences on Old Ranch Road. The project also includes the installation of non-potable water mains for possible future irrigation of the proposed public park and remainder parcel, as well as installing non-potable water mains through the project site to the intersection of Old Ranch Road and Fairview Road. The proposed non-potable water mains would connect to the planned development immediately south of the project site. The proposed on-site potable and non-potable systems would be dedicated to SCWD for operation and maintenance, funded through monthly water rates collected by SCWD. Figure 2-7 shows the proposed location for new potable and non-potable water mains on site.

Wastewater

The project site is within the SCWD boundary. It was annexed in 1987 to receive water service from the district (San Benito County Local Agency Formation Commission File 1987-275). The project site is included within the Hollister Urban Area boundary of the Hollister Urban Area Water and Wastewater Master Plan (City of Hollister 2008), which was approved under a Memorandum of Understanding between the San Benito County Water District, San Benito County, the City of Hollister, and the SCWD (see Figure 3-2 and corresponding Table 3-1). The intent of the MOU of the Hollister Urban Area Water and Wastewater Master Plan was for areas both within and outside the City of Hollister located north of Airline Highway to be served by an expanded and upgraded City of Hollister tertiary wastewater treatment plant with the beneficial reuse of the treated wastewater for agricultural crop production. The project site is located north of Airline Highway in the area intended to be served by the City of Hollister's wastewater treatment plant under the terms of the Memorandum of Understanding. On August 7, 2023, the City of Hollister City Council voted to have a contract prepared between the City and SCWD to provide sewer service to Gavilan College, this proposed project (Lands of Lee), the Fairview Corners project, and the Cielo Vista sewer plant, which is close to the end of its useful life. The Hollister City Council further directed that the contract(s) be referred to the San Benito County Local Area Formation Commission (LAFCO) for review.

Figure 2-7 Proposed Potable and Non-Potable Water Pipelines



Source: San Benito County, 4/3/24.

On October 17, 2023, SCWD approved a wastewater agreement between SCWD and the City of Hollister; on November 6, 2023, the City of Hollister approved that same agreement; and on December 14, 2023, San Benito County LAFCO determined it had no jurisdiction over that wastewater agreement, thereby satisfying the condition imposed by the City of Hollister. Therefore, the wastewater agreement between SCWD and the City of Hollister to provide service to multiple developments, including the proposed project, is now in place and operable.

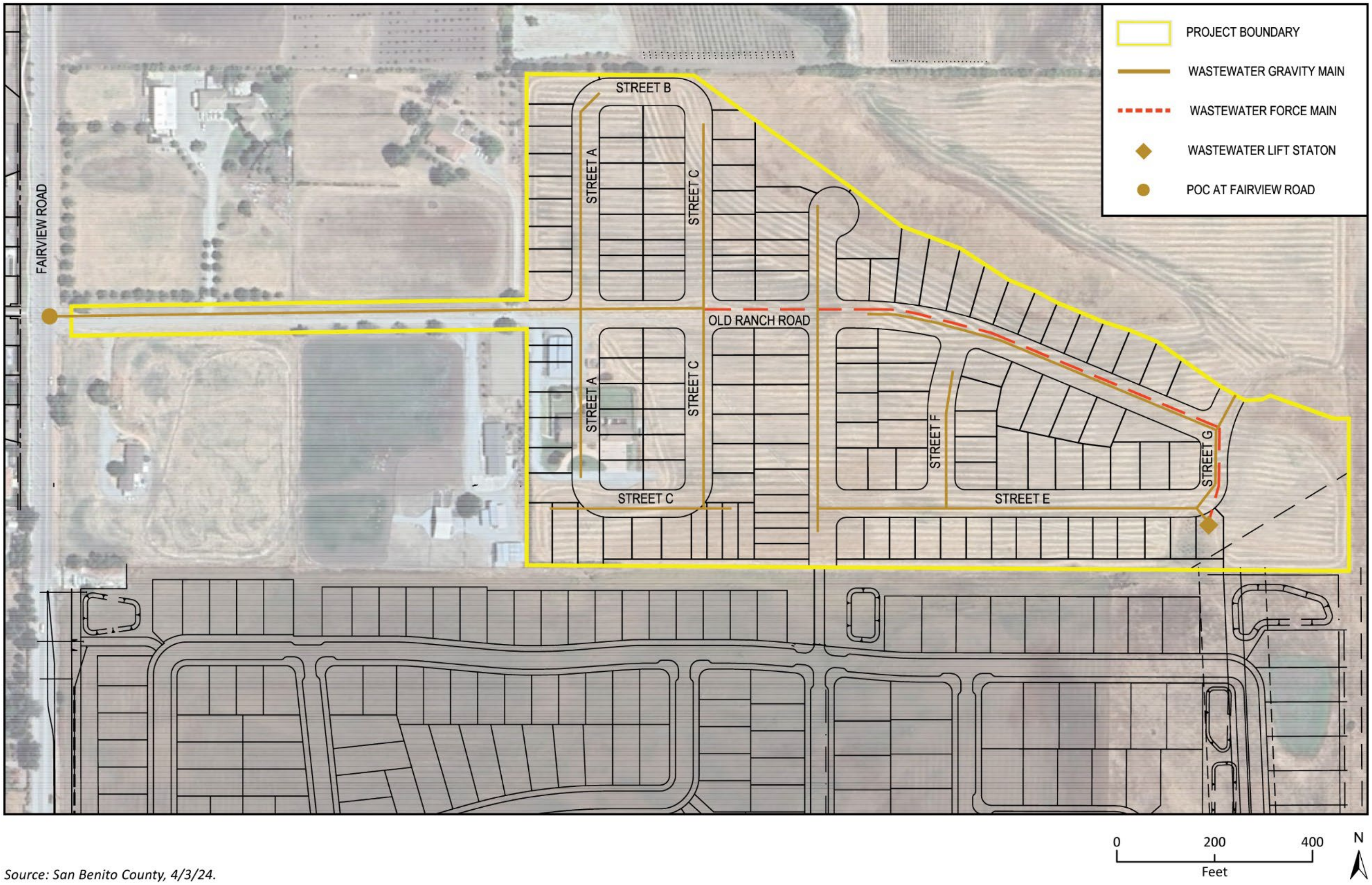
Originally, two options for wastewater treatment were potentially available to serve the proposed project and therefore were discussed and analyzed throughout the previously circulated project Draft EIR (August 26, 2022, SCH Number 2022020429). Based on coordination that has occurred since circulation of the original Draft EIR in August 2022, project-generated wastewater would be treated by the City of Hollister through an agreement with SCWD under which the SCWD would serve as a wastewater collection system operator, with responsibility to maintain and repair sewer lines and facilities located outside the Hollister City limits, and would connect these collection lines to City facilities with ultimate treatment of wastewater in the City's tertiary treatment plant in conformance with the intent of the Memorandum of Understanding. The County and the project applicant indicated a preference for this wastewater treatment option, and this wastewater treatment option was ultimately approved by the City of Hollister and SCWD through contract, which contract was presented to San Benito County LAFCO. LAFCO did not object to such contract.

The project would include the installation of an on-site wastewater collection system that would connect to an off-site main located at the intersection of Fairview Road and Old Ranch Road. The on-site system would include service laterals, manholes, and underground pipes. The on-site system and off-site connections would be sized to serve the proposed project buildout, with no excess capacity available to accommodate new connections from neighboring properties. The eastern portion of the site would drain via gravity to the east, where a lift station would pump the effluent through a force main to a high point at Old Ranch Road and proposed Street C. The exact location, design, and capacity of the lift station is currently unknown, subject to determination by SCWD. This lift station may provide service for only the proposed project, or may provide service for the proposed project in combination with another approved adjacent development. In both cases, the station would be sized to provide adequate capacity for the proposed project only or for the proposed project and adjacent development which has already undergone separate environmental review and approval.

Wastewater would then gravity flow west to the connection at Fairview Road and Old Ranch Road. Figure 2-8 shows the location of proposed wastewater infrastructure on site.

The project applicant would construct the required on-site and off-site facilities. SCWD would maintain the on-site system, including the on-site wastewater lift station, with the maintenance costs financed through the collection of monthly wastewater rates. SCWD would continue to maintain its system south of Old Ranch Road, and the City of Hollister would maintain its collection and treatment systems.

Figure 2-8 Proposed On-Site Wastewater System



Source: San Benito County, 4/3/24.

As stated, this wastewater option was brought to fruition during the pendency of the revised project. Under this wastewater option, SCWD contracted with the City of Hollister for the conveyance and treatment of project-generated wastewater. Again, on August 7, 2023, the City of Hollister City Council voted to have a contract prepared between the City and SCWD to provide sewer service to Gavilan College, this proposed project (Lands of Lee), the Dividend Homes project, and the Cielo Vista sewer plant, which is close to the end of its useful life. The Hollister City Council further directed that the contract(s) be referred to the San Benito County Local Area Formation Commission (LAFCO). On October 17, 2023, SCWD approved a wastewater agreement between SCWD and the City of Hollister, on November 6, 2023, the City of Hollister approved that same agreement, and on December 14, 2023, San Benito County LAFCO determined it had no jurisdiction over that wastewater agreement, thereby satisfying the condition imposed by the City of Hollister. Therefore, the wastewater agreement between SCWD and the City of Hollister to provide service to projects, including the proposed project, is now in place and operable. In addition to the on-site improvements described above, the wastewater main would be extended to a new manhole on the west side of Fairview Road. From this point, project wastewater would flow in the existing City wastewater collection system to the treatment plant for treatment. The proposed extension would be sized to serve proposed project buildout. No off-site improvements beyond this connection would be required.

Stormwater

The project site drains via sheet flow from west to east, with runoff flowing into an off-site drainage located on the northeastern portion of APN 025-320-004 (outside the project boundary). On-site stormwater would be collected and conveyed by an on-site network of catch basins and underground pipes located in the proposed street system. Stormwater would be conveyed eastward to an underground detention facility located below the proposed public park. From this point, stormwater would be discharged into the adjacent drainage channel via a new outfall, with flow rates controlled such that they do not exceed the pre-development peak flow rate. The proposed stormwater retention design would accommodate a 500-year storm. Further, the current design includes volume for the 90th percentile storm, which is greater than the volume for the detention of a 500-year storm. An additional stormwater main would be constructed through the park from the south boundary of the site to the proposed outfall, which would convey a small amount of stormwater from the property south of the project site. San Benito County would be responsible for maintenance of the proposed on-site stormwater system, funded through a CFD. Figure 2-9 shows the location of proposed stormwater infrastructure on site.

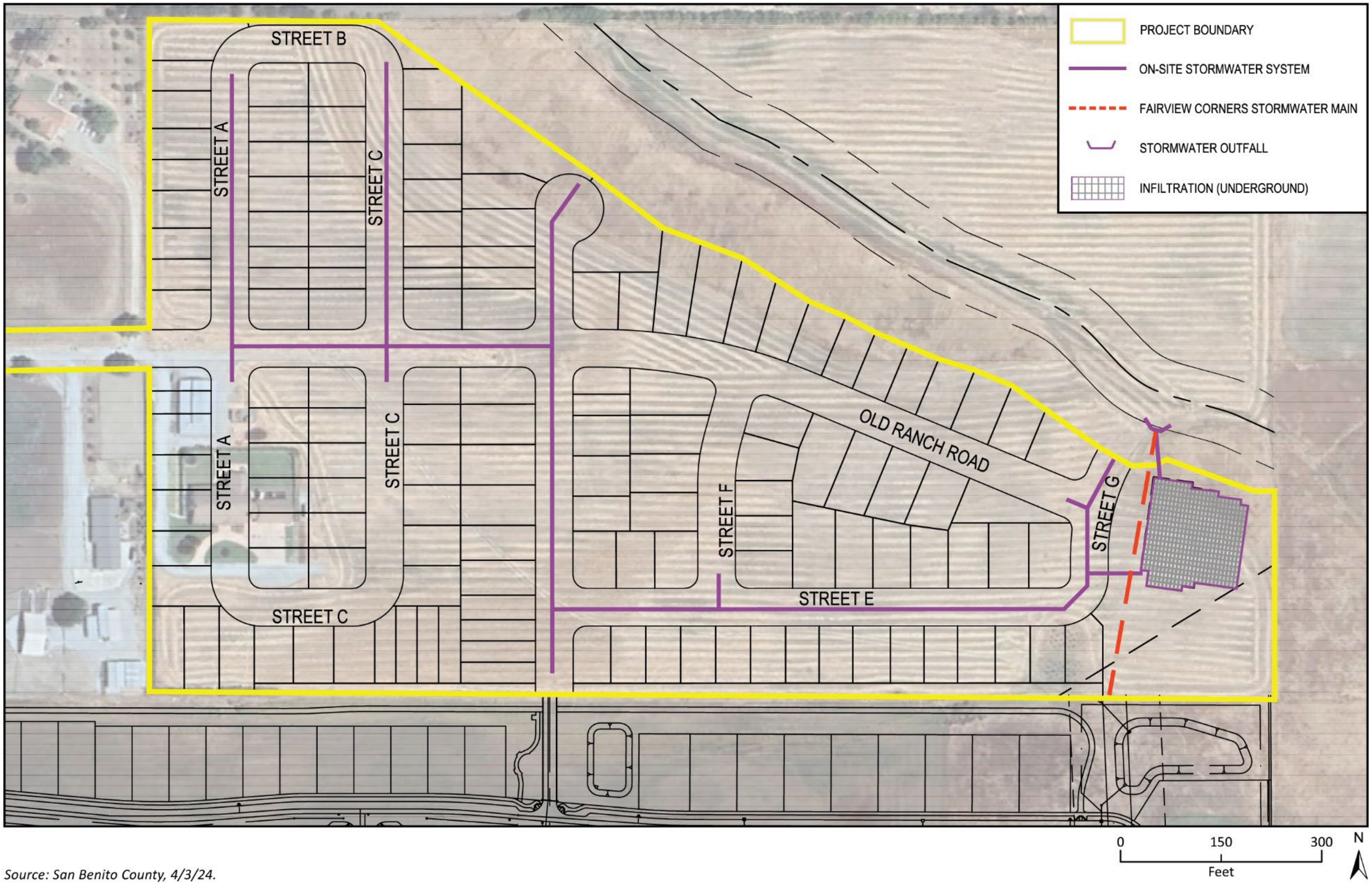
Other Utilities

Local telephone and internet service would be provided by AT&T, cable television by Charter TV, natural gas service by Pacific Gas and Electric Company (PG&E), and electricity by Central Coast Community Energy (3CE) through PG&E transmission lines.

2.5.7 Construction and Grading Schedule

The project would be constructed over three years, with demolition, site preparation, and grading of the entire site occurring first over four months; then utility installation and internal roadway paving over the following six months; site cleanup over the next two months; and residential home buildout over the following two years. Every week, up to two residences would be constructed and sold. Construction is estimated to begin in 2025 or 2026, once a Grading Permit has been acquired.

Figure 2-9 Proposed Stormwater System



Source: San Benito County, 4/3/24.

Excavation depths would be approximately 12 feet at the knoll in the center of the site and approximately 15 feet at the rear of the lots overlooking an existing drainage tributary. Grading would occur immediately southwest of the drainage corridor. Proposed grading would not disturb the existing drainage corridor. In total, approximately 163,400 cubic yards of excavation and approximately 113,700 cubic yards of fill would be required, resulting in export of approximately 49,700 cubic yards from the site.

2.5.8 Sustainability Features

The elongated east/west lot configuration would accommodate daylighting with a north/south exposure for many of the lots, thus promoting energy savings and enhancing lighting. Daylighting places windows, skylights, and other openings such that sunlight can provide internal lighting, reducing the demand for electricity from internal light fixtures during daytime hours. The stormwater design would implement low-impact development techniques. The project would extend a non-potable water main for future irrigation of the park and other open space areas, which would reduce the project's potable water demand. The project would install photovoltaic systems on all proposed residential structures, equal to the expected electricity usage, as is required by Section 150.1(b)14 of the 2022 Building Energy Efficiency Standards for low-rise residential buildings (3 stories or fewer) in accordance with.[2] The project would meet the requirements of the 2022 California Energy Code. All proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems.

2.6 Project Objectives

The primary objectives for the project are as follows:

- Create an environmentally sound community that supports livability and quality of life situated adjacent to existing residences in both the County and City to avoid leap-frogging of vacant parcels not planned for development.
- Reduce the pressure for residential development on prime farmlands and farmlands of statewide importance within San Benito County by developing on agriculturally insignificant lands.
- Provide a balanced approach to land use that accommodates future growth, protects community assets, meets affordability requirements, and protects environmental resources.
- Provide a mix of residential housing types that will meet the needs of, and be affordable to, various household sizes, unit types, and income levels, including the local county workforce such as teachers, emergency workers, nurses, and others.
- Provide at least twenty percent (20%) deed-restricted low income housing through the provision of ADUs, thereby exceeding the County's required levels throughout the project.
- Provide efficient development standards in combination with respecting the environmental hazards on the project site, including seismic zones, slopes, and natural resources that enable efficient lot design to achieve a higher density that is still appropriate for the surrounding area.
- Provide a circulation network that promotes both a safe and quiet neighborhood and enables the County's circulation and emergency services goals in this portion of the county by connecting to the adjacent approved residential street at the project site south boundary.

[2] The 2022 Building Energy Efficiency Standards apply to projects that submitted a permit application after January 1, 2023.

- Provide a second point of access (ingress and egress) for public fire, police, and emergency vehicles, private vehicles, bicyclists, and pedestrians relating to the proposed Gavilan Community College San Benito Campus and Fairview Corners residential development, thus increasing safety to those southerly developments.
- Improve existing Old Ranch Road to County standards and dedicate it to the County.
- Provide convenient on-street pedestrian facilities and shared travel lanes for bicycles to promote outdoor activity, including connection to the Fairview Corners and Gavilan College street, sidewalk, and trail network, thereby providing connectivity for walking and bicycling to the new Gavilan College Hollister campus.
- Provide cohesive and integrated land uses and infrastructure in proximity to existing utilities, infrastructure, and public services adjacent to existing/approved neighborhoods and public spaces.
- Provide for park facilities that are both formal and informal to meet a variety of activities and needs.
- Locate a new public park in an area that is both adjacent to the residences and offers views and a vista point to provide both physical and visual amenities for the residents to enjoy.
- Provide for stormwater infiltration.
- Connect to the Fairview Corners and Gavilan College utilities at the project site southern boundary, thereby providing redundancy in the domestic water system.
- Extend the County's non-potable water main to the remaining undeveloped portion of the project parcel, the Dividend Homes development to the south, the Old Ranch Road/Fairview Road connection to the west, and the on-site park to provide sustainable irrigation from a connection point at the project site southern boundary.
- Provide for emergency overland stormwater release from the northeast portion of the Fairview Corners project across the easterly side of the project site.

2.7 Project Permits and Approvals

The proposed project would involve the following permits and approvals:

- **San Benito County (Lead Agency)**
  - Zoning Code Amendment to Residential Multiple (RM) with a Planned Unit Development (PUD) Combining District, including changes to text, if required
  - Zone Map Change to Residential Multiple (RM) with a PUD Combining District
  - Vesting Tentative Map to subdivide the project site into single-family residential lots, and to dedicate public streets, park, and open space
  - Final subdivision map(s)
  - Grading and improvement plan
  - Grading Permit
  - Encroachment Permit
  - Building Permits
  - Affordable Housing Agreement
  - Annexation to the County’s CFD
  - Development Agreement

  - Other County permits and approvals necessary or desirous to the development of the project

- **US Army Corps of Engineers**
  - Clean Water Act permits associated with the proposed outfall
- **California Department of Fish and Wildlife**
  - Lake and Streambed Alteration Agreement associated with the proposed outfall
  - Incidental Take Permit for California Tiger Salamander
- **Central Coast Regional Water Quality Control Board**
  - National Pollutant Discharge Elimination System Construction General Permit
- **Monterey Bay Air Resources District**
  - Authority to Construct Permit
- **San Benito County Water District**
  - Stormwater outfall
- **San Benito County Department of Environmental Health**
  - Removal of on-site septic system
- **Sunnyslope County Water District (SCWD)**
  - Implementation of contract with City of Hollister for wastewater service
- **City of Hollister**
  - Implementation of a contract between City and SCWD to provide wastewater collection and treatment services and facilities to the proposed project

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed project. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The project site is located in unincorporated San Benito County, southeast of the City of Hollister and east of Fairview Road. San Benito County is located in the Diablo Range Mountains, south of San Jose and west of the Central Valley. The county is surrounded by the counties of Santa Cruz and Monterey to the west, Santa Clara County to the north, and the counties of Merced and Fresno to the east and south. The county is served by State Route (SR) 25, which runs north/south through the middle of the county; SR 152 and SR 156, which run east-west through the northern portion of the county; and U.S. Highway 101, which runs north-south through the northwest corner of the county. U.S. Highway 101 provides a major connection between the San Francisco Bay Area and the coastal communities within the Monterey Peninsula. San Benito County occupies over 890,000 acres or approximately 1,391 square miles.

Agricultural activities are prevalent in the County, including row crops, orchards, vineyards, farms, and ranch grasslands. Urban development is focused in the cities of Hollister and San Juan Bautista.

The climate of the region and coastal influence produce moderate temperatures year-round. August is on average the warmest month of the year, and December is on average the coolest month of the year. Based on a weather station in Hollister, most rainfall in the County occurs between November and April, with an average annual rainfall of approximately 14 inches (Western Regional Climate Center 2016). Recent drought conditions have resulted in significantly reduced rainfall.

3.2 Project Site Setting

The project site encompasses most of Assessor's Parcel Number (APN) 025-320-004, excluding the northeastern corner of the parcel. The site is approximately 27.45 acres in size and is surrounded by residences, vineyards, and agricultural parcels planned for residential development. The site is developed with a one-story residence and barn on the southwest portion of the site. These buildings cover an area of approximately 9,950 square feet. Figure 2-1 in Section 2, *Project Description*, shows the regional location of the project site. The remainder of the site is farmed with oat hay.

As shown in Figure 2-2 in Section 2, *Project Description,* the project site is immediately bordered by rural residential development to the west, and rural residences with vineyards and an associated winery to the north. Vacant land to the south is planned to be developed for the Fairview Corners residential development, with 5,000-square foot minimum lot sizes. Similarly, vacant land west of Fairview Road is planned for the Roberts Ranch Subdivision and West of Fairview residential developments, with 6,000-square foot minimum lot sizes. Additionally, between Fairview Corners and Highway 25, Gavilan Community College's San Benito Campus is planned.

The project site has a 2035 General Plan land use designation of Residential Mixed (RM) and is zoned Rural (R), as defined by the County's Zoning Ordinance.

3.3 Cumulative Development

This section discusses the cumulative development setting. *CEQA Guidelines* Section 15355 defines a cumulative impact as one in which 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 several 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.

CEQA Guidelines Section 15130 describes the requirements for the discussion of cumulative impacts in an EIR. It states that an EIR will discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. The discussion will reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the impacts attributable to the project alone. In addition, the *CEQA Guidelines* allow for a project's contribution to be rendered less than cumulatively considerable with implementation of appropriate mitigation.

The geographic scope of the cumulative impact analysis defines the geographic area within which a proposed project and related projects may contribute to a specific cumulative impact. The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue being analyzed.

CEQA Guidelines Section 15130(b) presents two possible approaches for analyzing cumulative impacts:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or
- 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. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

The cumulative analysis presented within this EIR uses a project list approach and identifies how impacts of the proposed project could add to impacts of currently approved or pending projects within San Benito County. Currently planned and pending projects in the City of Hollister and surrounding areas, including rural San Benito County, are listed in Table 3-1. In particular, the Fairview Corners, Roberts Ranch Subdivision, West of Fairview, and Santana Ranch residential developments; and Gavilan Community College's San Benito Campus are located in close proximity or along the same major arterial as the project site and construction schedules may overlap. These projects are considered in the cumulative analyses in Section 4, *Environmental Impact Analysis*.

Table 3-1 Cumulative Projects List

Applicant/Owner/ Project Name	Address/Location	Project Description	Project Status
Award Homes	West of Fairview Road, south of St. Benedict's Church	507 single-family dwelling units (dwelling unit), 60 duet dwelling units, and 100 multi-family dwelling units	Approved
Silver Oaks	West of Valley View Road, south of Hazel Hawkins Hospital, east of Airline Highway	170 senior detached dwelling units	Approved
Bella Sera	West of Ladd Lane, across from Hillock Drive	63 multi-family dwelling units	Approved
Cerrato	Between Meridian Street and Hillcrest Road, west of Memorial Drive	241 single-family dwelling units	Approved
Farmstead	South Street and Westside Boulevard	13 single-family dwelling units	Approved
Allendale	North Street and Buena Vista Road	60 multi-family dwelling units and 279 single-family dwelling units	Approved
Los Pinars	East of Cushman Street, south of Nash Road	44 multi-family dwelling units, 15 attached and 26 detached single-family dwelling units	Approved
Robert’s Ranch	Fairview Road and Mimosa Road	192 single-family dwelling units and 49 multi-family dwelling units	Approved
Solorio Park II	1040 South Street	25 single-family dwelling units	Approved
Mirabella II	North of Buena Vista Road, west of Miller Road	157 single-family dwelling units and 26 multi-family dwelling units	Approved
400 Block	365 4th Street; 430, 434, and 438 San Benito Street	22 multi-family dwelling units	Approved
Rong Chang USA/John Wynn	Northeast of Hollister Municipal Airport, west of San Felipe Road	151,200-square foot shell building	Approved
Hawkins Companies/Christian Samples, AICP	West of SR 25, south of Park Street	165,533-square foot shopping center	Approved
Gleanomic, LLC	1802 Shelton Drive	Subdivision an approximately 79,400 square foot building into three separate commercial/industrial condominiums	Approved
American Casting	71 Fallon Road	Construction of new 21,200-square foot two-story industrial building to replace existing 2,160-square foot manufactured building	Approved
DelCurto Brothers Construction	365 Fourth Street	30,738-square foot commercial mixed-use building	Approved
Community Foundation	460, 434, 438 San Benito Street	10,858-square foot community building	Approved
Geary Coats	773 San Felipe Road	2,400-square foot cannabis dispensary	Approved
Scenic Southside	Southside Road	184 single-family dwelling units	Approved
Faye Hollister Lane	3061 Southside Road	84 single-family dwelling units	Approved

Applicant/Owner/ Project Name	Address/Location	Project Description	Project Status
Santana Ranch	East of Fairview Road from Hillcrest to Sunnyslope	1,092 single-family dwelling units, 800-student elementary school, and 65,000-square foot of commercial space	Under construction
Fairview Corners Residential	Northeast Corner of Fairview Road and Airline Hwy	220 single-family dwelling units	Approved
River View Estates III		24 100% affordable single-family dwelling units	Approved
San Juan Oaks	Southwest corner of Union Street and San Juan Oaks Drive	1,100 residential dwelling units, 200-room hotel, 65,000-square foot commercial space, assisted living/skilled nursing center	Approved
Solorio Park I	1001 4th Street	76 single-family dwelling units	Approved
Roth Family Living Trust	2400 Cole Road	6 single-family dwelling units	Approved
Brigantino [Sunnyside Estates]	Southside Road, South of Union Road	200 single-family dwelling units	Approved
Gonzalez north of Buena Vista	North of Buena Vista Road, east of Carmoble Drive	Pre-zone 11.11 acres medium density (133 maximum dwelling units)	Pending
Rosati	South of Santa Ana Road, north of Meridian St, west of El Toro Drive	Pre-zone 23.45 acres medium density (192 single-family dwelling units and 48 multi-family dwelling units)	Pending
Sywak/Powell St	Powell Street and A Street	64 multi-family dwelling units	Pending
Kutz south of Hillcrest	Hillcrest Road and El Cerro Drive	90 single-family dwelling units	Pending
Pacific West Communities	Northeast corner of Miller Road and San Juan Road	57 multi-family dwelling units	Pending
Pivetti	Valley View Road between Sunnyslope Road and Sunset Drive	24 single-family dwelling units	Pending
Campisi, Elizabeth	Northwest Corner of Southside and Enterprise	23 single-family dwelling units	Pending
Javid Asst. Living	3586 Airline Highway	180-room assisted care facility	Pending
Clearist Park	San Felipe Road	Subdivision of three parcels consisting of 207 total acres into 60 lots ranging in size from 1.68 to 11.30 acres for future industrial use	Pending
Williams – Spring Meadows Est	1735 Santa Ana Road	20 single-family dwelling units	Pending
Lima Property Specific Plan	Airline Highway, south of Fairview Road	1,185 residential dwelling units, 42,000-square foot commercial/ retail space and up to 95 residential dwelling units in the mixed-use village commercial parcel, and a 928-student middle school	Pending
Woodle	North of Buena Vista Road, west of Miller Road	Pre-zone 9.09 acres medium density (109 maximum residential dwelling units)	Pending

Applicant/Owner/ Project Name	Address/Location	Project Description	Project Status
Chappell Road	South of and east of North Chappell Road, west of SR 25, north of Santa Ana Road	Pre-zone 118 acres low density (926 residential dwelling unit and 303,700-square foot commercial space)	Pending
San Benito County Behavioral Health Center	San Felipe Road, north of Wright Road	17,212-square foot clinic	Pending
The Bluffs at Ridgemark	Southwest corner of Ridgemark Drive and Lanini Drive	93 single-family dwelling units	Pending
Vista del Calabria	213 Enterprise Road	149 single-family dwelling units	Approved
Ridgemark Subdivision Project	Ridgemark Golf Course and Country Club (253 acres of the 618-acre area)	190 residential lots, 5 commercial/nonresidential lots, 5 golf course lots, one park	Pending

Source: County of San Benito 2022; Hexagon Transportation Consultants, Inc. 2022, Megaña 2020

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4 Environmental Impact Analysis

This section discusses the possible environmental effects of the project for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. A "significant effect" as defined by the *CEQA Guidelines* Section 15382:

> means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria adopted by the County and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the *CEQA Guidelines*.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the *CEQA Guidelines*.
- **Less than Significant.** An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3, *Environmental Setting*.

The Executive Summary of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

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4.1 Air Quality

The section analyzes the potential air quality impacts of project construction and operation, including impacts to nearby sensitive receptors. Construction and operational emissions associated with project buildout were calculated using the California Emissions Estimator Model (CalEEMod). Results were compared to Monterey Bay Air Resources District (MBARD) thresholds and County standards.

4.1.1 Background and Existing Conditions

a. Climate and Topography

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, influence the relationship between air pollutant emissions and air quality.

The project site is in the North Central Coast Air Basin (NCCAB) which is the geographic scope for this analysis, which is comprised of Monterey, Santa Cruz, and San Benito counties. The climate is dominated by a semi-permanent high-pressure cell over the Pacific Ocean. In the summer, the dominant high-pressure cell results in persistent west and northwest winds across the majority of coastal California. As air descends in the Pacific high-pressure cell, a stable temperature inversion is formed. As temperatures increase, the warmer air aloft expands, forcing the coastal layer of air to move onshore and producing a moderate sea breeze over the coastal plains and valleys. Temperature inversions inhibit vertical air movement and often result in increased transport of air pollutants to inland receptor areas.

In the winter, when the high-pressure cell is weakest and farthest south, the inversion associated with the Pacific high-pressure cell is typically absent in the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito valleys. The predominant offshore flow during this time of year tends to aid in pollutant dispersal, producing relatively healthful to moderate air quality throughout most of the region. Conditions during this time are often characterized by afternoon and evening land breezes and occasional rainstorms. However, local inversions caused by the cooling of air close to the ground can form in some areas during the evening and early morning hours.

Winter daytime temperatures in the NCCAB typically average in the mid-50s during the day, with nighttime temperatures averaging in the low 40s. Summer daytime temperatures typically average in the 60s during the day, with nighttime temperatures averaging in the 50s. Precipitation varies in the region, but in general, annual rainfall is lowest in the coastal plain and inland valley, higher in the foothills, and highest in the mountains.

b. Air Pollutants of Primary Concern

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3) is generally considered to be a regional pollutant because its precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered local pollutants because they tend to accumulate in the air locally. Course particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) are considered to be both regional and local pollutants.

Ozone

O_3 is a highly oxidative unstable gas, produced by a photochemical reaction (triggered by sunlight) between NO_X and reactive organic gas (ROG)/volatile organic compounds (VOC).[1] ROG are composed of non-methane hydrocarbons (with some specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and NO_2. NO_X is formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. As a highly reactive molecule, O_3 readily combines with many different components of the atmosphere. Consequently, high levels of O_3 tend to exist only while high ROG and NO_X levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors (United States Environmental Protection Agency [USEPA] 2021a). Depending on the level of exposure, O_3 can

- cause coughing and sore or scratchy throat;
- make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath;
- inflame and damage the airways;
- make the lungs more susceptible to infection;
- aggravate lung diseases such as asthma, emphysema, and chronic bronchitis; and/or
- increase the frequency of asthma attacks.

Carbon Monoxide

CO is a localized pollutant that is found in high concentrations only near its source. The major source of CO, a colorless, odorless, poisonous gas, is the incomplete combustion of petroleum fuels by automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. People with heart disease have restricted blood flow which results in a lack of oxygen to the heart muscle. These people are especially vulnerable to the effects of CO when exercising or under increased stress when the heart needs more oxygen than usual. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (USEPA 2021b).

Nitrogen Dioxide

NO_2 is a by-product of fuel combustion; the primary sources are motor vehicles and industrial boilers and furnaces. The principal form of NO_x produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form NO_2, creating the mixture of nitric oxide and NO_2 commonly called NO_x.

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this EIR.

NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), and increase hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2021c). NO_2 absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of O_3/smog and acid rain.

Sulfur Dioxide

SO_2 is included in a group of highly reactive gases known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (USEPA 2021d).

Particulate Matter

Suspended atmospheric PM_{10} and $PM_{2.5}$ is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are directly emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. Particulate matter is also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles while $PM_{2.5}$ is generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{10} can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling. For $PM_{2.5}$, short-term exposures (up to 24-hours duration) have been associated with respiratory issues such as acute bronchitis and asthma attacks. In addition, $PM_{2.5}$ can cause premature mortality, increased hospital admissions for heart or lung issues, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (California Air Resources Board [CARB] 2022a).

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2022b).

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

TACs include both organic and inorganic chemical substances. While DPM is a main source, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of developing cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2020).

c. Air Quality Standards and Attainment

The federal and state governments have authority under the federal and state Clean Air Acts (CAA) to regulate emissions of airborne pollutants and have established ambient air quality standards (AAQS) for the protection of public health. An air quality standard is defined as “the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health” (CARB 2019a). The USEPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent in California. Federal and state AAQS have been established for six criteria pollutants: O_3, CO, NO_2, SO_2, $PM_{10,}$ $PM_{2.5}$, and lead. AAQS are designed to protect those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases (USEPA 2016). In addition to the federal criteria pollutants, the California Ambient Air Quality Standards (CAAQS) also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride (CARB 2019b). USEPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the AAQS are classified as nonattainment areas. The NAAQS (other than O3, PM10, PM2.5, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O3, PM10, and PM2.5 are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period. The attainment status for San Benito County is included in Table 4.1-2.

Pursuant to the CAA, USEPA designates areas as attainment, nonattainment, or maintenance for each criteria pollutant based on whether the NAAQS have been achieved. Whether an area meets the state and federal standards is based on air quality monitoring data. Areas that are unclassified have insufficient monitoring data for a specific pollutant to determine attainment or nonattainment status, although unclassified areas are typically treated as attainment for a specific pollutant. Since attainment and nonattainment designations are pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the state standards PM10 and unclassified for the federal standards PM10 (CARB 2020).

Table 4.1-1 lists the current National Ambient Air Quality Standards (NAAQS) as well as the CAAQS for regulated pollutants.

USEPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the AAQS are classified as nonattainment areas. The NAAQS (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period. The attainment status for San Benito County is included in Table 4.1-2.

Pursuant to the CAA, USEPA designates areas as attainment, nonattainment, or maintenance for each criteria pollutant based on whether the NAAQS have been achieved. Whether an area meets the state and federal standards is based on air quality monitoring data. Areas that are unclassified have insufficient monitoring data for a specific pollutant to determine attainment or nonattainment status, although unclassified areas are typically treated as attainment for a specific pollutant. Since attainment and nonattainment designations are pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the state standards PM_{10} and unclassified for the federal standards PM_{10} (CARB 2020).

Table 4.1-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	CAAQS
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	–	–
	24-Hour	–	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM_{10}	Annual	–	20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
PM_{25}	Annual	12 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	–
Lead	30-Day Average	–	1.5 µg/m^3
	3-Month Average	0.15 µg/m^3	–

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

Source: CARB 2016; USEPA 2016

Table 4.1-2 Attainment Status of Criteria Pollutants in San Benito County

Pollutant	State Designation	Federal Designation
O_3	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sources: CARB 2020		

d. Current Ambient Air Quality

The project is located in San Benito County which is under the jurisdiction of MBARD. MBARD is responsible for achieving and maintaining the State and Federal AAQS within its jurisdiction. MBARD operates a network of air quality monitoring stations throughout the NCCAB. The monitoring stations aim to measure ambient concentrations of pollutants and determine whether ambient air quality meets the state and federal standards. The monitoring station closest to the project site is the Hollister-Fairview Road (located at 1979 Fairview Road in Hollister), approximately 1.5 miles north of the project site. This station measures 8-hour O_3, hourly O_3, $PM_{2.5}$, and PM_{10}. The air monitoring station Salinas #3 (located at 867 East Laurel Drive in Salinas) is the closest air monitoring station to the project site that measures NO_2 and CO. This station is approximately 17 miles southwest of the project site. Table-4.1-3 indicates the number of days each federal and state standard exceeded at Hollister-Fairview Road and Salinas #3 air monitoring station. As shown therein, in 2020, O_3 measurements exceeded the federal and state 8-hour O_3 standards. In addition, PM_{10} measurements exceeded the federal PM_{10} standard in 2020, but insufficient measurement data in 2018, 2019, and 2020 to determine state PM_{10} standard exceedances. $PM_{2.5}$ measurements exceeded federal $PM_{2.5}$ standards in 2018 and 2020. No other state or federal standards were exceeded at these air monitoring stations. SO_2 is not monitored within the NCCAB; therefore, it is not reported in the analysis.

Table-4.1-3 Ambient Air Quality Data

Pollutant	2018	2019	2020
8 Hour Ozone (ppm), 8-Hour Average[1]	0.063	0.067	0.074
Number of Days of state exceedances (>0.070 ppm)	0	0	2
Number of days of federal exceedances (>0.070 ppm)	0	0	2
Ozone (ppm), Worst Hour[1]	0.077	0.079	0.090
Number of days of state exceedances (>0.09 ppm)	0	0	0
Carbon Monoxide (ppm), Worst-Hour[2]	3.5	35	1.6
Number of days of state exceedances (>20.0 ppm)	0	1	0
Nitrogen Dioxide (ppm) - Worst Hour[2]	0.047	0.030	0.032
Number of days of state exceedances (>0.18 ppm)	0	0	0
Number of days of federal exceedances (>0.10 ppm)	0	0	0

Pollutant	2018	2019	2020
Particulate Matter 10 microns, μg/m³, Worst 24 Hours[1]	95.9	130.7	159.0
Number of days of state exceedances (>50 μg/m³)	*	*	*
Number of days above federal standard (>150 μg/m³)	0	0	1
Particulate Matter <2.5 microns, μg/m³, Worst 24 Hours[1]	52.7	19.2	89.0
Number of days above federal standard (>35 μg/m³)	10	0	14

[1] Measurements were taken from the Hollister-Fairview Road Station
[2] Measurements taken from the Salinas #3 Station.
*Insufficient data available to determine the value.
Source: CARB 2021

e. Sensitive Receptors

Sensitive receptors are facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. According to MBARD, all residences, education centers, daycare facilities, and health care facilities are considered sensitive receptors (MBARD 2008). The nearest sensitive receptors to the project site consist of single-family residents directly adjacent to the north and west. In addition, the future residents at Fairview Corners planned residential development site, immediately south of the site, would be sensitive receptors if planned residential units are occupied during project construction.

4.1.2 Regulatory Setting

a. Federal

The Federal CAA governs air quality in the United States. In addition to being subject to Federal requirements, air quality in California is also governed by more stringent regulations under the California CAA. At the federal level, the USEPA administers the CAA. The CAA is administered by CARB at the State level and by the Air Quality Management Districts at the regional and local levels. MBARD regulates air quality at the regional level in San Benito County.

The CAA of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that CO_2 is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

The USEPA is responsible for enforcing the federal CAA. The USEPA is also responsible for establishing NAAQS. NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB.

b. State

California Clean Air Act

The California Clean Air Act allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California’s State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts

California State Implementation Plan

The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The MBARD 2012 – 2015 Air Quality Management Plan (AQMP) is the SIP for the NCCAB. The AQMP accommodate growth by projecting the growth in emissions based on different indicators. For example, population forecasts adopted by the Association of Monterey Bay Area Governments (AMBAG) are used to forecast population-related emissions. Through the planning process, emissions growth is offset by basin-wide controls on stationary, area, and transportation sources of air pollution.

c. Local

Monterey Bay Air Resources District

MBARD is the agency primarily responsible for ensuring that federal and CAAQS are not exceeded and that air quality conditions are maintained in the NCCAB, within which the proposed project is located. MBARD responsibilities include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal CAA and the California Clean Air Act. The most recent AQMP for the Monterey Bay Region was adopted in March 2017. To achieve NAAQS and CAAQS and maintain air quality, MBARD has most recently completed the AQMP for achieving the state O_3 standards and maintaining federal O_3 standards.

To achieve and maintain ambient air quality standards, MBARD has adopted various rules and regulations for the control of airborne pollutants. MBARD rules and regulations that are applicable to the proposed project include, but are not limited to, the following:

- **Rule 402 (Nuisances).** The purpose of this rule is to prohibit emissions that may create a public nuisance. It applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 426 (Architectural Coatings).** The purpose of this rule is to limit emissions of volatile organic compounds from architectural coatings.
- **Rule 425 (Use of Cutback Asphalt).** This rule limits emissions of vapors of organic compounds from the use of cutback and emulsified asphalt. It applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- **Rule 439 (Building Removals).** This rule limits particulate emissions associated with the removal and demolition of buildings.
- **Rule 1000 (Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants).** The purpose of this rule is to prevent the emission of TACs into the atmosphere within MBARD, which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health

Monterey Bay Air Resource District Air Quality Management Plan

The Air Quality Management Plan (AQMP) was adopted initially in 1991 and updated in 1994, 1997, 2000, 2004, 2008, 2012 and most recently in March 2017 as the 2012-2015 AQMP (MBARD 2017). Each iteration of the AQMP is an update of the previous AQMP and has a 20-year horizon. The pollutants addressed in the AQMP are volatile organic compounds (VOCs) and NO_X, precursors to the photochemical formation of O_3 (the primary component of smog). The AQMP identifies feasible emission control measures to provide progress in Monterey, Santa Cruz, and San Benito counties toward attaining the state O_3 standard. The AQMP discusses MBARD's efforts for achieving the state 8-hour O_3 requirement as the region has already attained the 1-hour standard. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. The NAAQS and CAAQS are not CEQA thresholds, but MBARD's threshold of significance consider the emission levels for which a project's individual emissions would be cumulatively considerable. The AQMP includes an updated air quality trends analysis, which reflects the 8-hour standard, as well as an updated emission inventory, which includes the latest information on stationary, area, and mobile emission sources.

San Benito County 2035 General Plan

The 2035 General Plan Health and Safety Element provide the following goals, policies, and objectives pertaining to air quality that are relevant to this analysis:

Health and Safety Element

Goal HS-5 To improve local and regional air quality to protect residents from the adverse effects of poor air quality

HS-5.1 **New Development.** The County shall use the California Environmental Quality Act (CEQA) process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions and consult with the MBARD early in the development review process.

HS-5.2 **Sensitive Land Use Locations.** The County shall ensure adequate distances between sensitive land uses and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors.

HS-5.4 **PM_{10} Emissions from Construction.** The County shall require developers to reduce particulate matter emissions from construction (e.g., grading, excavation, and demolition) consistent with standards established by the MBARD.

HS-5.6 **New Construction Mitigation.** The County shall work in coordination with the MBARD to minimize air emissions from construction activities associated with proposed development.

HS-5.10 **Vehicle Emissions Reductions.** The County shall study alternatives for improving circulation (e.g., roundabouts, one ways, etc.), when feasible, to reduce idling motor vehicle emissions.

HS-5.13 **Reduce Air Pollution from Wood Burning.** No permanently installed wood-burning devices shall be allowed in any new development, except when necessary for food preparation in a restaurant or other commercial establishment serving food.

4.1.3 Impact Analysis

a. Significance Thresholds

The analysis of the project's air quality impacts follows the guidance and methodologies recommended in the MBARD *CEQA Air Quality Guidelines* (2008) as well as Appendix G of the *CEQA Guidelines*.

According to Appendix G of the *CEQA Guidelines*, impacts related to air quality from the proposed project would be significant if the project would:

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 non-attainment under an applicable federal or State ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The *CEQA Guidelines* further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the determinations above.

MBARD Thresholds of Significance

The significance criteria established by the applicable air quality management or air pollution control district (MBARD) is used to determine significance since they have jurisdiction over the air quality regulations. According to MBARD, an air quality impact is considered significant if the proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. MBARD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 4.1-4.

Table 4.1-4 Air Quality Thresholds of Significance (pounds per day)

Air Pollutant	Construction Activities	Operations
ROG	–	137
CO	–	550
NO_X	–	137
SO_x as SO_2	–	150
PM_{10}	82	82
$PM_{2.5}$	–	–

ROG = reactive organic gases, CO = carbon monoxide, NO_X = nitrogen oxides, SO_X = sulfur oxides, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

Source: MBARD 2008; MBARD does not provide construction thresholds for pollutants other than PM_{10}.

By its very nature, air pollution is largely a cumulative impact. 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. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Air Quality Management Plan Consistency

MBARD relies on information from CARB and AMBAG, including mobile and area source emissions; it also collects information regarding projected growth in the region to project future emissions and then determine the strategies necessary for the reduction of emissions through regulatory controls. Consistency determinations with the AQMP are used by MBARD to address a project's cumulative impact on regional air quality (i.e., ozone levels). These AQMPs accommodate growth by projecting growth in emissions based on different indicators. CARB mobile source emission projections and AMBAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the counties as part of the development of the individual general plans. As such, according to the MBARD 2008 *Guidelines for Implementing CEQA*, projects that propose development consistent with the growth anticipated by the general plans would be consistent with the regional air quality standards. A project where proposed development is less dense than that anticipated in a general plan would also be consistent with the regional air quality standards. If a project proposes more dense or intense development than that anticipated in a general plan and AMBAG's growth projections, it could conflict with the regional air quality standards and could have a potentially significant impact on air quality.

Toxic Air Contaminants

Construction

Equipment or processes that emit non-carcinogenic TACs could result in significant impacts if emissions would exceed the threshold that is based on the best available data [i.e., acute (1-hour) reference exposure level (REL), chronic (annual) REL]. In addition, temporary emissions of a carcinogenic TAC that can result in a cancer risk greater than one incident per 100,000 population are considered significant (MBARD 2008).

Operations

Operational equipment or processes would not result in significant air quality impacts if they would comply with MBARD Rule 1000. Equipment or processes not subject to MBARD Rule 1000 that emit noncarcinogenic TACs could result in significant impacts if emissions would exceed the threshold that is based on the best available data [i.e., acute (1-hour) REL, chronic (annual) REL, permissible exposures limit /420]. In addition, emissions of a carcinogenic TAC that can result in a cancer risk greater than one incident per 100,000 population are considered significant. Likewise, a project which would be located adjacent to a source of TACs unregulated by MBARD Rule 1000 may also result in significant impacts to air quality and human health and require modeling. Common sources of TACs include diesel fueled internal combustion engines, parking areas for diesel fueled heavy duty trucks and buses, gasoline stations and dry cleaners (MBARD 2008).

b. Methodology

The project's air quality impacts were assessed per methodologies recommended by CARB and MBARD. Criteria pollutants for project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.22. CalEEMod is a statewide land use emissions model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with construction and operations from various land use projects. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions as well as accommodates user-defined inputs. The model calculates criteria pollutant emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, the O_3 precursors, ROG, and NO_X.

Construction

Project construction would primarily generate temporary criteria pollutants from construction equipment operation on-site and construction worker vehicle trips to and from the site. The analysis assessed maximum daily emissions from individual construction activities, including demolition, site preparation, grading, building construction, paving, and architectural coating. The applicant anticipates full project buildout to be completed in three years and provided construction activity length for each construction phase. Project construction activity is assumed to begin in June 2025 and finish in January 2028. Construction would require heavy equipment during demolition, site preparation, grading, building construction, and paving. Default CalEEMod construction equipment was used for the analysis. The project would demolish the existing residence and barn (approximately 9,950 square feet). Approximately 163,400 cubic yards of excavation and approximately 113,700 cubic yards of fill would be required, resulting in the export of approximately 49,700 cubic yards. The project would comply with MBARD Rule 426 Architectural Coating. This rule, which limits volatile organic content to 50 grams per liter for flat coatings and 100 grams per liter for traffic coating, was included in CalEEMod. The flat coating is applied on the residential buildings, and the traffic coating are applied for public streets and driveways.

Operation

During operations, the proposed uses would result in emissions of criteria pollutants from area sources (i.e., consumer products, architectural coatings, and landscaping equipment), energy sources (natural gas usage), and mobile sources (vehicle use), which were also calculated using CalEEMod. The operational mobile emissions were based on estimated traffic trip generation rates using the Additional VMT Analysis and Mitigation Memorandum prepared for the proposed project by Kimley-Horn in April 2024 (Appendix I). Emissions associated with area sources, including landscape maintenance and architectural coating, were calculated in CalEEMod and utilized standard emission rates embedded in the model from CARB, USEPA, and emission factor values (embedded in the model) provided by the local air district (California Air Pollution Control Officers Association 2021). The analysis assumes the project would exclude fireplaces and would not include woodstoves based on San Benito County's Health and Safety Element, Policy HS-5.13, which states "No permanently installed wood-burning devices shall be allowed in any new development, except when necessary for food preparation in a restaurant or other commercial establishment serving food."

Operational energy emissions were calculated based on CalEEMod default assumptions. According to Section 150.1(b)14 of the 2019 Building Energy Efficiency Standards, all new residential uses under three stories must install photovoltaic solar panels that generate an amount of electricity equal to expected electricity usage. Therefore, photovoltaic solar panels would supply 100 percent of electricity usage for the proposed low-rise residential uses.

CO Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. The entire Basin is in conformance with state and federal CO standards, and most air quality monitoring stations no longer report CO levels. One station within the NCCAB reports CO emissions data, and only reports maximum 1-hour and average daily concentrations of CO. For 2020 the Salinas-High School monitoring station in Monterey County reported maximum 1-hour and average daily concentrations of 1.6 ppm and 1.1 ppm, respectively (CARB 2022c).[2] These are well below the respective 1-hour and 8-hour standards of 20 ppm and 9 ppm. Given the ambient concentrations, which include mobile as well as stationary sources, a project in the NCCAB would need to emit concentrations 12 times the hourly maximum ambient emissions for all sources near the Salinas-High School station before project emissions would exceed the 1-hour standard. Additionally, the project would need to emit eight times the daily average for ambient concentrations near the monitoring station within eight hours to exceed the 8-hour standard. Typical development projects would not emit the levels of CO necessary to result in a localized hot spot. Therefore, CO hotspots are not discussed further in this document.

c. Project Impacts and Mitigation Measures

Threshold 1:	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE MBARD 2012-2015 AIR QUALITY MANAGEMENT PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed above under Section 4.1.3(a), *Significance Thresholds*, a project would conflict with or obstruct implementation of the AQMP for the Monterey Bay Region if it is inconsistent with the growth assumptions included in the 2012-2015 AQMP (MBARD 2017).

[2] Data for 2020 was used as the data for 2021 has not been fully verified for all sites.

The project involves the construction of 171 residential units (including single-family units and accessory dwelling units), which would result in an increase in the County's population. Based on an average household size of 3.18 persons per dwelling unit, derived from Department of Finance estimates, the project would house approximately 544 residents (California Department of Finance 2022).

The population growth projections used in the 2012-2015 AQMP forecast show that the population of San Benito County will reach 78,418 residents by 2030, an increase of 5,315 from 2020 projections (MBARD 2017). Overall, the population of the AMBAG region is expected to reach 856,000 by 2030, an increase of 56,000 from 2020 projections. The project's buildout would not exceed the AQMP population growth forecast for San Benito County. The project's population growth represents approximately 10 percent of the total population growth expected in San Benito County between 2020 and 2030. On a regional scale, the project represents approximately 1.0 percent of the growth expected to occur in the AMBAG region during this time frame. The MBARD AQMP anticipated the level of population growth associated with the project in AMBAG's long-term population forecasts. Therefore, it would not exceed official regional population projections. The proposed project would be consistent with AQMP growth assumptions and accommodated within and consistent with the AQMP. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 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?

Impact AQ-2 **CONSTRUCTION OF THE PROPOSED PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE MBARD REGION IS IN NONATTAINMENT UNDER APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARDS. THEREFORE, IMPACTS RELATED TO CONSTRUCTION AND OPERATION WOULD BE LESS THAN SIGNIFICANT.**

Construction-generated emissions are temporary and short-term but can represent a significant air quality impact. Construction activities such as demolition, grading, construction worker travel to and from the project site, delivery and hauling of construction supplies and debris to and from the project site, and fuel combustion by on-site construction equipment would generate emissions of O_3 precursors (ROG and NO_x), CO, SO_2, and fugitive dust (PM_{10} and $PM_{2.5}$).

The MBARD Guidelines provide project-level thresholds for construction emissions. The project would be cumulatively less than significant if the analysis finds the project to be below MBARD project-level thresholds. See Section 4.1.3(b) and Appendix F for more detailed information regarding the construction assumptions used in this analysis, including construction equipment and duration. Table 4.1-5 shows the estimated maximum daily emissions for each year of construction of the project. The emissions generated during construction would not exceed MBARD’s significance thresholds.

Table 4.1-5 Estimated Maximum Daily Construction Emissions (pounds per day)

	Maximum Daily Emissions					
Construction Year[1]	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2025	9	90	82	<1	34	18
2026	1	11	16	<1	1	<1
2027	30	11	18	<1	1	<1
2028	30	11	17	<1	1	<1
Maximum Emissions (lbs/day)	**30**	**90**	**82**	<1	**34**	**18**
MBARD Thresholds	N/A	N/A	N/A	N/A	82	N/A
Threshold Exceeded?	N/A	N/A	N/A	N/A	**No**	N/A

ROG = reactive organic gas, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter, N/A = Not applicable

[1]Project construction would occur for approximately three years, from June 2025 to January 2028. Because construction would occur within four calendar years, all calendar years are shown in the table.

Notes: All numbers have been rounded to the nearest whole number. Emissions presented are the highest of the winter and summer modeled emissions.

Operation of the project would generate criteria air pollutant emissions associated with area sources (e.g., architectural coatings, consumer products, and landscaping equipment), energy sources (i.e., use of natural gas for space and water heating), and mobile sources (i.e., vehicle trips to and from the project site). Table 4.1-6 summarizes the project's operational emissions by emission source (area, energy, and mobile). As shown, the emissions generated by the operation of the proposed project would not exceed MBARD regional thresholds for criteria pollutants. Therefore, the project would not contribute substantially to an existing or projected air quality violation. In addition, because criteria pollutant emissions and regional thresholds are cumulative, the project would not result in a cumulatively considerable net increase of criteria pollutants.

Table 4.1-6 Estimated Maximum Daily Operational Emissions (pounds per day)

Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	14	<1	10	<1	<1	<1
Energy	<1	2	1	<1	<1	<1
Mobile	5	2	10	<1	<1	<1
Total	**20**	**5**	**21**	**<1**	**<1**	**<1**
MBARD Threshold	137	137	550	N/A	82	55
Threshold Exceeded?	**No**	**No**	**No**	**N/A**	**No**	**No**

ROG = reactive organic gases, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter, N/A = not applicable

Notes: All numbers have been rounded to the nearest whole number. Emissions presented are the highest of the winter and summer modeled emissions. Numbers may not add up due to rounding.

Source: See Appendix F for CalEEMod calculations and assumptions.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3:	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 **THE PROPOSED PROJECT COULD POTENTIALLY EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS IN THE FORM OF TOXIC AIR CONTAMINANT EMISSIONS GIVEN THE PROXIMITY TO SURROUNDING SENSITIVE RECEPTORS. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.**

Construction

Construction-related activities would result in temporary project-generated DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of DPM, discussed in the following paragraphs, outweighs the potential non-cancer health impacts (CARB 2017).

Generation of DPM from construction projects typically occurs in a single area for a short period. The proposed project's construction would occur in phases over approximately three years. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, and a more extended exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a more extended period.

The proposed project would be consistent with the applicable AQMP requirements and control strategies intended to reduce emissions from construction equipment and activities. The proposed project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. However, given the construction area's proximity to nearby sensitive receptors and the estimated on-site particulate matter emissions during grading and site preparation, impacts from TACs could be potentially significant, and mitigation is required.

Operation

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities). CARB guidelines recommend siting distances both for the development of sensitive land uses in proximity to TAC sources and for the addition of new TAC sources in proximity to existing sensitive land uses. The project is not near potential sources of TAC emissions as listed above. Residential land uses are not considered land uses that generate substantial TAC emissions based on reviewing the air toxic sources listed in CARB's guidelines. Therefore, the expected hazardous TACs generated on site (e.g., cleaning solvents, paints, landscape pesticides, etc.) for the proposed land uses would be below thresholds warranting further study under the California Accidental Release Program. The project would not expose off-site sensitive receptors to significant amounts of carcinogenic or TACs. Therefore, operational impacts would be less than significant.

Mitigation Measure

AQ-3 Construction Emissions Reduction

Prior to issuance of grading permits, the following measures shall be implemented:

- All mobile off-road equipment (wheeled or tracked) greater than 50 horsepower used during construction activities shall meet the USEPA Tier 4 final standards. Tier 4 certification can be for the original equipment or equipment that is retrofitted to meet the Tier 4 Final standards. In the event of specialized equipment where Tier 4 Final equipment is not commercially available at the time of construction, the equipment shall meet Tier 3 standards at a minimum.
- Alternative Fuel (natural gas, propane, electric, etc.) construction equipment shall be incorporated where available. These requirements shall be incorporated into the contract agreement with the construction contractor and any applicable subcontractors. A copy of the equipment's certification or model year specifications shall be available upon request for all equipment on site.
- Electricity shall be supplied to the site from the existing power grid to support the electric construction equipment. If connection to the grid is determined to be infeasible for portions of the project, a non-diesel fueled generator shall be used.
- The project shall comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction.

Significance After Mitigation

With the incorporation of Mitigation Measure AQ-3, the project would be generally required to use off-road diesel-powered construction equipment that meets or exceeds the most stringent and environmentally protective CARB and USEPA Tier 4 off-road emissions standards, or alternatively fueled equipment which would substantially reduce DPM emissions. The Tier 4 standards reduce DPM emissions by approximately 81 to 96 percent as compared to equipment that meets the Tier 2 off-road emissions standards, depending on the specific horsepower rating of each piece of equipment. Thus, with implementation of Mitigation Measure AQ-3, construction activities would not expose sensitive receptors to substantial TAC concentrations that would potentially exceed cancer risk greater than one incident per 100,000 population. Construction-related health impacts would be reduced to a less than significant level with mitigation.

Threshold 4:	Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 THE PROPOSED PROJECT WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) THAT WOULD ADVERSELY AFFECT A SUBSTANTIAL NUMBER OF PEOPLE. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Temporary odors from vehicle exhaust and construction equipment, fumes from fuel, and architectural coatings would occur during construction activities. However, construction-related odors would be short-term and would cease upon completion. In addition, MBARD Rule 402 prohibits the discharge of air contaminants or other materials which would cause a nuisance or detriment to a considerable number of persons or the public, except for odors from agricultural activities. Therefore, the project would not have significant impacts related to objectionable odors during construction.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (MBARD 2008). The project does not include any uses associated with objectionable odors. Operational odor emissions would be limited to odors associated with vehicle and engine exhaust and trash receptacles. The proposed project would not expose sensitive receptors to substantial concentrations of odors. It would not directly or indirectly result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. Therefore, impacts related to objectionable odors would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.1.4 Cumulative Impacts

Air quality emissions in one location contribute to regional air quality in the NCCAB. Therefore, the geographic scope for considering cumulative impacts to air quality includes the entire NCCAB, which is comprised of Monterey, Santa Cruz, and San Benito counties and covers an area of more than 5,100 square miles. Air pollution may combine with other cumulative projects (past, present, and reasonably foreseeable future) to violate criteria pollutant standards if the existing background sources cause nonattainment conditions, as they do according to the state standards for ozone and particulate matter in the MBARD. Air districts manage attainment of the criteria pollutant standards by adopting rules, regulations, and attainment plans, which comprise a multifaceted programmatic approach to such attainment.

Air pollution is largely a cumulative impact, and MBARD has provided guidance on the subject of cumulative impacts. The MBARD *CEQA Air Quality Guidelines* include recommendations for the analysis of cumulative impacts pertaining to ozone and localized pollutants. Inconsistency with the AQMP is considered a cumulatively adverse air quality impact. Future cumulative development would potentially exceed the AQMP growth assumptions and result in cumulatively considerable project emissions. However, the project is consistent with the current AQMP growth projections and criteria pollutant emission thresholds. The proposed project's development would consist of 171 residential units, adding approximately 544 new residents. The proposed project would accommodate regional growth consistent with the AQMP's 2030 population forecast. As described in Impact AQ-2 above, the proposed project's daily emissions of construction and operation of related pollutants would not exceed MBARD regional thresholds; therefore, the project's contribution to cumulative air quality impacts would not be cumulatively considerable.

Cumulative projects could expose sensitive receptors to cancer risks greater than one incident per 100,000 population; however, similar to the proposed project, it is likely that cumulative projects would be required to implement TAC-reduction measures, resulting in significant but mitigable cumulative impacts. As described under Impact AQ-3 above, construction activities associated with the proposed project would not expose sensitive receptors to substantial TAC concentrations. Therefore, the proposed project's contribution to cumulative TAC impacts would not be cumulatively considerable.

Cumulative projects would adversely affect sensitive receptors from odor emissions if cumulative projects were typical odor-producing land uses. Construction of cumulative projects would result in construction equipment-related odors; however, the temporary nature of construction would ensure less than significant cumulative odor impacts. Since the proposed project's construction would be temporary and operational activities would not produce substantial odors, the project's cumulative contribution to cumulative odor emission impacts would not be considerable.

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4.2 Biological Resources

This section provides an assessment of the potential for direct and indirect impacts to sensitive natural communities, special-status species, regulated waterways and wetlands, sensitive habitat and mature native trees, and wildlife movement corridors associated with the proposed project. The analysis presented herein is based on the Biological Resources Assessment (BRA) report prepared for the project by H. T. Harvey & Associates (H. T. Harvey) dated September 2020 (included as Appendix B). A field reconnaissance survey of the project site to confirm the results of the BRA was conducted by a Rincon Consultants, Inc. biologist on February 7, 2022.

4.2.1 Setting

The project site is located southeast of the City of Hollister, in the San Benito River watershed. Based on an earlier project footprint, the BRA Study Area was defined as the entire 39.4-acre parcel (APN 025-320-004), of which, approximately 9.2-acres in the northeast corner were removed from further consideration after the BRA was completed. Please refer to Figure 4.2-1 for a depiction of the BRA Study Area and habitat map. The project site evaluated for this EIR is approximately 30.2 acres of the 39.4-acre parcel. The project site is surrounded by rural residential development, vineyards, and active farmland. Most of the site consists of recently mowed row crops and a single-family residence, a large barn, with an intermittent drainage running adjacent to the northeast boundary of the site. A paved section of Old Ranch Road is present on the west side of the site.

a. Vegetation Communities

This section addresses the land cover types and vegetation communities on the project site, as defined in the BRA and confirmed by Rincon's reconnaissance survey in February 2022. H.T. Harvey (2020; Appendix B) identified one vegetation community and two land cover types on the project site (Figure 4.2-1). None of these vegetation communities and land cover types are natural vegetation communities, as described in *A Manual of California Vegetation* (Sawyer et al. 2009). Rincon confirmed the current conditions are consistent with the vegetation communities described in Appendix B, discussed in detail below.

Disked Hayfield

Most of the project site was mapped as a disked hayfield (Appendix B: Figure 3). The project site contains weedy ruderal species in this area, including black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), and prickly lettuce (*Lactuca serriola*) (Appendix B). The hayfield appears to be regularly disked and mowed. Species composition in this land cover type is consistent throughout most of the site. Shrubs, weeping willow (*Salix babylonica*), and Monterey pine (*Pinus radiata*) trees were also present along the edges in the northern and southern portions of the site. Vegetation observed in the disked hayfield during Rincon's reconnaissance survey consisted of newly sprouted row crops such as cultivated wheat (*Triticum* sp.) and oat (*Avena* sp.).

Figure 4.2-1 BRA Study Area and Habitat Map

Source: H.T. Harvey & Associates, 9/2020.

Developed Areas

Approximately 3.24 acres of the site is developed with a single-family residence, a large barn, and a paved section of Old Ranch Road (Appendix B). Vegetation observed in this developed area during Rincon's reconnaissance survey consisted mainly of ornamental trees, shrubs, a citrus tree, redwoods (*Sequoia sempervirens*), and turf grass, although ruderal vegetation was also observed in the developed area, surrounding the single-family residence and barn.

Ruderal Vegetation

Ruderal is defined as sparse weedy vegetation, characterized by high levels of human disturbance. Ruderal vegetation was present along the edges of the disked hayfield and consisted mainly of black mustard and yellow star thistle (Appendix B). This community was also observed during Rincon's reconnaissance survey, consistent with the BRA.

b. Jurisdictional Waters and Wetlands

No waters or wetlands were observed on the project site. A drainage swale is located on the northeastern portion of APN 025-320-004, in the northeastern portion of the project site (Appendix B). This feature does not contain wetland plants, a defined bed or bank; however, it is mapped in the USFWS National Wetland Inventory (NWI) as an unnamed, seasonally flooded, intermittent stream. This drainage flows from southeast of the site, to the northwest diagonally, and eventually into Santa Ana Creek. This drainage is likely under U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW jurisdiction, and is more accurately characterized as an intermittent drainage (Appendix B). This drainage was also observed during Rincon's reconnaissance survey, consistent with the BRA.

c. Special-Status Species

Special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service under the federal Endangered Species Act (FESA); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1 or 2, which are defined as:

- List 1A = Plants presumed extinct in California
- List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened)
- List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known)
- List 2 = Rare, threatened or endangered in California, but more common elsewhere

Queries of the CNDDB (CDFW 2022a) and CNPS Online Inventory of Rare, Threatened and Endangered Plants of California (CNPS 2022) were conducted by Rincon biologists to update the list compiled by H. T. Harvey (2020, Appendix B) regarding special-status species considered to have potential to occur within the project site.

The BRA evaluated 67 special-status plant species for potential to occur on the project site. None of the 67 special-status plants are expected to occur based on an absence of suitable habitat within the project site (Appendix B).

The BRA evaluated 17 special-status animal species, and identified 14 with potential to occur on the project site (Appendix B):

- California tiger salamander (Central California Distinct Population segment) (*Ambystoma californiense*; federally threatened [FT], state threatened [ST])
- California red-legged frog (*Rana draytonii*, [FT]),
- San Joaquin kit fox (*Vulpes macrotis mutica*, federally endangered [FE], [ST])
- Tricolored blackbird (*Agelaius tricolor*, [ST])
- Loggerhead shrike (*Lanius ludovicianus*, species of special concern [SSC])
- Burrowing owl (*Athene cunicularia*; [SSC])
- Golden eagle (*Aquila chrysaetos*, fully protected [FP])
- White-tailed kite (*Elanus leucurus*, [FP])
- Western pond turtle (*Actinemys marmorata*, [SSC])
- Western spadefoot toad (*Spea hammondii*; [SSC])
- San Joaquin whipsnake (*Masticophis flagellum*, [SSC])
- American badger (*Taxidea taxus*; [SSC])
- Pallid bat (*Antrozous pallidus*, [SSC])
- Townsend's big-eared bat (*Corynorhinus townsendii*, [SSC]).

California tiger salamander (CTS) is assumed present based on known occurrences of this species within the project site. This species was last observed in a breeding pond at the southeast end of the site (Occurrence number 333, last observed in 2000, CDFW 2022a); however, a review of arial imagery shows the property was converted from grazing to row crops between 2006 and 2007, and this pond was filled in.

California red-legged frog (CRLF) are known to occur in San Benito County, and there are known occurrences from the Ridgemark Golf Course to the south. Therefore, this species has a moderate potential to occur on site during upland movement.

Western spadefoot toad (WST) is also assumed present due to the known breeding pond that used to occur in the southeast corner of the project site.

The remaining 11 species evaluated by the BRA report have a low potential to occur on the project site, including: burrowing owl, Western pond turtle, San Joaquin whipsnake, tricolored blackbird (non-breeding), loggerhead shrike, golden eagle (non-breeding), white-tailed kite (non-breeding), San Joaquin kit fox, American badger, pallid bat, and Townsend's big-eared bat. These species have a low potential to occur during foraging due to the lack of suitable nest trees, shrubs, ground squirrel burrows, roosting or denning habitat. However, burrowing owl and San Joaquin kit fox are discussed specifically in the impact section below due to regional significance.

Based on the existing conditions on the project site, and updated queries of CNDDB and CNPS, one species not addressed in BRA report was identified for further review: Swainson's hawk (*Buteo swainsoni*, [ST]). This species is commonly found in open environments, such as native prairie and grassland vegetation communities, that provide foraging and breeding habitat. They typically nest in trees located near agricultural field and pastures where they feed. Trees on the project site do not provide suitable nesting habitat; however, suitable nest trees occur in the project vicinity. There are no recent occurrences on the CNDDB; however, there are numerous sightings listed on ebird, some indicating breeding approximately three miles to the northeast of the project site (ebird 2022). A pair was also documented nesting in Santa Clara County near Morgan Hill in 2013, and in subsequent years this pair and a second pair have nested in the Coyote Valley north of Hollister (Phillips et al. 2014). This species would have a low potential to occur on the project site due to lack of suitable nesting habitat and potential breeding observations no closer than 0.5 mile from the site.

Nesting birds protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) Section 3503 have the potential to nest on the project site. The nesting season in California generally extends from February 1st through August 31st but can vary upon annual climatic conditions.

d. Sensitive Natural Communities

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in CNDDB. The Sensitive Natural Communities List in the CNDDB is not currently maintained and no new information has been added in recent years. CDFW is working to classify and rank vegetation statewide according to State standards that comply with the National Vegetation Classification System, consistent with the approach used in the Manual of California Vegetation. Currently CDFW publishes the California Natural Community List online (CDFW 2022b). Vegetation rarity ranking is based on a rank calculator developed by NatureServe. According to the CDFW Vegetation Program, alliances with State ranks of S1-S3, as well as certain additional associations specifically noted as sensitive in the List, are considered imperiled, and thus, potentially of special concern.

No sensitive natural plant communities were observed on the project site during the reconnaissance survey or surveys conducted for the BRA (Appendix B).

e. Critical Wildlife Habitat

The project site is located within federally designated critical habitat for California tiger salamander (CTS; Ana Creek Unit 15a) as broadly mapped by USFWS (2005, 2022). The 33.4-acre project site represents approximately 1.2 percent of the Ana Creek Unit 15a which encompasses 2,722 total acres. This unit is essential to maintaining the current geographic and ecological distribution of the species within the Bay Area Geographic Region. To meet the definition of critical habitat the site must contain habitat features that are essential to the conservation of the species (such as upland refugia, aquatic habitat, suitable grassland vegetation, etc.). The site only provides marginal (poor) upland habitat for CTS, due to the scarcity of small mammal burrows along the perimeter of the site and lack of aquatic habitats (Appendix B); therefore, the site does not meet the definition of critical habitat.

f. Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Other corridors may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Habitat within a habitat linkage does not necessarily need to be identical to the habitat being linked. Rather, the linkage needs only to contain sufficient cover and forage to allow temporary utilization by species moving between core habitat areas. Habitat linkages are typically contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Some species may require specific physical resources (such as rock outcroppings, vernal pools, or oak trees) within the habitat link for the linkage to serve as an effective movement corridor, while other more mobile or aerial species may only require discontinuous patches of suitable habitat to permit effective dispersal and/or migration. Wildlife movement corridors may occur at either large or small scales. The mountainous regions of the County may support wildlife movement on a regional scale, while riparian corridors and waterways may provide local small-scale dispersal corridors for wildlife movement among habitat patches throughout the County.

The CDFW BIOS database (2022c) and the California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California (Spencer et al. 2010) were reviewed for information on wildlife corridors in the region. Missing Linkages: Restoring Connectivity to the California Landscape and Critical Linkages: Bay Area & Beyond (Penrod et al. 2001, 2013) identifies movement corridors throughout California, including specific details on corridors in San Benito County. These reports were also reviewed for information on regional wildlife movement and known wildlife corridors.

The project site is predominantly agricultural land (a disked hayfield) that provides a large area of open space connecting other patches of open space on the adjacent properties. There is a potential for wildlife movement for highly mobile vertebrate species to move across the San Benito River Valley, but there are no Essential Habitat Connectivity Areas or Linkages mapped within the project site or project vicinity (CDFW 2022c). The nearest mapped landscape linkages begin approximately five miles to the east of the project site, containing a large area of natural landscape blocks in the Diablo Range. Mountain lions may be present in the hills surrounding the City of Hollister and adjacent areas; however, due to the level of human disturbance on and in the vicinity of the project site, it is not likely that mountain lions use the site as a movement corridor.

The intermittent drainage to the northeast of the project site may be used by semi-aquatic species such as Sierran treefrog (*Pseudacris sierra*) and western toad (*Anaxyrus boreas halophilus*), for dispersal if ponded water occurs. Features surrounding the project site serve as potential barriers to dispersal, including a vineyard to the north and residential areas to the south. These land uses do not constitute a complete barrier to dispersal, but decrease the likelihood of dispersal.

4.2.2 Regulatory Setting

Federal, State, and local authorities under a variety of statutes and guidelines share regulatory authority over biological resources. The primary authority under CEQA for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance is the County of San Benito. The CDFW is a trustee agency for biological resources throughout the State under CEQA and has direct jurisdiction under the CFGC, which includes, but is not limited to, resources protected by the State of California under the California Endangered Species Act (CESA). Federal, State, and local regulations that form the regulatory basis for the impact analysis are discussed in detail in Section 3 of the BRA (Appendix B) and summarized below.

a. Federal

Clean Water Act

Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the USACE under provisions of Section 404 of the 1972 Clean Water Act (CWA). Waters of the U.S. include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, adjacent wetlands, and other waters, such as intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, territorial seas, and wetlands (33 CFR Part 328). Wetlands are generally identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators (Appendix B). Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and, depending on the circumstances, may not be subject to USACE jurisdiction under the recently adopted Navigable Waters Protection Rule (Appendix B). Similarly, ephemeral streams with no connection to groundwater and any wetlands adjacent to such features may be disclaimed by the USACE under the Navigable Waters Protection Rule.

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

Federal Endangered Species Act

FESA protects federally listed wildlife species from harm or take, which is broadly defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.” Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are legally protected from take under the FESA only if they occur on federal lands. USFWS and the National Marine Fisheries Service have jurisdiction over federally listed, threatened, and endangered species under FESA. USFWS also maintains lists of proposed and candidate species, which are not legally protected under FESA, but may become listed in the near future.

Migratory Bird Treaty Act

MBTA (16 United States Code Section 703) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. MBTA protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

b. State

State Water Resources Control Board

The 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 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." 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 a proposed project will uphold state water quality standards. The SWRCB and the nine RWQCBs 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.

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 CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in take of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill").

California Fish and Game Code

The 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 the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under Code 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."

National Pollutant Discharge Elimination System Construction General Permit

Construction projects in California causing land disturbances that are equal to one acre or greater must comply with State requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Stormwater Pollution Prevention Plan must be developed and maintained during construction of the project and it must include the use of Best Management Practices to protect water quality until the site is stabilized.

Regional Water Quality Control Board General Permit

Projects in San Benito County must comply with the California RWQCB, California Coast Region General Permit for Waste Discharge Requirements (WDRs) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (GP WDRs) (Water Board Order No. 2013-001-DWQ). This permit requires that all projects implement Best Management Practices and incorporate Low Impact Development practices into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. To meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other techniques.

c. Local

San Benito County 2035 General Plan

The 2035 General Plan Land Use Element and Natural and Cultural Resources Element provide the following goals, policies, and objectives pertaining to biological resources that are relevant to this analysis. -

Land Use Element

LU-1.8 **Site Plan Environmental Content Requirements.** The County shall require all submitted site plans, tentative maps, and parcel maps to depict all environmentally sensitive and hazardous areas, including: 100-year floodplains, fault zones, 30 percent or greater slopes, severe erosion hazards, fire hazards, wetlands, and riparian habitats.

LU-1.10 **Development Site Suitability.** The County shall encourage development sites to avoid natural and manmade hazards, including but not limited to, active seismic faults, landslides, slopes greater than 30 percent, and floodplains. Development sites shall also be on soil suitable for building and maintaining well and septic systems (i.e., avoid impervious surfaces, high percolation or high ground water areas, and provide setbacks from creeks). The County shall require adequate mitigation for any development located on environmentally sensitive lands (e.g., wetlands, erodible soil, archaeological resources, important plant and animal communities).

Natural and Cultural Resources Element

Goal NCR-1 To preserve and enhance valuable open-space lands that provide wildlife habitat and conserve natural, historical, archaeological, paleontological, tribal, and visual resources of San Benito County.

NCR-1.1 **Maintenance of Open Space.** The County shall support and encourage maintenance of open space lands that support natural resources, agricultural resources, recreation, tribal resources, wildlife habitat, water management, scenic quality, and other beneficial uses.

Goal NCR-2 To protect and enhance wildlife communities through a comprehensive approach that conserves, maintains, and restores important habitat areas.

NCR-2.1 **Coordination for Habitat Preservation.** The County shall work with property owners and federal and State agencies to identify feasible and economically-viable methods of protecting and enhancing natural habitats and biological resources in the county.

NCR-2.2 **Habitat Protection**. The County shall require major subdivisions within potential habitat of federal- or State-listed rare, threatened, or endangered plant or animal species to mitigate the effects of development. Mitigation for impacts to species may be accomplished on land preserved for open space, agricultural, or natural resources protection purposes.

NCR-2.4 **Maintain Corridors for Habitat.** The County shall protect and enhance wildlife migration and movement corridors to ensure the health and long-term survival of local animal and plant populations, in particular contiguous habitat areas, in order to increase habitat value and lower land management costs. As part of this effort, the County shall require road and development sites in rural areas to:

a. Be designed to maintain habitat connectivity with a system of corridors for wildlife or plant species and avoiding fragmentation of open space areas; and
b. Incorporate measures to maintain the long-term health of the plant and animal communities in the area, such as buffers, consolidation of/or rerouting access, transitional landscaping, linking nearby open space areas, and habitat corridors.

NCR-2.5 **Mitigation for Wetland Disturbance or Removal.** The County shall encourage the protection of the habitat value and biological functions of oak woodlands, native grasslands, riparian and aquatic resources, and vernal pools and wetlands. The County shall require that development avoid encroachment and require buffers around these habitats to the extent practicable. The County shall further require mitigation for any development proposals that have the potential to reduce these habitats. Recreational trails and other features established within natural wetlands and aquatic and riparian buffer areas shall be, as long as such areas are not required to meet the Americans with Disabilities Act, located along the outside of the sensitive habitat whenever possible to minimize intrusions and maintain the integrity of the habitat. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, public boat ramps, and similar uses. In all cases where intrusions into these buffers are made, only the minimum amount of vegetation necessary to construct the feature shall be removed.

NCR-2.8 **Pre-Development Biological Resource Assessment.** The County shall require the preparation of biological resource assessments for new development proposals as appropriate. The assessment shall include the following: a biological resource inventory based on a reconnaissance-level site survey, and an analysis of anticipated project impacts to: potentially occurring special-status species (which may require focused special-status plant and/or animal surveys); an analysis of sensitive natural communities; wildlife movement corridors and nursery sites on or adjacent to the project site; potentially jurisdictional wetlands/waterways; and locally protected biological resources such as trees. The assessment shall contain suggested avoidance, minimization, and/or mitigation measures for significant impacts to biological resources.

NCR-2.9 **Mitigation Funding and Site Protection.** The County shall require that project applicants demonstrate that adequate funding can be provided to implement all required biological mitigation and monitoring activities. Habitat preserved as part of any mitigation and monitoring plan shall be preserved through a conservation easement, deed restriction, or other method to ensure that the habitat remains protected.

NCR-2.10 **Invasive Species.** The County shall require that new development avoid the introduction or spread of invasive plant species during construction by minimizing surface disturbance, seeding and mulching disturbed areas with certified weed-free native mixes, and using native or noninvasive species in erosion control plantings.

NCR-4.1 **Mitigation for Wetland Disturbance or Removal.** The County shall consider implementing Regional Water Quality Control Board Basin Plan policies to improve areas of low water quality, maintain water quality on all drainage, and protect and enhance habitat for fish and other wildlife on major tributaries to the Pajaro River (San Benito River, Pacheco Creek) and the Silver Creek watershed.

San Benito County Code of Ordinances

Some local ordinances such as those that protect trees, riparian corridors, and environmentally sensitive habitats afford protection to biological resources. The following San Benito County code provisions protect natural resources and address compliance with environmental regulations.

Chapter 19.17: Grading, Drainage and Erosion Control

Section 19.17.005 (Riparian Protection) states that grading activity shall not take place within 50 feet (measured horizontally) from the top of the bank of a stream, creek, river or within 50 feet of a wetland or other body of water.

Chapter 19.19: Habitat Conservation Plan Study Area

This chapter provides a method for financing development and implementation of a habitat conservation plan and a Section 10(a) permit under the FESA for the San Benito County habitat conservation plan study area (all lands within the unincorporated areas of San Benito County). This chapter also provides for habitat mitigation as identified in the habitat conservation plan.

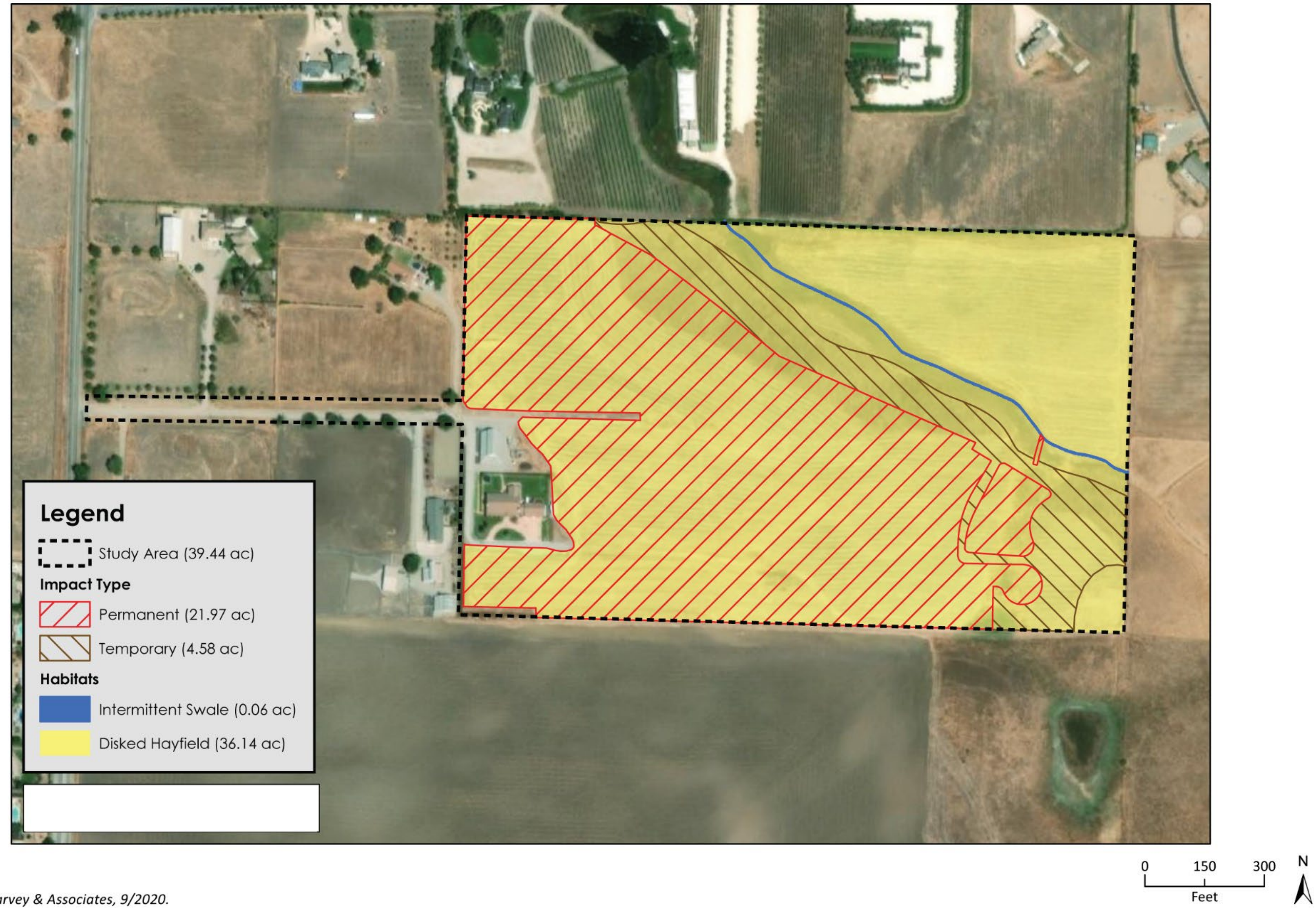
This chapter also provides for the establishment of fees which will satisfy USFWS, as well as county, mitigation requirements for endangered species and their habitats which may occur within the area of the county designated herein pending completion and adoption of a habitat conservation plan and issuance of a Section 10 (a) permit.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds

The impact analysis is based on the existing biological resources documented in the BRA report (Appendix B) and Rincon's reconnaissance survey. Project impacts to flora and fauna are focused upon rare, threatened, endangered species, or species listed under *CEQA Guidelines* Section 15380. Areas of impact are depicted in Figure 4.2-2.

Figure 4.2-2 BRA Study Area and Habitat Map



Source: H.T. Harvey & Associates, 9/2020.

According to Appendix G of the *CEQA Guidelines*, a proposed project would have a significant impact on biological resources if it would:

1. 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.
2. 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.
3. 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. Interfere substantially (i.e., direct/indirect reduction) 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. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

b. Project Impacts and Mitigation Measures

Threshold 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?

Impact BIO-1 **THE PROJECT WOULD RESULT IN IMPACTS TO SPECIAL-STATUS PLANT AND ANIMAL SPECIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.**

A total of 15 special-status animal species were determined to have some potential to occur within or adjacent to the project site (14 species were identified in Appendix B, with one additional species, Swainson's hawk, included for the purposes of this analysis). However, 12 of these have a low potential to occur. As noted above in Section 4.3.1 Setting, *c. Special Status Species*, only 3 have a higher potential to occur on site (CTS, CRLF, and WST). No special-status plants were determined to have the potential to occur on the site.

California Tiger Salamander

Potential CTS aquatic breeding habitat occurs on parcels adjacent to the project site, and small mammal burrows along the perimeter of the site may provide upland habitat; however, the hayfield crop may be a barrier for upland movement due to vegetation density and height. In addition, a known breeding pond was formerly located in the southeast corner of the project site (CDFW 2022c). Although the pond is no longer present on the site, CTS were seen on the site when the pond existed. Therefore, this species is conservatively assumed to still be present on the project site.

Direct impacts to CTS would occur through mortality or injury during construction phase ground disturbing activities. Indirect impacts to CTS may occur during construction in the vicinity of drainages or ponds that contain suitable aquatic habitat through degradation of water quality from potential spills or construction generated erosion if upslope of such aquatic features. Development of the project would impact upland areas (up to 21.97 acres permanently removed and 4.58 acres temporarily affected from grading and construction disturbance) (Appendix B); however, the site is primarily a disked hayfield and does not contain the physical or biological features required for the conservation of the species, such as aquatic breeding habitat or upland habitat large enough to support a population. Although the project is located within the defined limits of USFWS critical habitat, the site lacks actual necessary habitat components required to support CTS. Impacts to CTS would require consultation with CDFW and USFWS regarding incidental "take" authorizations. Impacts to CTS (Central California Distinct Population Segment) without permit authorization would constitute a violation of the federal and State Endangered Species Acts. Impacts to California tiger salamander are potentially significant.

California Red-legged Frog

The project would not directly impact aquatic habitat; however, CRLF may occur incidentally within the project site, including 4.58 acres of the site temporarily affected from grading and construction disturbance during upland dispersal movement. Direct impacts to CRLF could occur through mortality or injury during ground disturbing activities and construction. Impacts to CRLF would require consultation with USFWS regarding incidental "take" authorization. Impacts to CRLF are potentially significant.

Western Spadefoot Toad

Potential WST aquatic breeding habitat occurs on parcels adjacent to the project site, and small mammal burrows along the perimeter of the site may provide upland habitat. In addition, a known breeding pond was formerly located in the southeast corner of the project site (CDFW 2022b). Direct impacts to WST would occur through mortality or injury during construction phase ground-disturbing activities. Indirect impacts to WST may occur during construction in the vicinity of drainages or ponds that contain suitable aquatic habitat through degradation of water quality from potential spills or construction generated erosion if upslope of such features. Given the proximity to known breeding habitat and regional significance, impacts to this species are potentially significant.

Burrowing Owl

While burrowing owls have low potential to occur on the project site, they are regionally significant. They also differ from other bird species in that unlike nesting birds, impacts to burrowing owls can differ substantially as they nest in burrows rather than trees. The project site does not contain suitable habitat for burrowing owl due to routine disking and vegetation height of hay crops, which are typically too high for burrowing owl. Burrowing owl could potentially occur incidentally on the site during migration. Individuals may also occur on parcels adjacent to the project site containing suitable burrows; however, most of these parcels are also disked hayfield. If present, individuals could be impacted from construction of the proposed project.

Reptile Species of Special Concern

Habitat for western pond turtle and San Joaquin whipsnake does not occur on the project site; however, these species may occur incidentally during upland dispersal movement. Direct impacts to these species could occur from direct mortality during ground disturbing activities. No indirect impacts are expected. Compared to the regional population of these species, a relatively small number of individuals are expected to be encountered and subject to potential impacts from project activities. Impacts as a direct or indirect result of the project are not expected to result in adverse population effects or result in adverse modification in habitat that would have an adverse effect on the species.

Special-Status Birds, Nesting birds, and Raptors

In addition to the special-status animal species discussed above, several bird species protected by the CFGC and MBTA may also nest in trees and shrubs on site. Two fully protected bird species (golden eagle, and white-tailed kite), two state threatened bird species (Swainson's hawk and tricolored blackbird), and one California Species of Special Concern bird species (loggerhead shrike) have the potential to occur on the project site. Impacts to golden eagle and Swainson's hawk are unlikely due to the site only providing foraging habitat for the species and no direct or indirect impacts to golden eagle or Swainson's hawk nesting habitat would occur. No nesting habitat for tricolored blackbird occurs on site and the species would only occur as a migrant, non-breeding individual. No impacts to tricolored blackbird would occur.

Construction activities may result in direct or indirect impacts to other nesting bird species, should they be present within the immediate vicinity of the project site at the time of construction. Potential nesting habitat for native birds is available in trees and shrubs around the edges of the project site, as well as in landscaped areas. Direct impacts to nesting birds may occur due to removal or trimming of trees, shrubs, and other nesting substrates that may contain active nests. Impacts could occur during initial ground disturbing activities as well as during site preparation (clearing and grubbing activities). Indirect impacts to nesting birds may occur from construction activities in the vicinity of an active nest resulting in distress to adults and disruption of nesting behavior leading to abandonment or nest failure. Impacts to nesting birds through direct or indirect impacts are potentially significant.

San Joaquin Kit Fox

The project site is outside known core population areas of San Joaquin kit fox, and does not contain suitable vegetation, natural habitat, den sites/burrows, or preferred prey species. The site is surrounded by rural development and not connected to any tracts of natural habitat or open space that may be occupied by San Joaquin kit fox. The level of human presence and potential for domestic dogs (*Canis familiaris*), coyote (*Canis latrans*), and red fox (*Vulpes vulpes*) (known predators), are a deterrent for kit fox. Additionally, known occurrences within five miles of the site are all from the 1970s. The project site does not contain suitable habitat (e.g., arid conditions with bare ground, an abundant prey population). Therefore, loss of potential habitat suitable for San Joaquin kit fox would not be a significant impact. However, despite the lack of suitable habitat, it is possible that San Joaquin kit fox could occur on the project site if core populations increase, and individuals make long dispersal movements. The project could result in the direct mortality of individuals if an individual were present on site during construction. Specifically, direct impacts to San Joaquin kit fox are unlikely, but may occur as a result of construction activities through injury and direct mortality in the unlikely event that a fox was present during construction, which would be potentially significant.

Mammal Species of Special Concern

Suitable foraging habitat for pallid bat and Townsends big eared bat occurs on the project site; however, roosting habitat is absent. The site may also provide foraging habitat for American badger. These species are nocturnal and are not expected to occur on site during construction (during daylight hours). Based on the low quality of habitat and relatively small area to be disturbed compared to the foraging habitat available in the greater landscape along the valley floor and surrounding hills, this impact would be less than significant.

Mitigation Measures

To reduce impacts to special status species, the following mitigation measures are required:

BIO-1(a) California Tiger Salamander (CTS), California red-legged frog (CRLF), and Western Spadefoot Toad (WST) Pre-Construction Survey and Avoidance

The following measures are required to reduce impacts to individual CTS, CRLF, and WST habitat (additional measures may be required by the CDFW and/or USFWS):

- No more than 14 days prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall conduct a pre-construction survey within the disked hayfield. The surveys shall include mapping of all areas containing small mammal burrows.
- An additional pre-construction clearance survey for CTS, CRLF, and WST shall be conducted where suitable habitat is present not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer.
- Prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall oversee installation of exclusion fencing (e.g., silt fencing) along the north, east, and southern boundaries of the site (i.e., along the boundaries with undeveloped parcels) to prevent CTS, CRLF, and WST from entering active work areas.
- To avoid encountering migrating CTS within range of potentially suitable aquatic habitat, initial ground disturbance within upland areas shall be limited to July 15 to October 15. Work shall be postponed if chance of rain is greater than 70 percent based on the NOAA National Weather Service forecast or within 48 hours following a rain event greater than 0.1 inch. If work must occur during these conditions, a qualified biologist shall conduct a clearance sweep of work areas prior to the start of work.
- All projects occurring within or adjacent to habitats that may support CTS or CRLF shall have a County-approved biologist present during all initial ground disturbing/vegetation clearing activities.
- If any life stage of the CTS or CRLF is identified within the work area, construction and grading in these areas shall be halted and the County, CDFW, and USFWS shall be contacted immediately. Additional avoidance strategies shall be approved by the County in consultation with CDFW and USFWS to achieve compliance with the FESA and CESA. At a minimum, mitigation measures shall include purchase of credits at an approved conservation bank or purchase and management of offsite suitable upland habitat for CTS to offset loss of suitable upland habitat for this species (i.e., area[s] containing small mammal burrows) at a ratio of 2:1 (two acres preserved for every one acre of impact).

- A pre-construction survey report shall be submitted to the County Resource Management Agency within 15 days of completion of the survey. The report shall include the dates, times, weather conditions, aquatic and terrestrial habitat conditions (including a map of small mammal burrow or burrow complex locations), agency consultation(s) if individuals are discovered, and personnel involved in the surveys.

BIO-1(b) Worker Environmental Awareness Program (WEAP)

Prior to the initiation of grading or construction activities (including staging and mobilization), a County-approved qualified biologist shall conduct a WEAP training to be attended by all personnel associated with project construction. The purpose of the WEAP is to aid personnel in recognizing special-status resources that may occur on the project site. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction of the project. In addition, personnel will be briefed on the reporting process in the event of an unintended occurrence or inadvertent injury to a special-status species during construction or operations. All employees shall sign a form provided by the trainer documenting that they have attended the WEAP and understand the information presented to them. A WEAP attendance log that includes the names and signatures of all personnel that have received the training shall be provided to the San Benito County Resource Management Agency, Planning Division compliance monitoring staff prior to the start of grading or construction activities.

BIO-1(c) General Avoidance and Minimization Measures

The following measures shall be implemented during grading and construction activities and implementation of the compensatory mitigation if required under BIO-1(a).

- Ground disturbance shall be limited to the minimum necessary to complete construction activities. Construction limits of disturbance shall be flagged. All equipment and material storage, parking, staging and other support areas shall be identified prior to issuance of a grading permit. Areas of special biological concern within or adjacent to construction limits shall have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All work shall occur during daylight hours.
- Upon completion of construction all excess materials and debris shall be removed from the project site and disposed of appropriately.
- The work area shall remain clean. All food-related trash items shall be enclosed in sealed containers and removed from the site regularly.
- Pets shall be prohibited at the construction site.
- All vehicle maintenance/fueling/staging shall occur not less than 60 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.

- All equipment operating on site shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within 100 feet of aquatic habitat and extra spill containment and clean up materials shall be located in close proximity for easy access.
- At the end of each workday, excavations shall be secured with a cover, or a ramp shall be provided to prevent wildlife entrapment.
- All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force shall be followed at all times (i.e., decontamination protocol).
- The applicant shall retain a County-approved biologist to monitor compliance with the above avoidance and minimization measures. The approved biologist shall submit monthly maintenance reports during construction to the County.

BIO-1(d) Western Pond Turtle and San Joaquin Whipsnake Pre-construction Survey

- No more than 14 days prior to the start of any construction activities (including staging and mobilization), a qualified biologist shall conduct a pre-construction survey for western pond turtle, and San Joaquin whipsnake (coachwhip) within suitable habitat on the project site. If any of these species are identified within the work area, work that may potentially cause injury or harm to the species shall be halted until the individual leaves the site on their own. CNDDB Field Survey Forms shall be submitted to the CDFW for all special status animal species observed.
- The results of this survey shall be included in the pre-construction survey report submitted to the County Resource Management Agency within 15 days of completion of the survey.

BIO-1(e) Nesting Migratory Birds and Raptors Survey and Avoidance

If ground disturbance, vegetation thinning, or other construction activities are proposed during the bird nesting season (February 1 through August 31), a focused survey for nesting raptors and migratory bird nests shall be conducted by a qualified biologist within 15 days prior to the beginning of construction activities to identify active nests. This survey shall be conducted within the proposed construction area and all accessible areas within 500 feet of the construction area for passerines and small raptors (including white-tailed kite and Loggerhead Shrike), and 0.25 mile for golden eagle, and Swainson's hawk. The results of this survey shall be submitted to the County prior to the start of work.

If active raptor nests are found, no construction activities shall take place within 500 feet, or 0.25 mile for golden eagle and Swainson's hawk, of the nest until the young have fledged. If active nests are found, a 100-foot no disturbance buffer shall be established around the nest location. The no-disturbance buffer may be reduced based on the recommendations of the qualified biologist and approval of the County. The perimeter of the protected area shall be indicated by bright orange temporary fencing. No construction activities or personnel shall enter the protected area, except with approval of the biologist. If tree removal is necessary, trees containing nests shall be removed during the nonbreeding season (September 1 through January 31). If no active nests are found during the focused survey, no further mitigation shall be required. If a lapse in construction work of 15 days or longer occurs during the nesting season, additional nest surveys shall be required before construction is reinitiated.

BIO-1(f) San Joaquin Kit Fox Survey and Avoidance

Prior to any ground disturbance, a qualified biologist shall conduct a pre-construction survey within the proposed disturbance footprint and a surrounding 250-foot radius within accessible areas. The survey shall establish the presence or absence of San Joaquin kit fox and/or suitable dens in accordance with USFWS survey guidelines (USFWS 1999). The pre-construction survey shall be conducted no more than 30 days prior to ground disturbance. If construction lapses for more than 30 days, the survey shall be repeated. Adjacent parcels under different land ownership are not required to be surveyed. The status of all surveyed dens shall be determined and mapped. Written results of pre-construction surveys shall be submitted to the County within five working days after survey completion and before the start of ground disturbance. If San Joaquin kit foxes and/or suitable dens are not identified in the survey area, further mitigation is not necessary. If San Joaquin kit foxes and/or suitable dens are identified in the survey area, avoidance measures in accordance with USFWS protocol shall only be implemented under the authorization of both a CDFW Incidental Take Permit (ITP) and a USFWS Habitat Conservation Plan (HCP). These measures may include but are not limited to:

- If a San Joaquin kit fox den is discovered in the proposed development footprint, the den shall be monitored for three days by a qualified biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens shall be destroyed immediately to prevent subsequent use following USFWS protocol.
- If a natal or pupping den is found, USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW. Documentation of USFWS and CDFW approval shall be submitted to the County prior to den removal.
- If San Joaquin kit fox activity is observed at a den during the initial three-day monitoring period, the den shall be monitored for an additional five consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially blocking the entrance with one-way doors such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist.
- If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances shall be demarcated. The configuration of exclusion zones shall be circular, with a radius measured outward from the den entrance(s). Ground disturbance activities shall not occur within the exclusion zones. Exclusion zone radii for potential dens shall be at least 50 feet and shall be demarcated with four to five flagged stakes. Exclusion zone radii for known dens shall be at least 500 feet and shall be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by San Joaquin kit fox.

Significance After Mitigation

Pre-construction surveys would identify any special-status species or nesting birds that could be affected by project implementation. The avoidance measures would ensure individual special-status species or nesting birds, if present, would be avoided. The WEAP training would inform workers of the potential for status-species or nesting birds, and what to do if they are observed on site after the pre-construction survey. Impacts would be less than significant with implementation of preconstruction surveys, environmental training, and avoidance and minimization mitigation measures.

Threshold 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 Game or US Fish and Wildlife Service?

Impact BIO-2 NO RIPARIAN AND SENSITIVE NATURAL COMMUNITIES ARE PRESENT ON THE PROJECT SITE. NO IMPACT WOULD OCCUR.

As described in Section 4.4.1, *Setting*, no riparian habitat or sensitive natural communities occur on the project site or within the off-site drainage. As such, the project would not have a substantial adverse effect on riparian habitat or sensitive natural communities. No impact would occur.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

No impact would occur.

Threshold 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?

Impact BIO-3 IMPLEMENTATION OF THE PROJECT WOULD RESULT IN THE DIRECT FILLING OR REMOVAL OF UP TO APPROXIMATELY 21 SQUARE FEET OF PROTECTED WETLANDS. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

An intermittent drainage is located adjacent to the northeast site boundary; however, an off-site stormwater outfall is proposed in this drainage. Stormwater from the project site would flow through a network of catch basins and underground pipes to an underground stormwater detention/retention and infiltration facility under the proposed public park at the southeast corner of the project site. This infiltration facility would discharge into the drainage, and would result in 21 square feet of permanent impacts from placement of rock slope protection (Appendix B). The infiltration facility would improve water quality of discharged stormwater, and would not exceed the predevelopment peak flow rate (RJA 2021). Therefore, while impacts to water quality would be reduced, the placement of rock slope protection would result in permit fill. This would be a potentially significant impact to federally protected wetlands. Construction of the off-site stormwater outfall would therefore require USACE Section 404, RWQCB Section 401, and CDFW Lake and Streambed Alteration Agreement (LSAA) permitting.

Mitigation Measures

BIO-3(a) Wetland and Drainage Avoidance

Construction impacts to wetlands and drainages shall be avoided to the maximum extent feasible. Under the direction of a County-approved, qualified biologist, bright orange construction fencing shall be placed to mark a 100-foot buffer from the extent of the wetland to be avoided by construction, as feasible, to protect wetlands and drainages that would not be impacted by the project. The fencing shall be installed prior to the initiation of ground disturbance activities and shall remain in place until grading and construction activities are complete. No vehicles, person, materials, or equipment shall be allowed into the designated protected area. Grading plans shall show the location of these areas and protective fencing. Grading plans showing the location of wetlands and drainages as well as protective fencing locations shall be submitted to the County of San Benito for review and approval prior to issuance of zoning clearance for grading. Construction within the drainage shall be avoided during the wet season, from October 1 through May 1.

BIO-3(b) Off-Site Drainage Mitigation

Impacts to the off-site drainage shall be mitigated at a minimum ratio of 2:1 (acres of habitat restored to acres impacted) for permanent impacts and minimum ratio of 1:1 (acres of habitat restored to acres impacted) for temporary impacts. Upon final design, the County-approved biologist shall determine the final impacts to wetlands and the subsequent amount of acreage needed for restoration for the project. Restoration on the project site is preferable. However, the County may approve off-site restoration at a location in the same watershed as the project that results in equal compensatory value if the applicant can demonstrate to the County’s satisfaction that restoration on the project site cannot be achieved. An Off-Site Restoration Plan developed by a County-approved biologist shall be implemented for no less than five years after construction, or until the local jurisdiction and/or the permitting authority (e.g., USACE) has determined that restoration has been successful. The timing of construction of required mitigation measures shall be determined based on the impacts created by each phase of the project and approved by the County.

The applicant shall submit the Off-Site Restoration Plan to the San Benito County Resource Management Agency, Planning Division as well as USFWS, USACE, RWQCB, and/or CDFW (depending upon the agencies permitting authority over the project) for review and approval prior to issuance of grading permits.

Significance After Mitigation

Wetland and drainage avoidance would eliminate direct impacts to protected features. The off-site compensatory mitigation would protect a greater amount of off-site habitat than would be directly affected by the proposed project. Impacts would be less than significant with avoidance and mitigation.

Threshold 4:	Would the project interfere substantially (i.e., direct/indirect reduction) 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?

Impact BIO-4 THE PROJECT WOULD NOT INTERFERE SUBSTANTIALLY WITH WILDLIFE MOVEMENT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

No regionally significant wildlife movement corridors or habitat linkages occur within the project site. The site may be used for small, local movements; however, the site is bordered by residential and agricultural development. Due to the surrounding development, the project would not significantly impede wildlife movement. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-5 THE PROJECT WOULD NOT CONFLICT WITH LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES. NO IMPACT WOULD OCCUR.

The site does not contain woodlands protected by the San Benito County Code Interim Woodlands Management Ordinance (Chapter 19.33). Additionally, the San Benito County Permanent Tree Protection (Section 25.29.210) does not apply to rural-zoned land. Under the San Benito County Code Chapter 19.19, the project would be required to pay mitigation fees for development within San Joaquin kit fox habitat, as described under Impact BIO-1, above (Appendix B). No impact would occur.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

No impact would occur.

Threshold 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?

Impact BIO-6 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD NOT CONFLICT WITH AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. NO IMPACT WOULD OCCUR.

The project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation agreement within the county. Therefore, no impact would occur.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

No impact would occur.

4.2.4 Cumulative Impacts

The geographic extent for the analysis of cumulative impacts associated with biological resources is the San Benito River watershed and open areas surrounding the project site. This extent is appropriate for cumulative impacts because the San Benito River and its tributaries are utilized by species such as CRLF and western pond turtle when sufficient water is present, and the surrounding open areas serve as dispersal and foraging habitat for CRLF, CTS, and numerous bird species.

Cumulative projects in this geographic extent are listed in Table 3-1 in Section 3, *Environmental Setting.* They include but are not limited to: the Fairview Corners residential development, Gavilan Community College San Benito Campus, Roberts Ranch subdivision, West of Fairview residential development, and Santana Ranch residential development. Construction of these cumulative projects would result in increased:

- Degradation of potential species habitats
- Degradation of wetlands, creeks, drainages, riparian habitat, water quality, associated habitat values and functions, and ecosystems services; including channelization of storm runoff that may increase stream flow, erosion, and sedimentation
- Disruption of wildlife utilization of biological resources for foraging; hydration; cover, shelter, aestivation/hybernacula; nesting and breeding; and movement, dispersal, and migration; including for CTS, CRLF, and sensitive bird species
- Loss of sensitive natural communities and listed plant species

The proposed project, and offsite area temporarily affected from grading and construction disturbance, in combination with other cumulative development in the vicinity of the project site, would significantly alter habitat in the area from the loss of upland habitat. Development of adjacent parcels and parcels in the vicinity would also remove vernal pools and aquatic habitat. Development of the site and adjacent areas would potentially impact sensitive species, if present in or closely adjacent to the project site, natural communities, and jurisdictional areas. These impacts would result in significant cumulative impacts without the application of appropriate mitigation and avoidance measures. However, impacts to biological resources would be considered and mitigated on a project-by-project basis. Permanent losses of sensitive habitats, including sensitive natural communities and listed species, associated with cumulative development would be mitigated to a less than significant level. Similarly, compliance with applicable federal, State, and local regulations relating to preservation of sensitive species in these areas, and adherence to the proposed mitigation measures outlined above for each of the project-specific potential impacts to biological resources would help ensure that each individual cumulative development would reduce impacts to biological resources to the extent feasible. As such, cumulative impacts would be less than significant with mitigation incorporated.

Mitigation measures for biological resources identified in this EIR would reduce project-level impacts to a less than significant level. Mitigation Measures BIO-1(a), BIO-1(d), BIO-1(e), and BIO-1(f) require pre-construction surveys and avoidance of CTS, CRLF, WST, western pond turtle, San Joaquin whipsnake, nesting birds, raptors, and San Joaquin kit fox, which would mitigate potential impacts to individuals of these species. Mitigation Measure BIO-1(b) requires implementation of a WEAP, which would provide construction personal with training to identify sensitive species and habitats during construction activities. Mitigation Measure BIO-1(c) requires general avoidance and minimization of construction activity impacts. Mitigation Measures BIO-3(a) and BIO-3(b) require wetland and drainage avoidance, and drainage mitigation to reduce potential wetland and drainage impacts from construction. These mitigation measures would reduce project-level impacts to a less than significant level, and would ensure that the project's contribution to cumulative biological resources impacts would not be cumulatively considerable.

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4.3 Cultural Resources

This section analyzes the proposed project's potential impacts related to cultural resources, including historical and archeological resources as well as human remains. The analysis in this section is based on Cultural Resources Studies prepared for the Lee Subdivision project by Rincon Consultants, Inc. in January 2022 and July 2023. The full analysis is provided in Appendix C and Appendix J of this EIR.

4.3.1 Setting

a. Natural Setting

The project site is located approximately 0.5 mile north of Highway 25 just southeast of Hollister, California, at an elevation ranging 146 to 162 meters (480 to 530 feet) above mean sea level. The project site is characterized by gently rolling hills and is surrounded to the west by residential development with various residential and agricultural use to the east, northwest, north, and south. The area retains some natural setting; however, the project site has been used for various agricultural purposes for numerous years, such as alfalfa cultivation and cattle grazing, as evidenced during Rincon's pedestrian survey of the project site (Montgomery et al. 2022). Geologically, the project site is underlain by Quaternary age alluvial terrace deposits (Dibblee and Minch 2006). Because alluvial sedimentation occurs at irregular intervals, the sudden burial of artifacts is possible, and alluvial soils have an increased likelihood of containing buried archaeological deposits (Waters 1992). However, although the geologic sediments within the project site consist of alluvium, the sediments date to the late Pleistocene Epoch, and therefore, predate human occupation during the Holocene Epoch.

b. Cultural Setting

Indigenous History

The project is located in the Central Coast region of California (Jones and Klar 2007). The Central Coast has been defined as extending from south of San Francisco Bay to the northern edge of the California Bight, at Point Conception in Santa Barbara County. The region extends inland to include the Central Coast Ranges west of the Central Valley (Jones et al. 2007:125). Following Jones et al. (2007:137), the prehistoric cultural chronology for the Central Coast can be generally divided into six periods: Paleo-Indian (ca. 10,000–8,000 BCE), Millingstone/Early Archaic (8,000-3,500 BCE), Early (3,500-600 BCE), Middle (600 BCE-1000 CE), Middle-Late Transition (1000-1250 CE), and Late (1250 CE-contact [ca. 1769 CE]).

Several chronological sequences have been devised to understand cultural changes along the Central Coast from the Millingstone period to European contact in the 1700s. Jones (1993) and Jones and Waugh (1995) presented a Central Coast sequence that integrated data from archaeological studies conducted since the 1980s. Three periods are presented in their prehistoric sequence subsequent to the Millingstone period: Early, Middle, and Late periods. More recently, Jones and Ferneau (2002:213) updated the sequence following the Millingstone period as follows: Early, Middle, Middle-Late Transition, and Late periods. The archaeology of the Central Coast subsequent to the Millingstone period is distinct from that of the Bay Area and Central Valley, and the region has more in common with the Santa Barbara Channel area during the Middle and Middle-Late Transition periods, but few similarities during the Late period (Jones and Ferneau 2002:213).

Paleo-Indian Period (ca. 10,000–8,000 BCE)

The Paleo-Indian Period economy is characterized by a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (Jones et al. 2002) and on Pleistocene lake shores in eastern California (Moratto 1984:90–92). Although few Clovis-like or Folsom-like fluted points have been found along the Central Coast, it is generally considered that the emphasis on hunting may have been greater during the Paleo-Indian period than in later periods.

Millingstone/Early Archaic Period (8,000–3,500 BCE)

The Millingstone/Early Archaic Period is characterized by an ecological adaptation to collecting suggested by the appearance and abundance of well-made milling implements. Millingstones occur in large numbers for the first time in the region's archaeological record and are even more numerous near the end of this period. Aside from millingstones, typical artifacts during this period include crude core and cobble-core tools, flake tools, large side-notched projectile points, and pitted stones (Jones et al. 2007). The Millingstone Period diet was relatively diverse, and included large amounts of shellfish, birds, mammals, fish, and seeds (Codding et al. 2010; Jones et al. 2002, 2007, 2008a, 2009).

Early Period (3,500–600 BCE)

Early Period sites within the Central Coast region provide evidence for continued exploitation of inland plants and coastal marine resources. An increase in the number of identified sites dating to this period suggests a population increase during this period (Codding et al. 2010). Artifacts include milling slabs and handstones, as well as mortars and pestles, which were used for processing a variety of plant resources. Bipointed bone gorge hooks were used for fishing. Assemblages also include a suite of *Olivella* beads, bone tools, and pendants made from talc schist. Square abalone shell (*Haliotis* spp.) beads have been found in Monterey Bay (Jones and Waugh 1997:122). Shell beads and obsidian are hallmarks of the trade and exchange networks of the central and southern California coasts. The archaeological record indicates that there was a substantial increase in the abundance of obsidian at Early Period sites in the Monterey Bay and San Luis Obispo areas (Jones and Waugh 1997:124–126). Obsidian trade continued to increase during the following the Middle Period.

Middle Period (600 BCE–1000 CE)

The Middle Period saw a pronounced trend toward greater adaptation to regional or local resources occurred during the Middle period. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in archaeological deposits along the coast. Related chipped stone tools suitable for hunting were more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive became common. Sites from this period show a retention of stemmed points and the disappearance of the larger side-notched points (Jones and Klar 2005; Jones et al. 2007).

Middle-Late Transition Period (1000–1250 CE)

The Middle-Late Transition (MLT) Period is marked by relative instability and change, with major changes in diet, settlement patterns, and interregional exchange. The relatively ubiquitous Middle Period shell midden sites found along the Central Coast were abandoned by the end of the Middle-Late Transition Period, so most Transition and Late Period sites were first occupied during those periods (Jones and Ferneau 2002:213, 219). MLT site assemblages include the adoption of smaller projectile points and the addition of fishhooks (Codding et al. 2010).

Late Period (1250 CE–contact)

Late Period sites are marked by small, finely worked projectile points, such as Desert side-notched and Cottonwood points, as well as temporally diagnostic shell beads. The small projectile points are associated with bow and arrow technology and indicate influence from the Takic migration from the deserts into southern California. Common artifacts identified at Late Period sites include bifacial bead drills, bedrock mortars, hopper mortars, lipped and cupped *Olivella* shell beads, and steatite disk beads. The presence of beads and bead drills suggests that low-level bead production was widespread throughout the Central Coast region (Jones et al. 2007). Late Period sites are most often single component-sites and most frequently identified in inland areas, with less sites identified on the coast (Codding et al. 2010).

Post-Contact Setting

Post-European contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present).

Spanish Period (1769–1822)

Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). In 1769, Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá. This was the first of 21 missions erected by the Spanish between 1769 and 1823. It was during this time that initial Spanish settlement of the project vicinity began.

In November of 1795, Friar Danti and Lieutenant Hemenegildo Sal led a party out of Monterey into the San Benito Valley to identify locations for a new mission. The party found two suitable locations, one on the San Benito River and the other near the present town of Gilroy. After much deliberation, the site on the San Benito River was chosen and on June 24, 1797, Mission San Juan Bautista was founded (Barrows and Ingersoll 1893:128). The site is located approximately eight miles west of the present city of Hollister, near the Mutsun Costanoan village of *Popeloutchom* (Pentacle Press 2013). Historic records indicate 958 (530 male and 428 female) Indian neophytes were at the mission in 1802. The records also indicate that within 3.5 years of its founding the mission baptized nearly 650 Indians and had 23 rancherias (Indian villages) under its sphere of influence. During intervening years since its founding, the mission flourished and by 1820 boasted a population of about 1,000, mostly Christianized, native inhabitants, over 40,000 head of cattle, nearly 1,400 tame horses, and 70,000 head of sheep (Barrow and Ingersoll 1893). However, mission influence in the region began to wane when calls for the secularization of mission lands in California were enacted by the newly formed Mexican Republic.

Mexican Period (1822–1848)

The Mexican Period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period saw the privatization of mission lands in California with the passage of the Secularization Act of 1833. This Act enabled Mexican governors in California to distribute mission lands to individuals in the form land grants. Successive Mexican governors made more than 700 land grants between 1822 and 1846, putting most of the state's lands into private ownership for the first time (Shumway 2007).

San Benito County saw more than 14 land grants (ranchos) during this period. One of them, San Justo land grant, was conferred to Jose Castro in 1839 by Governor Juan B. Alvarado and consisted of 34,620 acres. Castro held the land until 1850 when he sold it to Francisco Perez Pacheco for the sum of $1,400 (San Benito County Historical Society 2013). The presence of so many ranchos in the county kept the land rural to serve as grazing land for livestock and would remain so until the American Period.

American Period (1848–Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. Settlement within California increased dramatically during the American Period with the discovery of gold in the Sierra Nevada range in 1848 which led to the California Gold Rush (Workman 1935:26). This period saw many ranchos in California sold or otherwise acquired by Americans and the land subdivided into agricultural parcels or towns.

The San Justo rancho was no exception; in 1855 Flint-Bixby and Company, consisting of Dr. Thomas Flint, his brother Benjamin Flint, and their cousin Llewellyn Bixby, bought the rancho from Francisco Perez Pacheco for the sum of $25,000 with the understanding that Colonel William Welles Hollister would buy one half of the interest in the rancho in 1857. The rancho was held jointly for three years until it was divided in 1861. The partnership soon dissolved however, with Flint taking all land east of the San Benito River and Hollister taking all land to the west. Later, Hollister protested the split of assets which was resolved by swapping lands and Hollister paying Flint $10,000. In 1868, Hollister sold his part of the rancho, approximately 20,773 acres, to the San Justo Homestead Association for the sum of $370,000. The association promptly divided the property into 50 homestead lots of approximately 172 acres each and reserved about 100 acres for the newly formed town of Hollister. In 1870, the Southern Pacific Railroad laid track from Carnardero (three miles south of Gilroy) to Hollister, which was then extended to Tres Pinos in 1873 (San Benito County Historical Society 2013).

San Benito County

The rapid settlement of the San Benito Valley and surrounding areas during the 1800s prompted a desire by local residents to create a more local government. Up to this point, the region was part of Monterey County but distance and the presence of the Gabilan range provided enough barriers to prompt a political division from the rest of the county. The separation movement began as early as 1869 and on February 12, 1874, the new County of San Benito was established with Hollister serving as the county seat. The county grew so quickly that in 1887 additional acreage, including the New

Idria Silver mines, were acquired from Merced and Fresno counties. Since 1887, the boundaries of San Benito County have not changed, encompassing an 893,440-acre area. Since 1880, the population increased from 1,000 to more than 50,000 today. The primary industry in the county is agriculture with hay production playing a prominent role (Barrows and Ingersoll 1893; San Benito County 2013).

c. Existing Conditions

Rincon Consultants, Inc. completed the original cultural resources investigation of the project site in February 2022 (Appendix C). The investigation consisted of a California Historical Resources Information System (CHRIS) records search of the project site as well as a 0.5-mile radius around the project site at the Northwest Information Center (NWIC), a review of the Sacred Lands File (SLF), Native American and local historical group outreach, pedestrian field surveys and the preparation of a cultural resources report.

The NWIC records search identified no previously recorded cultural resources within the project site or within a 0.5-mile radius of the project site. The results of the SLF search were negative for the presence of Native American cultural resources.

No historical or archaeological resources were identified within the project site during the field survey. In addition to the absence of surficial cultural resources identified during the survey, a high level of disturbance within the project site was identified, including tilling and grading, excavation, and construction of existing utilities and two buildings. As there is a high level of ground disturbance within the project site, as well as no previously recorded resources within the project site or vicinity, the archaeological sensitivity of the project site is considered low.

In July 2023, Rincon conducted a supplemental cultural resources investigation to address the potential impacts to an additional area along the northeastern edge of the original project site boundary. The investigation relied on the previous CHRIS search and SLF search results. However, a pedestrian field survey was conducted of the additional area and a letter report, included as Appendix J, was prepared to summarize the results of the supplemental investigation. No historical or archaeological resources were identified in the additional portion of the project site as a result of the supplemental investigation and, similar to the rest of the project site, the additional area was disturbed due to agricultural activities.

4.3.2 Regulatory Setting

This section includes a discussion of the applicable federal, State, and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during implementation of the proposed project.

a. Federal

National Register of Historic Places

Authorized by Section 101 of the National Historic Preservation Act, the National Register of Historic Places (NRHP) is the nation’s official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 CFR Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Are associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: Are associated with the lives of persons significant in our past.

Criterion C: Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, defined in the following manner:

Location: The place where the historic property was constructed or the place where the historic event occurred.

Design: The combination of elements that create the form, plan, space, structure, and style of a property.

Setting: The physical environment of a historic property.

Materials: Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

Workmanship: The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

Feeling: A property's expression of the aesthetic or historic sense of a particular period of time.

Association: The direct link between an important historic event or person and a historic property.

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The National Park Service states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluate significance (National Park Service 1997:41). Properties which are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

b. State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (Public Resources Code [PRC] Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, as enumerated according to CEQA and quoted below.

> 15064.5(a)(3) […] Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (PRC, § 5024.1, Title 14 California Code of Regulations, Section 4852) including the following:
>
> (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
>
> (2) Is associated with the lives of persons important in our past
>
> (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
>
> (4) Has yielded, or may be likely to yield, information important in prehistory or history
>
> 15064.5(a)(4) The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.
>
> 15064.5(b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

In addition, if a project can be demonstrated to cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b], and [c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it does one or more of the following:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion or eligibility for inclusion in the CRHR (*CEQA Guidelines* Section 15064.5[b][2][A]).

Codes Governing Human Remains

The disposition of human remains is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the PRC and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

c. Local

San Benito County 2035 General Plan

The Natural and Cultural Resources Element of the San Benito County 2035 General Plan contains one goal and several associated policies that specifically address historic and archaeological resources, provided below. The 2035 General Plan aims to protect, preserve, and enhance the valuable cultural and historic resources that are vital to the character of the county.

Goal NCR-7 To protect, preserve, and enhance the unique cultural and historic resources in the county.

NCR-7.9 **Tribal Consultation.** The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

NCR-7.11 **Prohibit Unauthorized Grading.** The County shall prohibit unauthorized grading, collection, or degradation of Native American, tribal, archaeological, or paleontological resources, or unique geological formations.

NCR-7.12 **Archaeological Artifacts.** The County shall require an archaeological report prior to the issuance of any project permit or approval in areas determined to contain significant historic or prehistoric archaeological artifacts and when the development of the project may result in the disturbance of the site. The report shall be written by a qualified cultural resource specialist and shall include information as set forth in the county's archaeological report guidelines available at the County Planning Department.

San Benito County Code of Ordinances

Chapter 19.05: Archaeological Site Review of the San Benito County, California – Code of Ordinances, establishes regulations addressing archaeological sites. The standards that are particularly pertinent to the project are listed below.

Section 19.05.001 Declaration of Purpose

This section affirms San Benito County's policy of preserving the historical identity and integrity of the county and establishes regulations for the protection, enhancement, and perpetuation of archaeological sites in order to promote the public welfare, implement 2035 General Plan policy, and implement state law.

Section 19.05.003 Prohibitions

This section establishes prohibitions for any person to knowingly disturb, cause to be disturbed, excavate, or cause to be excavated, any archaeological site without, or in violation of, a permit, except as provided in Section 19.05.007.

Section 19.05.004 Fraudulent Transfers

It is unlawful for any person to place, install, plant, or otherwise transfer to any property any artifacts, remains or other evidence, whether real or manufactured, of an archaeological site for the purpose of requiring the property owner to comply with the provisions of this chapter.

Section 19.05.005 Project Review and Archaeological Assessments

Any application for a discretionary project which will result in ground disturbance must complete an archaeological survey and record search. If the archaeological survey shows the project contains a site of cultural significance, and further development will result in site disturbance, an archaeological report must be prepared by the property owner. A qualified archaeologist shall prepare the report according to the County's archaeological report guidelines.

Section 19.05.006 Project Approval

If an archaeological site is discovered during the review of a proposed project, any permit subsequently issued should contain conditions based on the archaeological report in consultation with the NAHC. This section also contains conditions to include such as preservation and mitigation measures, including preservation of a site through project design modifications, covering an archaeological site at a depth to prevent future disturbance, and excavation by a professional archaeologist.

Section 19.05.007 Site Discovered During Excavation or Development

This section describes actions to be taken by a property owner who discovers human remains of any age or other significant artifacts or sites during any part of the process of preparing, excavating, or disturbing the ground. Actions include:

1. Immediately halt all work within 200 feet of the discovery.
2. Stake around discovery with visible stakes no more than 10 feet apart, a circle with radius no less than 100 feet, keeping stakes off adjoining property unless adjoining property owner agrees.

3. Notify Sheriff Coroner and Planning Director of the discovery of human and/or questionable remains.
4. Grant all duly authorized representatives of the coroner and the Planning Director permission to enter onto the property and take actions consistent with codified law.

Further actions include a property inspection, notifying the NAHC, a determination if development can resume, a determination of cultural significance, and the creation of a report and records of the finding to be submitted to the California Archaeological Inventory.

Section 19.05.008 Issuance of Site Development Approval

This section states that if the site is determined to be culturally significant, the Planning Director shall give notice to the property owner to require an archaeological site development approval prior to resumption of excavation. The archaeological site development approval shall be reviewed and issued by the Planning Director or designee. The property owner, the NAHC and a representative of the most likely descendants of the local Native American groups shall be given notice of the hearing for archaeological site development approval.

4.3.3 Impact Analysis

a. Methodology and Significance Thresholds

If a project may cause a substantial adverse change in the characteristics of a resource that convey its significance or justifies its eligibility for inclusion in the CRHR or a local register, either through demolition, destruction, relocation, alteration, or other means, then the project would have a significant effect on the environment (*CEQA Guidelines* Section 15064.5[b]). Impacts would be significant if the project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.
3. Disturb any human remains, including those interred outside of formal cemeteries.

Direct impacts can be assessed by identifying the types and locations of proposed development, determining the exact locations of cultural resources within the project area, assessing the significance of the resources that may be affected, and determining the appropriate mitigation. Removal, demolition, or alteration of historical resources can permanently impact the historic significance of an archaeological site, structure, or historic district.

The State Legislature, in enacting the CRHR, amended CEQA to clarify which properties are significant, as well as which project impacts are considered significantly adverse. A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have significant effect on the environment (*CEQA Guidelines* §150645[b]). A substantial adverse change in the significance of a historical resource means demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (*CEQA Guidelines* §150645[b][1]).

The *CEQA Guidelines* further state that “[t]he significance of an historical resource is materially impaired when a project… [d]emolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in the California Register … local register of historic resources… or its identification in an historic resources survey." As such, the test for determining whether the project would have a significant impact on identified historic resources is whether it would materially impair physical integrity of the historic resource such that it could no longer be listed in the CRHR or a local landmark program.

b. Project Impacts and Mitigation

Threshold 1:	Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Impact CUL-1 THE PROJECT WOULD NOT CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORIC RESOURCE, AS THERE ARE NO SUCH RESOURCES ON THE PROJECT SITE. THERE WOULD BE NO IMPACT.

The project would not cause impacts to historical resources. For the purposes of this analysis, historical resources include buildings, structures, and objects over 45 years of age that have been listed in, or found eligible for, the NRHP, CRHR, or a local register. CEQA and local regulations do not specify an age threshold for historical resources. However, guidance from the State Office of Historic Preservation (OHP) recommends that "sufficient time"—typically 50 years—"must have passed to obtain a scholarly perspective" necessary to evaluate the significance of the historical events with which a property is associated (State of California 2022). A threshold of 45 years is recommended because there is often "a five-year lag between resource identification and the date that planning decisions are made" (State of California 1995).

The existing barn on the project site was built between 1980 and 1981, and the existing residence was built between 2005 and 2009. Therefore, neither building meets the 45-year age threshold generally triggering the need for historical resources evaluation per OHP guidance. As such, the buildings are presumed not to qualify as historical resources pursuant to CEQA. There would be no impact to historical resources.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

There would be no impact.

Threshold 2:	Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Impact CUL-2 GRADING AND EXCAVATION REQUIRED FOR THE PROPOSED PROJECT WOULD HAVE THE POTENTIAL TO UNEARTH AND ADVERSELY CHANGE OR DAMAGE PREVIOUSLY UNIDENTIFIED ARCHAEOLOGICAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

According to the California Office of Historic Preservation, any physical evidence of human activities over 45 years of age can be recorded and evaluated for consideration as historical resources (California Office of Historic Preservation 1995). This includes not only buildings, but also structures, objects, sites, and districts.

The results of the NWIC records search and SLF search did not identify any previously recorded archaeological resources within the project site or a 0.5-mile radius. Similarly, no archaeological resources were observed during the pedestrian field surveys of the project site. Background research conducted for the project indicates that the project site has been highly disturbed due to tilling and grading, excavation, and construction of existing utilities and only two buildings, which are modern.

Given the negative results of the records search for prehistoric and historic archaeological resources and the level of previous disturbance, the project site is considered to have low archaeological sensitivity. However, it is possible that unanticipated archaeological deposits could be encountered and damaged during the ground-disturbing activities associated with construction (such as grading and excavation for utilities), especially if those activities occur in less-disturbed buried sediments. Off-site ground disturbance associated with wastewater infrastructure improvements could result in unanticipated discoveries of archaeological resources.

Unanticipated discoveries have specific provisions for treatment in Chapter 19.05 the San Benito County Code of Ordinances. Specifically, Section 19.05.007(A) states that, should any significant artifact or other evidence of an archaeological site be encountered, all excavation and disturbances within 200 feet of the discovery shall cease and desist. The area around the discovery must be cordoned off using visible stakes no more than 10 feet apart, having a radius of no less than 100 feet from the point of discovery. The Planning Director will be notified of the discovery and, if the discovery involves human remains, will then arrange for an inspection of the property and notify the coroner as well as the NAHC. If the discovery proves to be a culturally significant site, the site must be recorded, and an archaeological report will be prepared and completed within 90 days.

Compliance with Chapter 19.05 of the San Benito County Code of Ordinances would reduce impacts to cultural resources, including archaeological resources. However, while the ordinances address actions to be taken by a property owner who discovers significant artifacts or sites during ground disturbance to an extent, there is still the potential for the project to impact unanticipated cultural resources because the ordinances do not address what may happen to a site or artifact after it is evaluated. Therefore, after a site or artifact is evaluated, the ordinances do not prohibit causing a substantial adverse change to the significance of the site or artifact, and mitigation is required to reduce this potentially significant impact.

Mitigation Measure

CUL-2 Unanticipated Discovery of Archaeological Resources

If work is halted due to an unanticipated discovery, consistent with Chapter 19.05 of the San Benito County Code, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology (National Park Service 1983) shall be contacted immediately and retained to evaluate the find. In addition to recording the site and preparing an archaeological report (as required per Chapter 19.05), the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the proposed project, additional work, such as data recovery excavation, may be warranted, at the recommendation of the professional archaeologist. If archaeological resources of Native American origin are identified during project construction, a qualified archaeologist will consult with the County to begin Native American consultation procedures.

Significance After Mitigation

By implementing Mitigation Measure CUL-2, the County would evaluate and require steps to protect or treat significant archaeological resources if encountered during construction, resulting in a less than significant impact.

Threshold 3:	Would the project disturb any human remains, including those interred outside of formal cemeteries?

Impact CUL-3 GRADING AND EXCAVATION REQUIRED FOR THE PROPOSED PROJECT WOULD HAVE THE POTENTIAL TO UNEARTH AND DISTURB PREVIOUSLY UNIDENTIFIED OR UNKNOWN HUMAN REMAINS. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MANDATORY ADHERENCE TO EXISTING REGULATIONS PERTAINING TO DISCOVERY OF HUMAN REMAINS.

The SLF search for the project was returned with negative results for the presence of Native American sacred lands and the NWIC records search did not identify any known cemeteries or burial sites within the project site or 0.5-mile radius of the project. However, there is always potential for previously unrecorded or unidentified human remains to exist below ground surface. Construction of the project would require grading and excavation. Grading and excavation activities would have the potential to unearth and disturb previously unidentified human remains, if present. Off-site ground disturbance associated with wastewater infrastructure improvements could result in unanticipated discoveries of human remains.

Human burials have specific provisions for treatment in Chapter 19.05 of the San Benito County Code of Ordinances and PRC Section 5097. Additionally, California Health and Safety Code Sections 7050.5, 7051, and 7054 contain specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains and protects them from disturbance, vandalism, or destruction. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and establishes the NAHC as the entity to resolve any related disputes.

If human remains are found, California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, Section 19.05.007(A) of the San Benito County Code of Ordinances requires that all excavation cease within 200 feet of the find. The County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a most likely descendant (MLD). The MLD must complete the inspection of the site within 48 hours of being granted access to the site and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with the San Benito County Code of Ordinances, PRC Section 5097.98 and California Health and Safety Code Section 7050.5 would ensure impacts to unknown human remains are less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.3.4 Cumulative Impacts

The proposed project, in conjunction with other nearby past, present, and reasonably foreseeable probable future projects in the region as listed in Table 3-1 in Section 3, *Environmental Setting*, could adversely impact cultural resources. Cumulative development within the vicinity of the project site would continue to disturb areas with the potential to contain historical resources, archaeological resources, and human remains. For other developments that would have significant impacts on cultural resources, similar conditions and mitigation measures described herein would be imposed on those other developments consistent with the requirements of CEQA, along with requirements to comply with all applicable laws and regulations governing said resources.

As described under Impact CUL-1, the project would not result in impacts to historical resources, including built environment historical resources, as no known historical resources have been identified in the project site. Future projects would be reviewed separately by the appropriate jurisdiction and undergo environmental review when it is determined that the potential for significant impacts exists. In the event that future cumulative projects would result in impacts to previously unknown historical resources, impacts to such resources would be addressed on a case-by-case basis, and appropriate mitigation measures developed. Because of the lack of known historical resources on the project site or in the immediate vicinity, the project's contribution to cumulative impacts to historical resources would not be cumulatively considerable.

Cumulative development could impact known or unknown archaeological resources, and archaeological resources that may be considered historical resources. This would be a potentially significant cumulative impact. However, cumulative projects would undergo project-specific environmental review when it is determined that the potential for significant impacts exists. If future cumulative projects would result in impacts to known or unknown cultural resources, impacts to such resources would be addressed on a case-by-case basis and would likely be subject to mitigation measures similar to those imposed for the proposed project. As such, cumulative impacts would be less than significant with mitigation. A described under Impact CUL-2, Mitigation Measure CUL-2 would ensure that project-level impacts to unknown resources are adequately mitigated. After implementation of Mitigation Measure CUL-2, the project's contribution to cumulative impacts to archaeological resources would not be cumulatively considerable.

Cumulative projects listed in Table 3-1 would involve ground-disturbing activities which could encounter human remains. If human remains are found, the cumulative projects would be required to comply with the State of California Health and Safety Code Section 7050.5, as described for the proposed project under Impact CUL-3, above. With adherence to existing regulations relating to human remains, cumulative impacts would be less than significant and the proposed project's contribution would not be cumulatively considerable.

4.4 Geology and Soils

This section addresses the proposed project's potential impacts related to geology and soils. Specifically, this analysis addresses impacts related to risks from earthquakes, fault ruptures, seismicity, landslides, and soil erosion. This section also addresses potential impacts to paleontological resources.

This section is based on a geotechnical investigation performed by Stevens Ferrone & Bailey Engineering Company, Inc. (SFB) in April 2020 (Appendix E). This section is also based on a surface fault-rupture hazard investigation performed by Berlogar Stevens & Associates (BSA) in March 2020, which was reviewed by certified engineering geologists at Earth Systems Pacific in April 2020 (Appendix F).

4.4.1 Setting

a. Topography and Soils

The project site encompasses 33.4 acres and slopes downward toward the drainage channel located adjacent to the site to the east. Slopes vary from approximately 5 to 9 percent within the site (Appendix E). The site ranges in elevation from approximately 535 feet above mean sea level near the center of the site to approximately 520 feet above mean sea level near the drainage channel.

The predominant soil type at the project site is Rincon silt clay loam, which is present in approximately 80 percent of the site. San Benito clay loam is present in approximately 20 percent of the site (NRCS 2021). These soils are soft, clayey, well-drained, and underlay the site at depths of approximately one to three feet. Beneath the soil is dense clayey sands and silty gravel (Appendix E).

b. Seismicity and Seismic-Related Hazards

The site is located in the San Benito Valley which is considered one of the most seismically active regions in the United States. Substantial earthquakes have occurred in the area and are believed to be associated with crustal movements along a system of northwesterly sub-parallel fault zones. The project site is in an area characterized by moderate to high seismic activity, as the east branch of the Calaveras Fault lies approximately two miles southwest of the site and the San Andreas Fault lies approximately five miles southwest of the site. Additionally, the Tres Pinos Fault runs approximately 1,000 feet south of the project site and terminates in the southeast corner of the site (Appendix F). The center of the project site is within an Alquist-Priolo Earthquake Fault Zone (Appendix E). However, based on subsurface explorations, the potential for ground surface rupture within the project site is low (Appendix F).

Due to the proximity of these active faults, seismic ground shaking is a possibility at the project site. Fault displacement can generate seismic ground-shaking, which is the greatest cause of widespread damage in an earthquake. Whereas surface rupture affects a narrow area above an active fault, ground-shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater.

c. Soil Hazards

Liquefaction occurs when water-saturated soils lose structural integrity due to seismic activity. Soils that are most susceptible to liquefaction are loose to moderately dense, saturated granular soils with poor drainage. Lateral spreading occurs as a form of horizontal displacement of flat-lying alluvial material. The potential for liquefaction and lateral spreading at the project site is very low (Appendix E).

Expansive soils tend to swell with increases in soil moisture and shrink as the soil moisture decreases. For example, expansive soils could swell during and hours after a precipitation event but then shrink in the following weeks if no additional precipitation occurs. Shrinking and swelling of soils can cause damage to building foundations, roads and other structures. The Rincon silt clay loam and the San Benito clay loam on the project site were found to be moderately to highly expansive and are subject to volume changes during seasonal moisture content fluctuations. Localized pockets of critically expansive clays are also present on-site (Appendix E).

d. Paleontological Resources

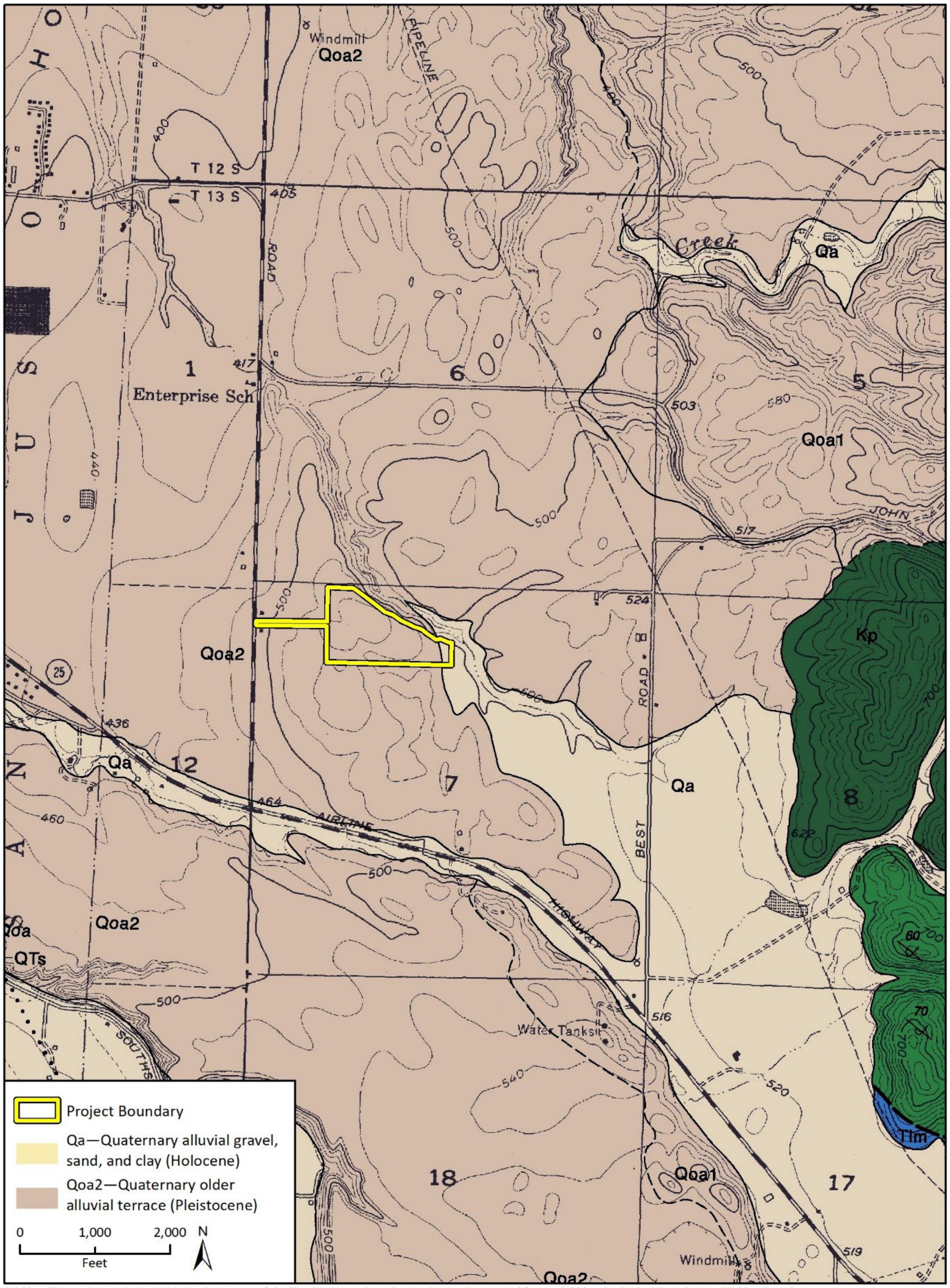
Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources occur within bedrock geologic deposits that underly the soil layer and are almost exclusively preserved in sedimentary rocks; however, in rare cases, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions. The Society of Vertebrate Paleontology (SVP) has defined fossils as being remains or traces of plants and animals that are greater than 5,000 years old (i.e., older than middle Holocene in age) (2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors.

The project site is in the San Benito Valley within the Coast Range geomorphic province, one of the 11 geomorphic provinces of California (California Geological Survey [CGS] 2002). The Coast Ranges are composed of Mesozoic and Cenozoic sedimentary, igneous, and metamorphic strata. The eastern side is characterized by strike-ridges and valleys in the Upper Mesozoic strata.

Quaternary alluvial gravel, sand, and clay (Qa) underlies the eastern part of the project site. Sediments identified as Qa are found in valleys throughout the region, especially near Tres Pinos Creek and the San Benito River (Dibblee and Minch 2006). The proximity of Pleistocene-aged units (i.e., Qoa2) to areas mapped as Qa in the project site suggests that Qoa2 may underlie surface Qa deposits at shallow depth. Further, most of the project site is underlain by a Quaternary older alluvial terrace (Qoa2). Qoa2 consists of late Pleistocene-aged alluvial gravel and sand (Dibblee and Minch 2006).

The region surrounding the project was mapped at a scale of 1:24,000 by Dibblee and Minch (2006), who mapped two geologic units underlying the project site (Figure 4.4-1): Quaternary alluvial gravel, sand, and clay (Qa); and Quaternary older alluvial terrace (Qoa2).

Figure 4.4-1 Geologic Map of the Project Site



Dibblee, T.W. and J.A. Minch. 2006. Geologic map of the Tres Pinos quadrangle, San Benito County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-232, scale 1:24,000.

4.4.2 Regulatory Setting

a. Federal

Clean Water Act

Congress enacted the Clean Water Act (CWA), formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs). San Benito County encompasses watersheds that are administered by the North Coast RWQCB and the Central Valley RWQCB. Individual projects within the County that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit).

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMP) the discharger would use to prevent and retain stormwater runoff and to prevent soil erosion. The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs the discharger would use to protect stormwater runoff and the placement of those BMPs. The SWPPP must contain a visual monitoring program, and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

Society of Vertebrate Paleontology

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Sensitivity is determined by rock type, history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The Society of Vertebrate Paleontology (SVP) outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The paleontological sensitivity of geologic units underlying the project site has been evaluated according to the following SVP (2010) categories:

- **High Potential:** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils.

- **Low Potential:** Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic (processes affecting an organism following death, burial, and removal from the ground), phylogenetic species (evolutionary relationships among organisms), and habitat ecology.
- **Undetermined Potential:** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.
- **No Potential:** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

b. State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (A-P Act) was passed into law following the destructive February 9, 1971, magnitude 6.6 San Fernando earthquake. The A-P Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the A-P Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The A-P Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

California Building Code

The California Building Code (CBC), Title 24, Part 2 provides building codes and standards for the design and construction of structures in California. The CBC requires, among other things, seismically resistant construction and foundation and soil investigations prior to construction. The CBC also establishes grading requirements that apply to excavation and fill activities, and requires the implementation of erosion control measures. California's building codes are updated in their entirety every three years. The 2019 California Building Standards Code, California Code of Regulations, and Title 24 were approved and adopted by the California Building Standards Commission in December 2019. The 2019 CBC is based on the 2015 International Building Code with the addition of more extensive structural seismic provisions. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures.

The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. In addition, the CBC contains necessary California amendments, which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements of the CBC consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC. Part 2, Volume 2, Chapter 18, Soils and Foundations, of the CBC outlines the minimum standards for structural design and construction. This includes geotechnical evaluations, which among other requirements, includes a record of the soil profile, regulation of active faults in the area, recommendations for foundation type and design criteria that address issues, as applicable, such as (but not limited to) bearing capacity of soils, provisions to address expansive soils, settlement, and varying soil strength. If a building department or other appropriate enforcement agency, determines that recommended action(s) presented in the geotechnical evaluations are likely to prevent structural damage, the approved recommended action(s) must be made a condition to the building permit (Section 1803.1.1.3 of Chapter 18).

The CBC provides standards for various aspects of construction, including but not limited to excavation, grading, and earthwork construction, preparation of the site prior to fill placement, specification of fill materials and fill compaction and field testing, retaining wall design and construction, foundation design and construction, and seismic requirements. It includes provisions to address issues such as (but not limited to) construction on expansive soils and soil strength loss. The California Code of Regulations requires that project design and construction comply with provisions of the CBC.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) addresses geo-seismic hazards, other than surface faulting, and applies to public buildings and most private buildings intended for human occupancy. SHMA identifies and maps seismic hazard zones to assist cities and counties in preparing the safety elements of their general plans and encourages land use management policies and regulations that reduce seismic hazards. SHMA mandated the preparation of maps delineating "Liquefaction and Earthquake-Induced Landslide Zones of Required Investigation."

California Public Resources Code

Section 5097.5 of the California Public Resource Code (PRC) states "no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface" any "vertebrate paleontological site" on public lands without the "permission of the public agency having jurisdiction over such lands." Violation of this section is a misdemeanor.

As used in this PRC 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. Consequently, public agencies are required to comply with PRC Section 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

c. Local

San Benito County 2035 General Plan

The 2035 General Plan Land Use Element, Circulation Element, and Health and Safety Element provide the following goals, policies and objectives pertaining to geology and soils that are relevant to this analysis.

Land Use Element

LU-1.6 **Hillside Development Restrictions.** The County shall prohibit residential and urban development on hillsides with 30 percent or greater slopes.

LU-1.8 **Site Plan Environmental Content Requirements.** The County shall require all submitted site plans, tentative maps, and parcel maps to depict all environmentally sensitive and hazardous areas, including: 100-year floodplains, fault zones, 30 percent or greater slopes, severe erosion hazards, fire hazards, wetlands, and riparian habitats.

LU-1.10 **Development Site Suitability.** The County shall encourage specific development sites to avoid natural and manmade hazards, including, but not limited to, active seismic faults, landslides, slopes greater than 30 percent, and floodplains. Development sites shall also be on soil suitable for building and maintaining well and septic systems (i.e., avoid impervious soils, high percolation or high groundwater areas, and provide setbacks from creeks). The County shall require adequate mitigation for any development located on environmentally sensitive lands (e.g., wetlands, erodible soil, archaeological resources, important plant and animal communities).

Circulation Element

C-1.19 **Avoid Hazardous Areas.** The County shall ensure that road development is minimized in hazardous areas (e.g. faults, flood plains, landslide areas, fire hazard areas) and that, if a hazard is present within a planned road alignment, the planned alignment is modified to the extent feasible to avoid the hazard.

Healthy and Safety Element

Goal HS-3 To protect lives and property from seismic and geologic hazards.

HS-3.2 **Subsidence or Liquefaction.** The County shall require that all proposed structures, utilities, or public facilities within recognized near-surface subsidence or liquefaction areas be located and constructed in a manner that minimizes or eliminates potential damage.

HS-3.6 **Unstable Soils.** The County shall require and enforce all standards contained in the current California Building Code related to construction on unstable soils and shall make a determination as to site suitability of all development projects during the building permit review process. The County shall not approve proposed development sited within areas of known or suspected instability until detailed area studies are completed that evaluate the extent and degree of instability and its impact on the overall development of the area.

HS-3.7 **Setback from Fault Traces.** The County shall require setback distances from fault traces to be determined by individual site-specific surface rupture investigations.

HS-3.8 **Liquefaction Studies.** The County shall require proposals for development in areas with high liquefaction potential to include detailed site-specific liquefaction studies.

San Benito County Code of Ordinances

The County's Code contains several regulations and standards implementing the 2035 General Plan policies identified above that address geology and soils. Building plans for the project site would be reviewed for consistency with the following ordinances.

Chapter 19.17: Grading, Drainage and Erosion Control

This chapter regulates excavation, grading, drainage and erosion control measures and activities. The purpose of these regulations is to minimize erosion, protect fish and wildlife, and to otherwise protect public health, property, and the environment. A grading permit is required for all activities that would exceed 50 cubic yards of grading. Grading activity is prohibited within 50 feet from the top of the bank of a stream, creek, or river, or within 50 feet of a wetland or body of water to protect riparian areas. Additionally, development is limited in areas of high landslide potential and slopes greater than 30 percent, unless approved under special conditions. All proposed developments are required to submit an erosion control plan and drainage plan prior to issuance of a grading permit.

Chapter 21.01: Building Regulations Ordinance

This chapter adopts, with modifications pertaining to local conditions, the provisions of the CBC. As stated above, the CBC requires, among other things, seismically resistant construction and foundation and soil investigations prior to construction. The CBC also establishes grading requirements that apply to excavation and fill activities and requires the implementation of erosion control measures. The County is responsible for enforcing the CBC in the case of the project.

Chapter 23.25: Design Requirements

This chapter regulates road standards designed to minimize on-site hazardous geological or soil conditions and to provide erosion control measures regarding excavation, grading, and drainage.

Chapter 23.31, Article III. Storm Drainage Design Standards

This article implements 2035 General Plan policies pertaining to the prevention of erosion caused by flooding.

Chapter 25.14, Article V. Seismic Safety Division

Section 25.14.081 forbids the placement of a building used for human occupancy across an active fault trace. Further, the area within 50 feet of an active fault trace is "assumed to be underlain by active branches of that fault trace unless and until proven otherwise by an appropriate geological investigation and submission of a report by a geologist registered in the State of California."

4.4.3 Impact Analysis

a. Methodology and Thresholds of Significance

Based on the environmental checklist included in Appendix G of the *CEQA Guidelines*, impacts would be considered potentially significant if the proposed project would:

1. 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;
   ii. Strong seismic ground shaking;
   iii. Seismic-related ground failure, including liquefaction; and
   iv. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. 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. 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. 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.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

b. Project Impacts and Mitigation Measures

Threshold 1i:	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?

Impact GEO-1 **A PORTION OF THE PROJECT SITE IS UNDERLAIN BY THE TRES PINOS FAULT. COMPLIANCE WITH A BUILDING EXCLUSION ZONE IN THIS AREA WOULD ENSURE IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

As described above in Section 4.4.1, *Setting*, the project site is known to be within an Alquist-Priolo Earthquake Fault Zone. CGS maps indicate that the Tres Pinos Fault runs north and terminates in the center of the project site. However, as described in the surface fault-rupture hazard investigation (BSA 2020; Appendix F), the Tres Pinos fault does not traverse the project site as mapped. In 1989, Terratech conducted seven exploratory trenches for the property adjacent to the project site to the south, which indicated that the fault veers to the northeast to travel through the southeast corner of the project site. A trench located approximately 30 feet south of the project site revealed two to five fault traces generally trending north. Subsurface explorations performed by BSA confirmed that the Tres Pinos fault does not cross into the project site as mapped by CGS and there is a low probability of surface fault rupture (Appendix F). The surface fault-rupture hazard investigation

(Appendix F) recommends a building exclusion zone located in the southeast corner of the site, as shown in Figure 2-3 in Section 2, *Project Description*. This building exclusion zone has been incorporated into project design. As shown in Figure 2-3 in Section 2, *Project Description,* the proposed project does not propose any structures to be located within this building exclusion zone and would develop the area as a public park.

The Tres Pinos Fault does not traverse the site as mapped by CGS, and subsurface investigations determined that the potential for ground surface rupture within the project site is low (BSA 2020; Appendix F). Further, residences would be designed to comply with seismic safety standards established by the CBC, which would reduce and minimize risk to project inhabitants in the event of fault rupture. The project would locate people within an Alquist-Priolo Earthquake Fault Zone. Therefore, the project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 1ii:	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Impact GEO-2 SEISMICALLY INDUCED GROUND-SHAKING COULD DESTROY OR DAMAGE RESIDENCES AND INFRASTRUCTURE, RESULTING IN LOSS OF PROPERTY OR RISK TO HUMAN SAFETY. MANDATORY COMPLIANCE WITH APPLICABLE CALIFORNIA BUILDING CODE REQUIREMENTS AND IMPLEMENTATION OF GEOTECHNICAL RECOMMENDATIONS WOULD RENDER IMPACTS LESS THAN SIGNIFICANT.

The project site is in a seismically active area. As discussed in Section 4.4.1, *Setting*, there are several active faults in the vicinity of the project site, including the Calaveras and San Andreas faults. Additionally, a corner of the project site is underlain by the Tres Pinos fault. Strong earthquakes on any of these faults could produce peak ground accelerations exceeding 70 percent of gravity (California Department of Conservation 2016). Shaking at this intensity could cause damage to planned residences, on-site and potential off-site utilities, and other infrastructure. Collapse or partial collapse of residences during seismic shaking could result in injury or death of occupants. Although nothing can ensure that the residences and infrastructure do not fail under seismic stress, proper engineering can minimize the risk to life and property. As such, building standards have been developed for construction in areas subject to seismic ground-shaking. The most recent CBC requirements (2019) ensure that new habitable structures are engineered to withstand the expected ground acceleration at a given location. Although the risk of sustaining an earthquake with higher ground accelerations can never be completely eliminated, compliance with all applicable provisions of the CBC and San Benito County Codes listed in Section 4.4.2, *Regulatory Setting*, would ensure that potential impacts from ground-shaking would be minimized to the extent possible.

While residences would not be located within the Tres Pinos fault zone, residences would be adjacent to known fault traces. Appendix E provided recommendations to be incorporated into the design and construction of the project to minimize seismic hazards. Pursuant to San Benito County Code Section 21.01.021, San Benito County adopted the CBC; Section 1803.1.1.3 of the CBC states that the building department of each locality (in this case the San Benito County Building Department) shall approve the soil investigation (included as Appendix E) if it determines that the recommended action is likely to prevent structural damage in each dwelling. Further, as a condition of the building permit, the approved recommended action shall be incorporated in the construction of each dwelling. Therefore, pursuant to San Benito County Code and the CBC, the recommendations included in the Geotechnical Investigation (Appendix E) would be incorporated into the design of the project and each residence, and verified by the County prior to issuance of a building permit. A summary of these recommendations is provided below.

1. Foundations shall bear entirely on an engineered fill layer at least three feet thick with no more than five feet of differential fill thickness below foundations. Fill material shall not contain rocks or lumps larger than six inches in their greatest dimension, with no more than 15 percent of the fill material being larger than 2.5 inches in any dimension.
2. Imported fill material shall have a plasticity index of 25 or less, a significant amount of cohesive fines, a resistivity no less than the resistivity of the on-site soils, a pH between 6.0 and 8.5, a total water-soluble chloride concentration of 300 parts per million or less, and a total water-soluble sulfate concentration of 500 parts per million or less. Samples of imported fill material shall be tested for corrosivity and to confirm adequacy of other soil properties at least two weeks prior to import.
3. Weak and highly compressible soils shall be over-excavated and re-compacted.
4. Localized pockets of expansive clays shall be completely over-excavated and mixed into planned fill materials or capped with at least three feet of engineered fill. A geotechnical engineer shall be retained to observe the over-excavation and mixing process to ensure that highly expansive clays are not placed in a localized area.
5. Structures shall be supported on a post-tensioned slab foundation system designed to reduce the impact of expansive soils.
6. At least 10 feet of cover shall be provided between the outer face of slabs and unretained slope faces, as measured laterally between slope faces and the slabs.
7. A vapor retarder shall be placed between subgrade soils and the bottom of the slabs-on-grade.
8. The concrete mix for slabs shall not exceed a water to cement ratio of 0.45. A qualified Structural Engineer shall design the post-tensioned slabs to resist differential soil movement.
9. Exterior slabs, including roadway curb and gutter, patios, sidewalks, and driveways shall be placed directly on the properly compacted fills. Aggregate base, gravel, or crushed rock shall not be used below these improvements.
10. Exterior slabs shall be reinforced with steel bars in place of wire mesh.

Incorporation of the seismic and soil stability measures summarized above and as described in Appendix E, which are required by San Benito County Code and the CBC, would ensure that impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 1iii:	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?
Threshold 1iv:	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?
Threshold 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?

Impact GEO-3 THERE IS LOW POTENTIAL FOR SEISMIC RELATED LIQUEFACTION, LANDSLIDES, LATERAL SPREADING, AND SUBSIDENCE WITHIN THE PROJECT SITE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The project would involve grading and excavation that would level portions of the project site, particularly along the site's northeastern border where slopes are slightly steeper near the off-site drainage channel. As discussed in Section 4.4.1, *Setting,* the predominant soil type at the project site is Rincon silt clay loam and San Benito clay loam (NRCS 2021). According to previous geotechnical investigations and San Benito County geographic data, soils present at the site have a very low liquefaction susceptibility (Appendix E).

As discussed in Section 4.4.1, *Setting,* slopes on the project site vary from approximately 5 to 9 percent within the site (Appendix E). The site ranges in elevation from approximately 535 feet above mean sea level near the center of the site to approximately 520 feet above mean sea level near the drainage channel. Areas surrounding the project site are relatively flat and as such are not susceptible to landslides. Due to minimal slopes at the project site and in surrounding areas, the potential for a landslide to occur at the project site is very low.

Project site soils are soft, clayey, and well-drained. Because the site is not steeply sloped and the soils that underlay the site are well-drained, the potential for lateral spreading is low (Appendix E). Further, because the site is not underlain by saturated soils with small clay deposits, the potential for subsidence at the project site is low. Therefore, the project site would not be located on unstable soils that would potentially result in liquefaction, landslide, lateral spreading, or subsidence. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in substantial soil erosion or the loss of topsoil?

Impact GEO-4 CONSTRUCTION OF THE PROPOSED PROJECT COULD RESULT IN SOIL EROSION OR LOSS OF TOPSOIL. HOWEVER, COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE IMPACTS TO LESS THAN SIGNIFICANT.

Construction of the proposed project would require grading and excavation, which would involve the excavation of approximately 163,000 cubic yards of soil from the project site. Approximately 114,000 cubic yards of excavated soil would be re-used as fill on the project site, and the approximately 49,000 cubic yards of remaining excavated soil would be hauled off site. Grading and excavation activities would temporarily expose bare soils, which could be removed from the site and transported through wind shearing or stormwater runoff. Construction would disturb more than one acre of land, which mandates implementation of a NPDES-compliant SWPPP, as discussed under Section 4.4.2, *Regulatory Setting*, above. The SWPPP includes BMPs to reduce soil erosion and sedimentation. BMPs include but are not limited to the development of inspection and maintenance procedures for stormwater control, containment of leaks and spills of pollutants in storage areas on-site, prevention of sediment flow into storm drains, and watering of exposed soil to reduce erosion. Additionally, because grading would exceed 50 cubic yards, a grading permit would be required. Therefore, requirements to prevent erosion contained in Chapter 19.17 of the San Benito County Code would be incorporated into the design of the project, including but not limited to the preparation of an erosion control plan and revegetation plan, implementation of dust control measures, and drainage plans that comply with County requirements. Off site wastewater improvements would not extend outside of the right-of way of Fairview Road. With mandatory implementation of the SWPPP and erosion control measures, the proposed project would not result in substantial soil erosion or the loss of topsoil. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-5 EXPANSIVE SOILS OCCUR WITHIN THE PROJECT SITE AND CONSTRUCTION ATOP THIS SOIL COULD RESULT IN DAMAGE TO PROPOSED RESIDENCES AND INFRASTRUCTURE. INCORPORATION OF SEISMIC AND SOIL STABILITY MEASURES INCLUDED IN THE GEOTECHNICAL INVESTIGATION, PURSUANT TO SAN BENITO COUNTY CODE AND THE CBC, WOULD ENSURE THAT IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Expansive soils tend to swell with increases in soil moisture and shrink as the soil moisture decreases. For example, expansive soils could swell during and hours after a precipitation event but then shrink in the following weeks if no additional precipitation occurs. Shrinking and swelling of soils can cause damage to the foundations of proposed residences, roads, and other structures. As described in Section 4.4.1, *Setting,* geotechnical investigations found that the Rincon silt clay loam and the San Benito clay loam soils on site are moderately to highly expansive. Localized pockets of critically expansive clays were also encountered in some of the borings performed by SFB (Appendix E). Compliance with the CBC would reduce the risk to life and property involving expansive soil. As described under Impact GEO-2, the project would incorporate seismic and soil stability measures included in the Geotechnical Investigation (Appendix E) pursuant to San Benito County Code and the CBC. Incorporation of these recommendations would ensure that impacts related to expansive soils would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 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?

Impact GEO-6 THE PROJECT WOULD NOT REQUIRE THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. THERE WOULD BE NO IMPACT.

As described in Section 2, *Project Description,* the City of Hollister would be responsible for conveying and treating wastewater generated by the project. The project would not require septic tanks or alternative disposal systems. Therefore, the project site would not be required to support on-site wastewater treatment and there would be no impact.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

There would be no impact.

Threshold 6:	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-7 THE PROJECT SITE PARTIALLY OVERLIES SEDIMENTS WITH HIGH PALEONTOLOGICAL SENSITIVITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Based on a review of available geologic maps (Dibblee and Minch 2006), primary literature (Jefferson 2010), and online fossil databases (Paleobiology Database [PBDB] 2022; University of California Museum of Paleontology [UCMP] 2022), the paleontological sensitivity of the two geologic units underlying the project site is low for Quaternary alluvial gravel, sand, and clay (Qa) and high for Quaternary older alluvial terrace (Qoa2).

Ground disturbing activities in previously undisturbed portions of the project site and off-site improvement areas are underlain by surficial geologic units with a high paleontological sensitivity (i.e., Qoa2) may result in significant impacts to paleontological resources. Impacts would be significant if construction activities result in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data. The activities may include grading, excavation, or any other activity that disturbs the surface or subsurface geologic formations with a high paleontological sensitivity. Therefore, construction of internal roadways, residences, and other associated facilities on the project site could result in damage or disturbance to paleontological resources. Further, off-site wastewater improvements would be limited to the rights-of way of Fairview Road adjacent to the project site boundary; therefore, impacts would be potentially significant as this location is within an area of high paleontological sensitivity.

Mitigation Measures

GEO-7 Paleontological Resources Monitoring and Mitigation

The County shall require the project proponent to implement the following measures for any construction phase in previously undisturbed geologic strata with high paleontological sensitivity in the project site and off-site improvement areas:

1. **Paleontological Worker Environmental Awareness Program.** Prior to the start of construction, the Qualified Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
2. **Paleontological Monitoring.** Full-time paleontological monitoring shall be conducted during ground disturbing construction activities (i.e., grading, trenching). Monitoring shall be directed by a Qualified Paleontologist, defined as an individual meeting the SVP (2010) standards of a qualified professional paleontologist (i.e., someone with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years). Paleontological monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring shall be determined by the Qualified Paleontologist based on the observation of the geologic setting from initial ground disturbance, and subject to the review and approval by San Benito County. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions once the full depth of excavations has been reached, they may recommend that monitoring be reduced to periodic spot-checking or ceased entirely. Monitoring shall be reinstated if any new ground disturbances are required, and reduction or suspension shall be reconsidered by the Qualified Paleontologist at that time. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:
   a. **Fossil Salvage.** If fossils are discovered, the paleontological monitor shall have the authority to halt or temporarily divert construction equipment within 50 feet of the find until the monitor and/or lead paleontologist evaluate the discovery and determine if the fossil may be considered significant. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits
   b. **Fossil Preparation and Curation**. Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance

at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.

3. **Final Paleontological Mitigation Report.** Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to San Benito County. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Significance After Mitigation

Impacts related to paleontological resources would be reduced to less than significant with implementation of Mitigation Measure GEO-7.

4.4.4 Cumulative Impacts

The geographic scope for considering cumulative impacts to geology and soils is the project site and the immediately adjacent sites. This scope is appropriate because geological materials and soils occur at specific locales and are generally affected by activities directly on or immediately adjacent to the soils, and not by activities occurring outside the area. In addition, any geologic impacts of the project would be site-specific. Planned projects immediately adjacent to the project include the Fairview Corners residential development, planned for the vacant land to the south of the project site; the Roberts Ranch Subdivision residential development, planned for the vacant land to the west of the project site across Fairview Road; and the West of Fairview residential development, planned for the vacant land to the northwest of the project site across Fairview Road.

The project and other cumulative projects in the area would increase the population of the region, as well as the number of structures and supporting infrastructure in the region. Such development would expose new residents and property to seismic and other geologic hazards. However, these seismic and soil issues are specific to each project and therefore, for purposes of this cumulative analysis, the geographic context is narrower as well. It is expected that because of the site-specific nature of these issues, each cumulative development would be required to address the issues on a case-by-case basis through preparation of required soils and geotechnical engineering studies and adherence to the recommendations therein, in addition to adherence to existing local and State laws and regulations including, among others, applicable CBC standards and requirements. Further, the proposed project, by itself or in connection with other planned development in the surrounding area, would not exacerbate existing seismic risks and would therefore not result in a substantial contribution to cumulatively considerable impacts. Therefore, the impact of cumulative development would be less than significant. With the implementation of the identified mitigation for the project as well as its adherence to the applicable laws and regulations, the project’s contribution to any cumulative geology and soils, including paleontological resources, would not be considerable.

4.5 Greenhouse Gas Emissions

This section evaluates the potential impacts of greenhouse gas (GHG) emissions associated with the proposed project. Construction and operational emissions associated with project buildout are calculated using the California Emissions Estimator Model (CalEEMod). The results are compared to the applicable regional and local plans.

4.5.1 Setting

a. Climate Change

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and from human activities, such as fossil fuel combustion, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of California Environmental Quality Act (CEQA), GHG impacts to global climate change are inherently cumulative.

Greenhouse Gases

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases that are widely seen as the principal contributors to human-induced climate change include CO_2, CH_4, N_2O, fluorinated gases such as HFCs and PFCs, and SF_6. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. The following discusses the primary GHGs of concern.

Carbon Dioxide

Carbon dioxide (CO_2) is the primary GHG emitted through human activities. In 2020, CO_2 accounted for about 79 percent of all U.S. GHG emissions from human activities. CO_2 is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). Human activities are altering the carbon cycle–both by adding more CO_2 to the atmosphere, and by influencing the ability of natural sinks,[1] like forests and soils, to remove and store CO_2 from the atmosphere. While CO_2 emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution (USEPA 2022).

Methane

Methane (CH_4) is a colorless, odorless gas and is the major component of natural gas. In 2020, methane accounted for about 11 percent of all U.S. GHG emissions from human activities. Human activities emitting methane include leaks from natural gas systems and the raising of livestock. Methane is also emitted by natural sources such as natural wetlands. In addition, natural processes in soil and chemical reactions in the atmosphere help remove CH_4 from the atmosphere. Methane's lifetime in the atmosphere is much shorter than carbon dioxide (CO_2), but CH_4 is more efficient at trapping radiation than CO_2. Pound for pound, the comparative impact of CH_4 is 25 times greater than CO_2 over a 100-year period (USEPA 2022).

Nitrous Oxide

Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. In 2020, nitrous oxide accounted for about seven percent of all U.S. GHG emissions from human activities. Human activities such as agriculture, fuel combustion, wastewater management, and industrial processes are increasing the amount of N_2O in the atmosphere. Nitrous oxide is also naturally present in the atmosphere as part of the Earth's nitrogen cycle and has a variety of natural sources. Nitrous oxide molecules stay in the atmosphere for an average of 114 years before being removed by a sink or destroyed through chemical reactions. The impact of one pound of N_2O on warming the atmosphere is almost 300 times that of one pound of carbon dioxide (USEPA 2022).

Fluorinated Gases (HFCs, PFCs and SF_6)

Unlike many other GHGs, fluorinated gases have no natural sources and only come from human-related activities. They are emitted through their use as substitutes for ozone-depleting substances (e.g., as refrigerants) and through a variety of industrial processes such as aluminum and semiconductor manufacturing. Many fluorinated gases have very high GWPs relative to other GHGs, so small atmospheric concentrations can have disproportionately large effects on global temperatures. They can also have long atmospheric lifetimes, in some cases, lasting thousands of years. Like other long-lived GHGs, most fluorinated gases are well-mixed in the atmosphere, spreading around the world after they are emitted. Many fluorinated gases are removed from the atmosphere only when they are destroyed by sunlight in the far upper atmosphere. In general, fluorinated gases are the most potent and longest lasting type of GHGs emitted by human activities (USEPA 2022).

[1] Areas on earth that have the capacity to store greenhouse gases.

b. Sources of Greenhouse Gas Emissions

California Emissions Inventory

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2019, California produced 418 MMT of CO_2e in 2019, which is 7 MMT of CO_2e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 21 percent of the State's GHG emissions while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO_2e (CARB 2021). The annual 2030 statewide target emissions level is 260 MT of CO_2e (CARB 2017). On May 10, 2022, CARB released the draft 2022 Scoping Plan aimed to achieve carbon neutrality by 2045 or earlier.

c. Potential Effects of Climate Change

A summary follows of some of the potential effects that climate change could generate in California.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C (4.3°F to 5.8°F) in the next 50 years and by 3.1 to 4.9°C (5.6°F to 8.8°F) in the next century (California Natural Resource Agency 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (California Natural Resource Agency 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. With increasing temperatures, shifting weather patterns, longer dry seasons, and more dry fuel loads, the frequency of large wildfires and area burned is expected to continue to increase. (California Natural Resources Agency 2021).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century.

During the same period, sea level rose over 0.15 meter along the central and southern California coasts (California Natural Resource Agency 2018). The Sierra Nevada Mountains snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack. Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (California Natural Resource Agency 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (California Natural Resource Agency 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 3.3 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 0 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California’s water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (California Natural Resource Agency 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the Country’s vegetables and two-thirds of the Country’s fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (California Natural Resource Agency 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions with higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; California Natural Resource Agency 2018).

4.5.2 Regulatory Setting

a. Federal

Federal Clean Air Act

On April 2, 2007, in *Massachusetts v. EPA*, [549 U.S. 497 (2007)], the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act (CAA). The Court held that the USEPA must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding**: The Administrator finds that the current and projected concentrations of six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding**: The Administrator finds that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing GHG emission standards for vehicles (USEPA 2021). In collaboration with the National Highway Traffic Safety Administration (NHTSA) and CARB, the USEPA developed emission standards for light-duty vehicles and heavy-duty vehicles (National Highway Traffic Safety Administration et al 2016; US Government Publishing Office 2016).

Corporate Average Fuel Economy Standards

First enacted by Congress in 1975, the purpose of the Corporate Average Fuel Economy (CAFE) standards was to reduce energy consumption by increasing the fuel economy of passenger cars and light trucks. On April 1, 2010, the NHTSA and USEPA issued a joint final rule establishing a new national program to regulate passenger cars and light trucks to improve fuel economy and reduce GHG emissions. According to Midterm Evaluation of Light-Duty Vehicle GHG Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025, issued by the NHTSA, USEPA and ARB on July 18, 2016, CAFE standards for passenger cars and light trucks increased from an average fuel economy of 34.1 miles per gallon (mpg) by model year 2016 to 38.3 mpg by model year 2021 and 46.3 mpg by model year 2025 (NHTSA et al 2016).

b. State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code Section 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). According to CARB, California achieved its 2020 GHG emission reduction target in 2016. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on the land use planning and urban growth decisions of local governments.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, and outlined measures to meet the 2020 GHG reduction goals. The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014, by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The 2017 Scoping Plan Update addresses the 2030 target established by Senate Bill (SB) 32 and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes. The Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons (MT) of CO_2e by 2030 and 2 MT of CO_2e by 2050 (CARB 2017).

Assembly Bill 1279

AB 1279, the California Climate Crisis Act, was passed on September 16, 2022, and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045.

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022. The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Gavin Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, the plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's natural and working lands and using a variety of mechanical approaches. Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the State's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in natural and working lands and explores how natural and working lands contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet our GHG emissions reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan. Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Association of Monterey Bay Area Governments (AMBAG) was assigned targets of a three percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a six percent reduction in per capita GHG emissions from passenger vehicles by 2035.

California Green Building Standards Codes

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2022 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

Part 6 – Building Energy Efficiency Standards/Energy Code

CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2022 Title 24 standards are the applicable building energy efficiency standards for the proposed project because they became effective on January 1, 2023.

Part 11 – California Green Building Standards

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

Executive Order B-30-15

On April 20, 2015, Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. That EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California achieved its 2020 GHG emission reduction target of returning to 1990 by 2020 four years early in 2016 (CARB 2022a). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2°C, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill X1-2 of 2011 and Senate Bill 350 of 2015

SB X1-2 required that the amount of electricity generated per year from eligible renewable energy resources be increased to an amount that equaled at least 33 percent of the annual electricity sold to retail customers in California by December 31, 2020. Since SB X1-2 was passed in 2011, the California Energy Commission (CEC) estimated that by 2019, 36 percent of the state's retail electricity sales were provided by Renewables Portfolio Standard-eligible sources such as solar and wind, exceeding the 33 percent requirement (CEC 2020).

In October 2015, SB 350 was signed by Governor Edmund (Jerry) Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

c. Local

Monterey Bay Air Resources District

As discussed in Section 4.1, *Air Quality*, the Monterey Bay Air Resource District (MBARD) has primary responsibility for developing and implementing rules and regulations to maintain the national ambient air quality standards and attain the California Ambient Air Quality Standards, permitting new or modified sources, developing air quality management plans, and adopting and enforcing air pollution regulations for all projects in the North Central Coast Air Basin. The CARB Scoping Plan does not specify an explicit role for local air districts with respect to implementing AB 32 and SB 32, but it does state that CARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting, but also via their role as a CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

Association of Monterey Bay Area Governments

AMBAG is the MPO for the Monterey Bay Area. As the MPO, AMBAG is required to produce certain documents that maintain the region's eligibility for federal transportation assistance which include the Metropolitan Transportation Plan (MTP). AMBAG coordinates the development of the MTP with Regional Transportation Planning Agencies (San Benito County Council of Governments, Santa Cruz County Regional Transportation Commission, and Transportation Agency for Monterey County), transit providers (San Benito County Local Transit Authority, Monterey Salinas Transit, and Santa Cruz METRO Transit District), MBARD, state and federal governments, and organizations having interest in or responsibility for transportation planning and programming. AMBAG also coordinates transportation planning and programming activities with the three counties and 18 local jurisdictions within the tri-county Monterey Bay Region.

In June 2022, AMBAG adopted the 2045 MTP/SCS. The 2045 MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the region through 2045. The 2045 MTP/SCS plans more focused growth in high quality transit corridors and more travel choices as well as a safe and efficient transportation system with improved access to jobs and education. The AMBAG region strives toward sustainability through integrated land use and transportation planning. The AMBAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. AMBAG was tasked by CARB to achieve a six percent decrease in mobile source GHG emissions compared to 2005 vehicle emissions by the end of 2035. Implementation of the 2045 MTP/SCS is anticipated to achieve a four percent per capita reduction by 2020 and a nearly seven percent per capita reduction by 2035 (AMBAG 2022).

San Benito County 2035 General Plan

The 2035 General Plan Land Use Element, Housing Element, Circulation Element, Public Facilities and Services Element, and Health and Safety Element provide the following goals, policies and objectives pertaining to GHG emissions that are relevant to this analysis:

Land Use Element

LU-1.2 **Sustainable Development Patterns**. The County shall promote compact, clustered development patterns that use land efficiently; reduce pollution and the expenditure of energy and other resources; and facilitate walking, bicycling, and transit use; and encourage employment centers and shopping areas to be proximate to residential areas to reduce vehicle trips. Such patterns would apply to infill development, unincorporated communities, and the New Community Study Areas. The County recognizes that the New Community Study Areas comprise locations that can promote such sustainable development.

Goal LU-2 To promote energy efficiency through innovative and sustainable building and site design.

LU-2.1 **Sustainable Building Practices**. The County shall promote, and where appropriate, require sustainable building practices that incorporate a "whole system" approach to designing and constructing buildings that consume less energy, water, and other resources; facilitate natural ventilation; use daylight efficiently; and are healthy, safe, comfortable, and durable.

LU-2.2 **Green Sustainable Building Practices.** The County shall encourage sustainable building practices that go beyond the minimum requirements of the Title 24 CALGreen Code (i.e., Tier 1 or Tier 2 measures) and to design new buildings to achieve a green building standard such as Leadership in Energy and Environmental Design (LEED).

LU-2.7 **Sustainable Location Factor.** The County shall encourage new development in locations that provide connectivity between existing transportation facilities to increase efficiency, reduce congestion, and improve safety.

Housing Element

Goal HOU-5 To establish development and construction standards which encourage energy conservation in residential uses. Promote the use of energy conservation methods in housing for all segments of the community.

HOU-5A The County shall require energy-conserving construction, as required by state law.

HOU-5D The County shall promote opportunities for use of solar energy by assuring solar access. The County shall pursue all avenues of solar access and energy conservation currently provided by California law and consider a local ordinance to further promote energy conservation.

Public Facilities and Services Element

PFS-7.5 **Waste Diversion.** The County shall require waste reduction, recycling, composting, and waste separation to reduce the volume and toxicity of solid wastes sent to landfill facilities and to meet or exceed State waste diversion requirements of 50 percent.

PFS-7.6 **Construction Materials Recycling**. The County shall encourage recycling and reuse of construction waste, including recycling materials generated by the demolition of buildings, with the objective of diverting 50 percent to a certified recycling processor. The County shall encourage salvaged and recycled materials for use in new construction.

PFS-8.7 **Renewable Energy Grid-Connections.** The County shall coordinate with public utility providers to design their facilities so that private and public onsite renewable energy facilities (e.g., solar, wind, biomass, geothermal) can connect to the larger electricity grid.

Health and Safety Element

Goal HS-5 To improve local and regional air quality to protect residents from the adverse effects of poor air quality.

HS-5.7 **Greenhouse Gas Emission Reductions.** The County shall promote greenhouse gas emission reductions by supporting carbon efficient farming methods (e.g., methane capture systems, no-till farming, crop rotation, cover cropping); supporting the installation of renewable energy technologies; and protecting grasslands, open space, oak woodlands, riparian forest, and farmlands from conversion to urban uses.

San Benito County Code of Ordinances

Section 15.01.046, Building Permits; Diversion Plans, states that no building permit shall be issued until a solid waste diversion plan has been submitted to and approved by the Integrated Waste Management Department. Permittees are required to divert a minimum of 50 percent of their construction and demolition waste. A permit holder who has not diverted 50 percent of the construction or demolition waste from disposal would be penalized and required to pay San Benito County for the waste not properly diverted.

4.5.3 Impact Analysis

a. Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, impacts related to GHG emissions from the project would be significant if the project would:

1. Generate greenhouse gas 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 greenhouse gases.

The vast majority of projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA Guidelines* Section 15064[h][1]).

According to *CEQA Guidelines* Section 15183.5, project analysis can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. To date, neither the County of San Benito nor MBARD has adopted a qualified Climate Action Plan to address significance.

In the absence of any adopted numeric threshold, the significance of the project's GHG emissions is evaluated consistent with *CEQA Guidelines* Section 15064.4(b) by considering whether the project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The County of San Benito has not adopted a numerical significance threshold for assessing impacts related to GHG emissions and has not formally adopted a local plan for reduction of GHG emissions. Neither has MBARD, the California Office of Planning and Research, CARB, the California Air Pollution Control Officers Association (CAPCOA), or any other state or applicable regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the project.

Therefore, the significance of the project's potential impacts regarding GHG emissions and climate change is evaluated based on consistency with plans and polices adopted for the purposes of reducing GHG emissions and mitigating the effects of climate change. The most directly applicable adopted regulatory plans to reduce GHG emissions are the 2022 Scoping Plan, the 2045 MTP/SCS, and the County's 2035 General Plan. GHG emissions from the construction and operation of the project are provided for informational purposes.

b. Methodology

GHG emissions associated with project construction and operation were estimated using CalEEMod, version 2022.1.1.22, with the assumptions described under Section 4.1, *Air Quality*. The CalEEMod output data for the proposed project, which also reports input data of project details that were used in the model, is provided in Appendix F.

Construction

During construction, the proposed project would generate GHG emissions primarily from the use of internal combustion engines to power on-site equipment as well as off-site transportation of workers and materials. Further detail for the assumptions included in the modeling of GHG emissions is provided in Section 4.1, *Air Quality*, as well as in Appendix F. Construction emissions occur for a limited period of a project's lifetime, as a standard practice, GHG emissions from construction are amortized over a presumed project lifetime. A project lifetime of 30 years is recommended by the Association of Environmental Professionals in *Final White Paper Beyond 2020 and Newhall* for amortizing construction-related GHG emissions (Association of Environmental Professionals 2016).

Operation

During operation, the proposed project would generate GHG emissions from area sources, energy use, mobile, water use, and waste disposal. Further detail for the assumptions included in the modeling of GHG emissions is provided in Section 4.1, *Air Quality*, as well as in Appendix F. Assumptions used for the estimation of GHG emissions that are not applicable to criteria pollutant emissions, and therefore not included in the methodology of Section 4.1, *Air Quality*, are detailed below:

- The project's CalEEMod model uses default CalEEMod assumptions for energy and solid waste sources for the single family residential units, multi-family residential units (the unit type applied for the proposed Accessory Dwelling Units [ADUs]), city park, and parking lot land uses.
- The project would be constructed in accordance with the 2022 Building Energy Efficiency Standards at a minimum; therefore, project would install photovoltaic (PV) system on all residences equal to the expected electricity usage.
- The project would not install fireplaces, according to the applicant; therefore, fireplaces were not modeled in CalEEMod.
- Project design features, such as the proposed below market rate housing, are applied in CalEEMod to more accurately characterize the proposed project and its associated emissions.
- CalEEMod does not incorporate water use reductions achieved by CALGreen (Part 11 of Title 24). New development would be subject to CALGreen, which requires a 20 percent increase in indoor water use efficiency and use of indoor water-efficient irrigation systems. Thus, to account for compliance with CALGreen, a 20 percent reduction in indoor water use and the use of water-efficient irrigation systems were included in the water consumption calculations for new development.
- The project's GHG emissions from construction of the proposed project were amortized over a 30-year period and added to annual operational emissions to determine the project's total annual GHG emissions.

c. Project Impacts and Mitigation Measures

Threshold 1:	Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
Threshold 2:	Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-1 THE PROPOSED PROJECT WOULD GENERATE TEMPORARY AND LONG-TERM INCREASES IN GHG EMISSIONS THAT WOULD NOT CONFLICT WITH 2022 SCOPING PLAN GHG EMISSION REDUCTION GOALS. THE PROPOSED PROJECT WOULD BE CONSISTENT WITH APPLICABLE PLANS, POLICIES, AND REGULATIONS AIMED AT REDUCING GHG EMISSIONS. AS SUCH, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As mentioned in Section 4.5.3(a), *Thresholds of Significance*, neither the County of San Benito nor MBARD have adapted a communitywide Climate Action Plan or other CEQA-compliant GHG reduction plan. Therefore, the regional GHG reduction policies and regulations most applicable to the project are those found in CARB's 2022 Scoping Plan, AMBAG's 2045 MTP/SCS, and the County's 2035 General Plan.

GHG Emissions

Construction and operation of the project would generate GHG emissions. This analysis considers the combined impact of GHG emissions from both construction and operation. Calculations of CO_2, CH_4, and N_2O emissions are provided for informational purposes to identify the magnitude of project's emissions.

Construction of the proposed project would generate temporary GHG emissions primarily from the operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and heavy trucks to transport building materials and soil export. As estimated, the project's construction activities would generate a total of approximately 1,865 MT CO_2e emissions (Appendix F). As construction emissions occur for a limited period of a project's lifetime, as a standard practice, GHG emissions from construction are amortized over a presumed project lifetime. As shown in Table 4.5-1, the proposed project's annual amortized construction-related emissions would be 62 MT CO_2e.

Table 4.5-1 Combined Annual GHG Emissions

Emission Source	Annual Emissions (MT of CO_2e per year)
Construction	
2025	1,042
2026	403
2027	415
2028	5
Total Construction Emissions	**1,865**
Amortized over 30 years	**62**
Operation	
Area	3
Energy	371
Mobile	1,515

Emission Source	Annual Emissions (MT of CO_2e per year)
Solid Waste	47
Water	7
Total Operational Emissions	**1,943**
Total Emissions	**2,005**

MT = metric tons; CO_2e = carbon dioxide equivalents

[1] Emissions per SP rounded up to the nearest tenth.

Notes: Emissions modeling was completed using CalEEMod. See Appendix F for modeling results.

Operation of the proposed project would generate GHG emissions associated with area sources (e.g., landscape maintenance), energy and water usage, vehicle trips, and wastewater and solid waste generation. Table 4.5-1 combines the estimated construction and operational GHG emissions associated with development of the project. As shown therein, the project would generate approximately 1,943 MT of CO_2e per year during operation. Total emissions (amortized construction emissions plus annual operation emissions) would be 2,005 MT of CO_2e per year.

2022 Scoping Plan

The principal state plans and policies for reducing GHG emissions are AB 32, SB 32, and AB 1279. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020; the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030; and the goal of AB 1279 is to achieve net zero greenhouse gas emissions no later than 2045, and reduce GHG emissions by 85 percent below 1990 levels no later than 2045. The 2022 Scoping Plan expands upon earlier plans to include the AB 1279 targets. The 2022 Scoping Plan includes Appendix D, Local Actions, that outlines project-specific measures that can be implemented so that a project is consistent with the Scoping Plan (CARB 2022b). These measures, referred to as "Key Project Attributes," emphasize three priority areas: transportation electrification, VMT reduction, and building decarbonization. Table 4.5-2 lists the Key Project Attributes as they are presented in Appendix D of the 2022 Scoping Plan.

Table 4.5-2 2022 Scoping Plan Key Residential and Mixed-Use Project Attributes that Reduce GHGs

Priority Areas	Key Project Attribute
Transportation Electrification	▪ The project provides EV charging infrastructure that, at minimum, meets the most ambitious voluntary standard in the California Green Building Standards Code at the time of project approval.
VMT Reduction	▪ The project is located on an infill site that is surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer). ▪ The project does not result in the loss or conversion of natural and working lands. ▪ The project consists of transit-supportive densities (minimum of 20 residential dwelling units per acre); or is in proximity to existing transit stops (within a half mile); or satisfies more detailed and stringent criteria specified in the region's SCS. ▪ The project reduces parking requirements by: eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or providing

Priority Areas	Key Project Attribute
	residential parking supply at a ratio of less than one parking space per dwelling unit; or for multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit. ▪ The project at least 20 percent of units included are affordable to lower-income residents ▪ The project results in no net loss of existing affordable units
Building Decarbonization	▪ The project would install all-electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking.
Source: CARB 2022b	

The following discussion outlines the proposed project's consistency with the Key Project Attributes listed in Table 4.5-2. For single-family residential housing, CALGreen requires installation of a raceway to accommodate a dedicated 208-240-volt branch circuit that would allow for the installation of an EV charger. The most ambitious voluntary standard would be the Tier 1 and Tier 2 measure of installing the dedicated 208-240-volt branch circuit. The project would comply with at least the requirement for a raceway to accommodate a dedicated 208-240-volt branch circuit.

The project would provide sidewalks on internal streets for pedestrian use. The project would also connect on-site sidewalks to the planned Fairview Corners sidewalks and trail at the southern project boundary, and the future Gavilan College campus. This expanded pedestrian network would provide pedestrian access to local parks, including to the proposed on-site park from adjacent developments and to Valley View Park. The County's Bikeway and Pedestrian Master Plan identifies planned bike lanes along Fairview Road, Union Road, and SR 25/Airline Highway. The project includes connections to future bicycle and pedestrian facilities proposed under the County's 2035 General Plan and the County's Bikeway and Pedestrian Master Plan. Therefore, the project would support alternative modes of transportation that would have the effect of reducing VMT.

The Additional VMT Analysis and Mitigations Memorandum (Appendix I) prepared by Kimley-Horn in April 2024 analyzed VMT generated by the project. Specifically, trip distances for different purposes, income groups, and housing options were calculated using methods that leverage advanced big data analytics to analyze extensive datasets on trip lengths within each category in the county and the region. Based on the results of the Additional VMT Analysis and Mitigations Memorandum, the proposed project is estimated to generate 17.8 VMT per capita (refer to Scenario B within Appendix I). Because the project's VMT per capita would not exceed the VMT policy impact threshold of 19.6 VMT per capita (15 percent below existing VMT), the proposed project would not result in substantial VMT increase.

As described in Section 2, *Project Description*, over 20 percent of the project's units would be affordable units, which would be consistent with the Scoping Plan's key project attribute of at least 20 percent of units included are affordable to lower-income residents. The project would also not result in the loss of existing affordable units, as only the existing single-family residence, which is not an affordable housing unit, would be demolished. In addition, the project would be located on a lot that has existing utility connections.

The project would not include parking spaces at a supply at a ratio of less than one parking space per dwelling unit, as this would be infeasible for single-family residences with attached garages and driveways. However, as described above, the project would not result in substantial VMT and would offer accessible travel options to reduce reliance on gasoline-powered vehicle trips.

The project would be located on underutilized farmland served by existing utilities and essential public services. The project site is dry farmed with oat hay (animal feed) due to poor soil quality. The project site is not located on land designated or zoned for agricultural use. The proposed project would be adjacent to existing active agricultural lands to the north (vineyard/winery), east, and south under existing conditions, with land south of the site, and to the west, across Fairview Road, planned for future residential development. The County's "right-to-farm" ordinance would protect the continued agricultural use of adjacent lands that are planned to remain in agricultural use. Therefore, the project would not inhibit the use of these lands or result in their conversion to another use. Accordingly, the project would not result in the loss of natural or working lands.

The project would not be 100 percent electric as it is designed with a natural gas component; however, it would comply with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and the SB 1383 -mandated organic waste service. The residences would include solar that would generate electricity equal to the expected usage of these buildings. In addition, the project would receive electricity from Central Coast Community Energy, which is required to reduce GHG emissions by increasing procurement from eligible renewable energy by set target years as required by SB 100. According to the 2022 Scoping Plan, residential and mixed-use development projects that incorporate all of the key project attributes are aligned with the State's priority GHG reduction strategies for local climate action as shown in Table 1 and with the State's climate and housing goals; however, lead agencies may determine, with adequate additional supporting evidence, that projects that incorporate some, but not all, of the key project attributes are consistent with the State's climate goals. Although the project would not attain some Appendix D attributes regarding natural gas usage and parking requirements, the project would include other key GHG-reducing attributes which demonstrate consistency with the 2022 Scoping Plan through features such as installation of solar, VMT reduction through exceeding affordable housing goals of the Scoping Plan, and facilitation of multimodal transportation. Therefore, the proposed project would be consistent with the 2022 Scoping Plan, and impacts would be less than significant. Although impacts would be less than significant as currently proposed, if desired by the County, the project could be designed and constructed as 100 percent electric, which would further reduce GHG emissions.

AMBAG 2045 MTP/SCS

AMBAG adopted an updated MTP/SCS, *Moving Forward Monterey Bay 2045*, in June 2022. AMBAG prepares a long-range transportation plan every four years consistent with state and federal laws. The 2045 MTP/SCS is reflective of SB 375 described in Section 4.5.2 above, to focus land use development around high-quality transit corridors as a means to reduce passenger vehicle GHG emissions. Table 4.5-3 below describes the project's consistency with the MTP/SCS six central goals.

Table 4.5-3 Project Consistency with the AMBAG 2045 MTP/SCS

Policy	Consistency
Access and Mobility. Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region	**Consistent.** The project would include interior roadways and sidewalks to provide vehicle, bicycle, and pedestrian access to residences. This network would provide pedestrian access to local parks, including the proposed on-site park. Internal roads would connect the project to the planned Fairview Corners neighborhood to the south. San Benito County Express operates a Dial-A-Ride service, Fixed Route service in Hollister, as well as an Intercounty service to Gilroy's Caltrain and Greyhound Stations, and Gavilan College with connecting service to the Santa Clara Valley Transportation Authority bus system. The San Benito Short Range Transit Plan Update identifies a future transit route extension from Hollister southerly along SR 25 to the planned Gavilan College campus on Fairview Road. This service is estimated to begin sometime after the opening of the Gavilan campus, currently scheduled for 2024. Therefore, the project would have accessible and reliable travel options in the future.
Environment. Promote environmental sustainability and protect the natural environment.	**Consistent.** The project would include several sustainable design features, including those required by Title 24 and CALGreen standards. The project would install PV systems on each residence. All proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. The project would meet the requirements of the 2022 California Energy Code.
Land Use & Housing. Investment in safe bicycle and pedestrian routes that improve connectivity and access to common destinations, such as connections between residential areas and schools, employment centers, neighborhood shopping, and transit stops and stations, supporting efforts throughout the region to improve connectivity and realize public health benefits from these investments.	**Consistent**. The project would include interior roadways and sidewalks to provide vehicle, bicycle, and pedestrian access to proposed residences. This network would provide pedestrian access to local parks, including the proposed on-site park. The project would connect to the future Fairview Corners residential project south of the site through interior roadways and sidewalks, and would connect to planned development west of the site with the installation of a crosswalk and pedestrian beacon at Fairview Road and Old Ranch Road. Proposed on-site facilities would connect to planned adjacent development. The proposed project does not include off-site extensions of bicycle routes. A planned County bicycle route extension on Fairview Road may improve access to the project site in the future, which would allow connections to schools, employment centers, neighborhood shopping, and transit stops and stations.

Source: AMBAG 2022

San Benito County 2035 General Plan

As noted above, the San Benito County 2035 General Plan contains numerous policies aimed at reducing GHG emissions, as well as several goals and policies that provide indirect co-benefits of reducing GHG emissions. Table 4.5-4 indicates the project's consistency with San Benito County General Plan elements, goals and policies pertaining GHGs.

Table 4.5-4 Project Consistency with the 2035 County General Plan

Policy	Consistency
LU-1.2: Sustainable Development Patterns. The County shall promote compact, clustered development patterns that use land efficiently; reduce pollution and the expenditure of energy and other resources; and facilitate walking, bicycling, and transit use; and encourage employment centers and shopping areas to be proximate to residential areas to reduce vehicle trips. Such patterns would apply to infill development, unincorporated communities, and the New Community Study Areas. The County recognizes that the New Community Study Areas comprise locations that can promote such sustainable development.	**Consistent.** The project site is located in an unincorporated community adjacent to the City of Hollister Sphere-of-Influence and has a General Plan land use designation of Residential Mixed (RM), which has a maximum density for single-family residences of up to 20 dwelling units per acre.
LU-2.7: Sustainable Location Factor. The County shall encourage new development in locations that provide connectivity between existing transportation facilities to increase efficiency, reduce congestion, and improve safety.	**Consistent.** The proposed project would create sidewalks and pathways within the residential subdivision to accommodate pedestrians and cyclists, and provide connections to the adjacent proposed Fairview Corners development and the future Gavilan College campus. Bicycle and transit facilities are not located in proximity to the site at this time. The project does not include off-site extensions of bicycle routes or connections to transit at this time. Planned extensions of bicycle lanes and a transit route to the San Benito Gavilan College campus will improve transportation access to the project site and adjacent existing and planned residential development in the future.
LU-2.1: Sustainable Building Practices. The County shall promote, and where appropriate, require sustainable building practices that incorporate a "whole system" approach to designing and constructing buildings that consume less energy, water, and other resources; facilitate natural ventilation; use daylight efficiently; and are healthy, safe, comfortable, and durable. **LU-2.2: Green Sustainable Building Practices.** The County shall encourage sustainable building practices that go beyond the minimum requirements of the Title 24 CalGreen Code (i.e., Tier 1 or Tier 2 measures) and to design new buildings to achieve a green building standard such as Leadership in Energy and Environmental Design (LEED). **HS-5.7: Greenhouse Gas Emission Reductions.** The County shall promote greenhouse gas emission reductions by supporting carbon efficient farming methods (e.g., methane capture systems, no-till farming, crop rotation, cover cropping); supporting the installation of renewable energy technologies; and protecting grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to urban uses. **HS-5.8: GHG Reduction Targets**. The County acknowledges that the State endeavors to achieve 1990 greenhouse gas (GHG) emission levels and establish a long-term goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. The County will encourage	**Consistent.** The project would comply with all standards set forth in the CBC Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. Furthermore, in accordance with the California Green Building Standards for residential developments, low-rise residences (three stories or less) are required to install on-site photovoltaic arrays that provide energy equal to the amount expected to be consumed by residences. The project would install rooftop PV systems capable of generating electricity equal to the amount expected to be consumed by residences. The project site is currently developed with a single-family residence and previously farmed land. While the project would eliminate the oat hay farming on the project site, it would not convert grassland open space, woodlands, or forest lands to an urban use. All proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. As mentioned above under the 2022 Scoping Plan, the project would be consistent with the State's climate goals by increasing renewable energy and providing energy efficiency in the buildings. Therefore, the project would reduce GHG emissions consistent with EO-S-3-05 long term GHG emission reductions by 2050 and sustainable building practices.

Policy	Consistency
projects that support these goals, recognizing that these goals can be met only if the state succeeds in decarbonizing its fuel supply. **HOU-5A.** The County shall require energy-conserving construction, as required by state law **HOU-5D.** The County shall promote opportunities for use of solar energy by assuring solar access. The County shall pursue all avenues of solar access and energy conservation currently provided by California law and consider a local ordinance to further promote energy conservation.	
PFS-7.5: Waste Diversion. The County shall require waste reduction, recycling, composting, and waste separation to reduce the volume and toxicity of solid wastes sent to landfill facilities and to meet or exceed State waste diversion requirements of 50 percent. **PFS-7.6: Construction Materials Recycling.** The County shall encourage recycling and reuse of construction waste, including recycling materials generated by the demolition of buildings, with the objective of diverting 50 percent to a certified recycling processor. The County shall encourage salvaged and recycled materials for use in new construction.	**Consistent.** The project would be required to be consistent with the County of San Benito Solid Waste Ordinance, which requires a solid waste diversion plan to be submitted to and approved by the Integrated Waste Management Department. The plan is required to divert a minimum of 50 percent of project waste.
PFS-8.7: Renewable Energy Grid-Connections. The County shall coordinate with public utility providers to design their facilities so that private and public onsite renewable energy facilities (e.g., solar, wind, biomass, geothermal) can connect to the larger electricity grid.	**Consistent.** The project would be consistent with the 2022 Building Energy Efficiency Standards for residential developments, the project would install PV systems capable of generating electricity equal to the amount expected to be consumed by residences.

Source: County of San Benito 2015

In summary, the plan consistency analysis provided above demonstrates that the project complies with or exceeds the plans, policies, regulations and GHG reduction actions/strategies outlined in AMBAG's 2045 MTP/SCS, the 2022 Scoping Plan, and the County's 2035 General Plan. Consistency with the above plans, policies, regulations and GHG reduction actions/strategies would ensure that the project's incremental contribution of GHG emissions would not inhibit the ability of the state to meet its GHG reduction goals. Therefore, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHG emissions. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.5.4 Cumulative Impacts

GHG and climate change are, by definition, cumulative impacts. The geographic scope for considering cumulative impacts related to GHG emissions is the state of California. The contribution of the project to the impact is addressed in light of the goals for reducing statewide emissions.

Statewide GHG emissions are an existing significant cumulative impact. As such, the state has established the following statewide emissions reductions targets:

- By 2020, reduce GHG emissions to 1990 levels
- By 2030, reduce GHG emissions to 40 percent below 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

GHG impacts are assessed in a cumulative context since no single project can cause a discernible change to the climate. Therefore, cumulative significance is based on the same thresholds as the proposed project. In the absence of any adopted numeric threshold, the significance of the project's GHG emissions is evaluated consistent with *CEQA Guidelines* Section 15064.4(b) by considering whether the project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. For this project, the most directly applicable adopted regulatory plans to reduce GHG emissions are the 2022 Scoping Plan, the 2045 MTP/SCS, and the 2035 General Plan. The proposed project would install photovoltaic systems on all low-rise residential buildings and energy conservation standards of Title 24 Building Energy Efficiency Standards (Part 6) and Green Building Standards (Part 11). In addition, the project would meet the requirements of the 2022 California Energy Code and equip with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. Therefore, the proposed project would be consistent with the policies of the 2022 Scoping Plan. Table 4.5-3 shows that the project would be consistent with the 2045 MTP/SCS by expanding the pedestrian network and sustainable features. In addition, the proposed project would be consistent with the 2035 General Plan goals and policies that reduce GHG emissions and that provide indirect co-benefits for reducing GHG emissions. Therefore, based on the *CEQA Guidelines* for determining the significance of GHG emissions, while cumulative impacts are significant, the proposed project's contribution would not be considerable.

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4.6 Noise

This section evaluates the potential environmental impacts related to noise generated by implementation of the project on nearby noise-sensitive land uses. This analysis incorporates site-specific noise measurement data (refer to Appendix G).

4.6.1 Setting

a. Overview of Noise

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. In general, a 3 dBA change in community noise levels is noticeable, while 1 to 2 dB changes generally are not perceived. Quiet suburban areas typically have daytime noise levels in the range of 40 to 50 dBA and nighttime noise levels in the range of 30 to 40 dBA, while arterial streets are in the 50 to 60+ dBA range (Caltrans 2013). Normal conversational levels are in the 60 to 65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate at a rate of approximately 6 dBA per doubling of distance from point sources (such as industrial machinery). Noise from widely distributed, linear noises such roadway traffic typically attenuates at a rate of approximately 4 to 6 dBA per doubling of distance. Noise from large construction sites would attenuate at a rate of approximately 4.5 to 7.5 dBA per doubling of distance. Modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011).

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (L_{eq}). The L_{eq} is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, L_{eq} is measured over a one-hour period. L_{max} is the highest root mean squared (RMS) sound pressure level within the measuring period, and L_{min} is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Noise levels described by L_{dn} and CNEL usually do not differ by more than 1 dBA.

b. Fundamentals of Ground-borne Vibration

Ground-borne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy that may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as ground-borne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although ground-borne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

c. Sensitive Receptors

Noise exposure standards for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities. The nearest noise-sensitive receptors to the project site include single-family residences located adjacent to the west of the project site boundary, south of Old Ranch Road. Other sensitive receptors include single-family residences located approximately 295 feet to the east of the project site.

d. Existing Noise Environment

Project Site and Vicinity

The general noise environment of the project and the vicinity is characterized by traffic on Fairview Road to the west and operations of the Leal Vineyards adjacent to the north. Other adjacent land uses include open space, rural residential, single-family residential, and agricultural uses with low ambient noise levels during the evening and nighttime hours. There is also planned residential development to the south and east.

On-Site Noise Level Readings

The most prevalent source of noise in the project vicinity is vehicular traffic along Fairview Road immediately west of the project site, and vineyard and agricultural operations adjacent north of the project site. To characterize ambient sound levels at and near the project site, three 15-minute sound level measurements were conducted on February 7, 2022, between 12:03 p.m. and 1:31 p.m. An Extech, Model 407780A, ANSI Type 2 integrating sound level meter was used to conduct the measurements. Noise Measurement (NM) 1 was taken at the northwestern corner of the project site approximately 15 feet from the vineyards north of the project site to capture ambient noise levels near the adjacent residences west of the project site. NM2 was taken at the southwestern edge of the project site, also to capture noise levels near the adjacent residences west of the project site. NM3 was taken at the southeastern edge of the project site to capture noise levels near residences approximately 470 feet southeast of project site. Table 4.6-1 summarizes the results of the noise measurements. Detailed sound level measurement data are included in Appendix G. Figure 4.6-1 shows the noise measurement locations.

Table 4.6-1 Project Site Vicinity Sound Level Monitoring Results - Short-Term

Measurement	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
NM1	Northwestern corner of project boundary	12:02 – 12:26 p.m.	Approximately 15 feet south of vineyard operations	41	33	58
NM2	Southwestern corner of project boundary	12:36 – 12:56 p.m.	Approximately 980 feet to centerline of Fairview Road	38	32	54
NM3	Southeast corner of project boundary	1:11 – 1:31 p.m.	Approximately 2,200 feet to centerline of Fairview Road	35	30	57

L_{eq} = average noise level equivalent; dBA = A-weighted decibel; L_{min} = minimum instantaneous noise level; L_{max} = maximum instantaneous noise level

Detailed sound level measurement data are included in Appendix G.

4.6.2 Regulatory Setting

a. Federal

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of project-related ambient noise level increases, as shown in Table 4.6-2. Based on the FICON research, a 5 dB increase in noise levels due to a project is required for a finding of significant noise impact where ambient noise levels without the project are less than 60 dB. Where pre-project ambient conditions are between 60 and 65 dB, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels, specifically pre-project noise levels in excess of 65 dB, a 1.5 dB increase is considered by FICON as the threshold of significance.

Table 4.6-2 FICON Noise Standards

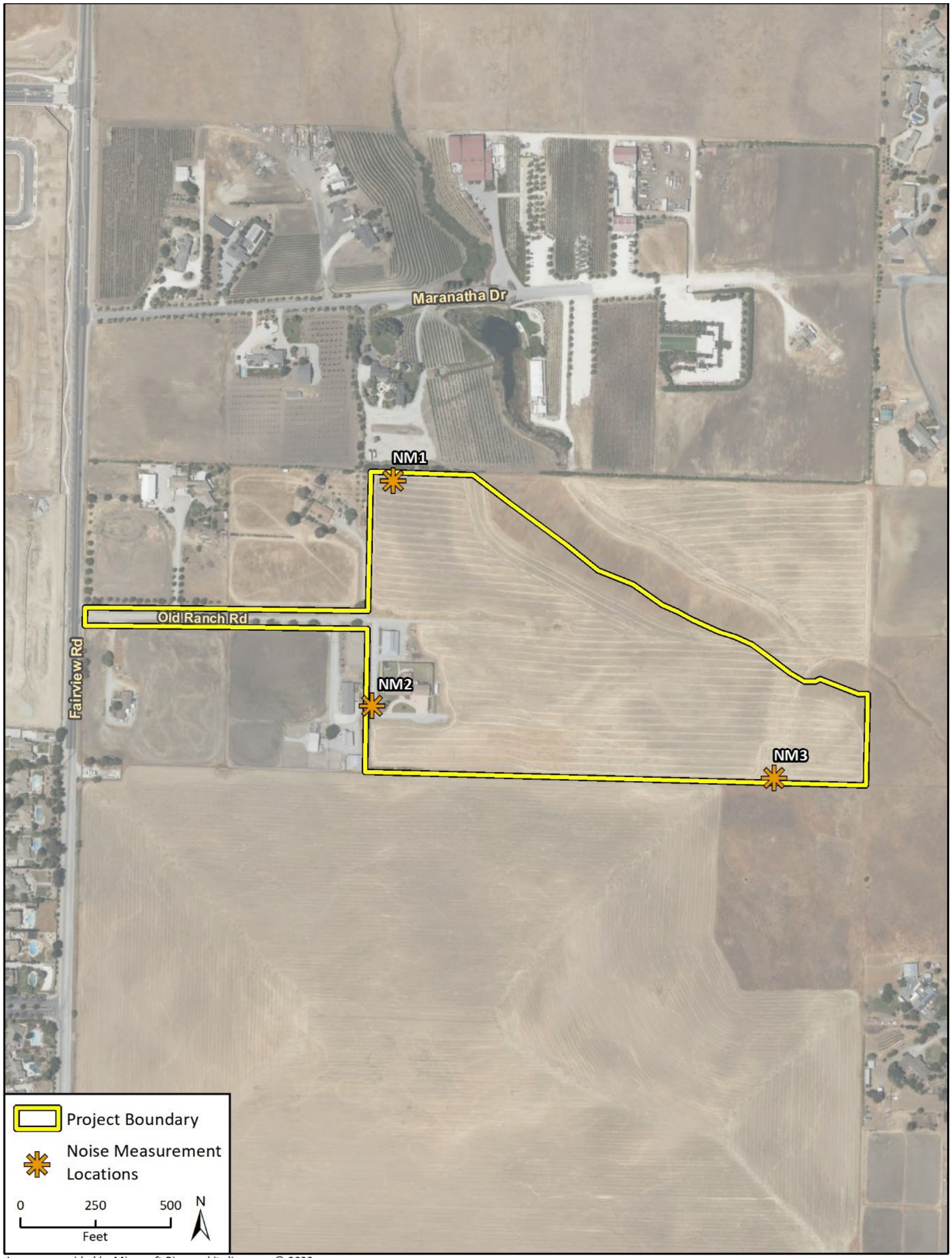
Ambient Noise Level Without Project (Ldn or CNEL)	Change in Ambient Noise Level Due to Project
< 60 dB	+5.0 dB or more
60 to 65 dB	+3.0 dB or more
> 65 dB	+1.5 dB or more

Source: FICON 1992

b. State

California Government Code Section 65302 requires each local government entity to implement a noise element as part of its General Plan. In addition, the California Governor's Office of Planning and Research has developed Guidelines for the Preparation and Content of Noise Elements of the General Plan (California Office of Planning and Research 2017). The guidelines include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The recommendations established by the Office of Planning and Research (California Office of Planning and Research 2017: Figure 2) are comparable to the standards adopted in the County's 2035 General Plan Health and Safety Element, as described below and shown in Table 4.6-4.

Figure 4.6-1 Noise Level Measurement Locations



Imagery provided by Microsoft Bing and its licensors © 2022.

c. Local

San Benito County 2035 General Plan

The Health and Safety Element of the San Benito County 2035 General Plan contains goals, policies, and actions to ensure that County residents are not subjected to noise beyond acceptable levels. The General Plan goals, policies, and actions that are applicable to the proposed project are listed below:

Health and Safety Element

Goal HS-8 To protect the health, safety, and welfare of County residents through the elimination of annoying or harmful noise levels.

HS-8.1 **Project Design.** The County shall require new development to comply with the noise standards shown in Tables 9-1 and 9-2 [refer to Table 4.6-3 and Table 4.6-4, below] through proper site and building design, such as building orientation, setbacks, barriers (e.g., earthen berms), and building construction practices. The County shall only consider the use of sound walls after all design-related noise mitigation measures have been evaluated or integrated into the proposed project or found infeasible.

HS-8.3 **Construction Noise.** The County shall control the operation of construction equipment at specific sound intensities and frequencies during day time hours between 7:00 a.m. and 6:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction shall be allowed on Sundays or federal holidays.

HS-8.5 **Aircraft Noise.** The County shall prohibit new noise-sensitive development within the projected future 60 dB Ldn noise contour of any public or private airports and private airstrips, and require that new noise-sensitive development within the projected future 55-60 dB CNEL complete an acoustical analysis demonstrating how residential units have been designed to meet an interior noise level of 45 dB CNEL.

HS-8.6 **Vibration Screening Distances.** The County shall require new residential and commercial uses located adjacent to major freeways or railroad tracks to follow the Federal Transit Administration (FTA) screening distance criteria.

HS-8.7 **Acceptable Vibration Levels.** The County shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based [on] FTA criteria.

HS-8.8 **Noise Exemptions.** The County shall support the exemption of the following noise sources from the standards in this element:

a. Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during the hours of 7:00 am to 10:00 pm.

b. Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.

c. Activities associated with County permitted temporary events and festivals.

HS-8.9 **Interior Noise Standards.** Adopt the State of California Code of regulations' (Title 24) minimum noise insulation interior performance standard of 45 dBA Ldn for all new residential construction including hotels, motels, dormitories, apartment houses, and single-family dwellings.

HS-8.10 **Reduction in Noise Levels at Existing Land Uses.** Reduce traffic noise levels where expected to significantly impact sensitive receptors through the installation of noise control measures such as quiet pavement surfaces, noise barriers, traffic calming measures, and interior sound insulation treatments.

HS-8.11 **New Project Noise Mitigation Requirements.** Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table 9-1 and 9-2 [refer to Table 4.6-3 and Table 4.6-4, below] standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table 9-2 at existing noise-sensitive areas in the project vicinity, unless an exception is made by the County on a case-by-case basis. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table 9-2 at the property line of the generating use in anticipation of the future residential development, unless an exception is made by the County on a case-by-case basis.

HS-8.12 **Construction Noise Control Plans.** Require all construction projects to be constructed within 500 feet of sensitive receptors to develop and implement construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:

- Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Notify all abutting land uses of the construction schedule in writing; and

Designate a "Disturbance coordinator" (e.g., contractor foreman or authorized representative) who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

The 2035 General Plan Health and Safety Element includes noise standards, as shown in Table 4.6-3 and Table 4.6-4 (Tables 9-1 and 9-2 as mentioned in Policies HS-8.1 and HS-8.11, above). These standards are applicable to the proposed project and to the existing uses in the surrounding area. Refer to Section 4.6.3, *Impact Analysis*, below, for a discussion of the applicability of these standards as thresholds of significance.

Table 4.6-3 Non-Transportation Interior Noise Level Performance Standards for Noise-Sensitive Uses

Noise Level Descriptor	Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Hourly L_{eq} dB	55	45
Maximum Level, dB	70	65

Note: These standards apply to new or existing residential areas affected by new or existing non-transportation sources.

Source: County of San Benito 2015

Table 4.6-4 Exterior Land Use Compatibility Guidelines for Community Noise Environments

Land Use Category	Clearly Acceptable (L_{dn}/CNEL, dB)	Normally Acceptable (L_{dn}/CNEL, dB)	Normally Unacceptable (L_{dn}/CNEL, dB)	Clearly Unacceptable (L_{dn}/CNEL, dB)
Residential – Low Density Single Family, Duplex, Mobile Homes	Up to 60	60 – 65	65 – 75	75 +
Residential – Multi-Family	Up to 60	60 – 65	65 – 75	75 +
Transient Lodging – Motels, Hotels	Up to 65	65 – 70	70 – 80	80 +
Schools, Libraries, Churches, Hospitals, Nursing Homes	Up to 60	60 – 65	65 – 75	75 +
Auditoriums, Concert Halls, Amphitheaters	–	Up to 60	60 – 75	75 +
Sports Arenas, Outdoor Spectator Sports	Up to 60	60 – 65	65 – 75	75 +
Playgrounds, Neighborhood Parks	Up to 55	55 – 65	65 – 75	75 +
Golf Course, Riding Stables, Water Recreation, Cemeteries	Up to 60	60 – 70	70 – 80	80 +
Office Buildings, Business Commercial and Professional	Up to 65	65 – 75	75 – 80	80 +
Industrial, Manufacturing Utilities, Agriculture	Up to 70	70 – 80	80 +	–

Clearly Acceptable: The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

Normally Acceptable: The noise exposure is great enough to be of some concern, but common building construction will make the indoor environment acceptable, even for sleeping quarters.

Normally Unacceptable: The noise exposure is significantly more sever so that unusual and costly building construction is necessary to ensure adequate performance of activities, (Residential areas: barriers must be created between the site and prominent noise sources to make the outdoor environment tolerable.)

Clearly Unacceptable: The noise exposure is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

Source: County of San Benito 2015

San Benito County Code of Ordinances

Section 19.39.030 of the San Benito County Code of Ordinances (Maximum Permissible Sound Pressure Levels) sets limits for exterior noise levels according to land use designation (reproduced below in Table 4.6-5). The County Code states that exterior noises levels identified in Table 4.6-5 shall not be exceeded at the property line of the receiving land use category.

Table 4.6-5 San Benito County Code Maximum Sound Level Standards

	Noise Level (dBA)	
Land Use Designation	**Day**	**Night**
Ag Rangeland, Ag Productive, Rural	45	35
Rural Transitional, Rural Residential	45	35
Single-Family (R1), Residential Multiple (RM), Planned Unit Development	50	40
Commercial (C-1), Commercial (C-2)	65	55
Controlled Manufacturing (CM), Light Industrial (M-1), Heavy Industrial (M-2)	70	60

Source: San Benito County Code of Ordinances, Title 19, Chapter 19.39, Article IV

Section 19.39.051 of the County Code provides exemptions from the noise level limits identified in Table 4.6-5 for certain activities. The exemptions that would be applicable to the project are provided below.

Chapter 19.39.051 Exemptions

The following activities shall be exempt from the provisions of this chapter:

B. Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;

H. Temporary construction, demolition or maintenance of structures between the hours of 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with the proposed project. Based on Appendix G of the *CEQA Guidelines,* impacts would be significant if they would:

1. 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.
2. Generate excessive ground-borne vibration or ground-borne 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 two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction related equipment noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receptors near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle[1] of the activity to determine the L_{eq} of the operation (FTA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

The County of San Benito does not specify quantitative construction noise thresholds. The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their *Transit and Noise Vibration Impact Assessment Manual* (FTA 2018). For residential, commercial, and industrial uses, the daytime noise threshold is 80 dBA L_{eq}, 85 dBA L_{eq}, and 90 dBA L_{eq} for an 8-hour period, respectively. These quantitative thresholds are used for the construction noise impact analysis.

On-site Construction

Construction activity would result in temporary noise in the project area, exposing surrounding sensitive receptors to increased noise levels. The project would involve demolition, site preparation, grading, building construction, paving, and architectural coating. Construction noise would typically be higher during the heavier periods of initial construction (i.e., grading) and would be lower during the later construction phases. Typical heavy construction equipment during project grading could include dozers, front-end loaders, and graders. It is assumed that diesel engines would power all construction equipment. Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the 8-hour operating day.

Off-site Construction

The project's on-site wastewater main would be extended with a portion of off-site wastewater main to traverse under Fairview Road and convey effluent from the project site to an existing City manhole on the west side of Fairview Road at the intersection with Old Ranch Road, adjacent to the planned Roberts Ranch Subdivision, which is currently vacant. The only portion of new off-site wastewater infrastructure required would be the section of pipeline under Fairview Road, connecting the on-site wastewater main to the off-site City manhole. From the manhole connection point, the City's existing wastewater conveyance system is sufficient to convey effluent from the project site to Hollister's DWRF. The nearest sensitive receptors to this location are the residences along Old Ranch Road on parcels adjacent to the project site boundary (refer to Section 4.6.1[c]). Therefore, off-site wastewater infrastructure construction is accounted for in the on-site construction analysis.

[1] The cycle of operation of a machine or other device which operates intermittently rather than continuously.

Ground-borne Vibration

The greatest vibratory source during construction would be anticipated to be from a large bulldozer. Neither blasting nor pile driving would be required for construction of the proposed project. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA (Caltrans 2020, FTA 2018). Table 4.6-6 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (FTA 2018).

Table 4.6-6 Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity (PPV) at 25 feet (inches per second)
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003
Source: FTA 2018	

Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). Maximum recommended vibration limits by the American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 4.6-7.

Table 4.6-7 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (inches per second)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5
Source: Caltrans 2020	

The limits in Table 4.6-7 are applicable regardless of the frequency of the source. However, as shown in Table 4.6-8 and Table 4.6-9, potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

Table 4.6-8 Human Response to Steady State Vibration

Peak Particle Velocity (PPV) (inches per second)	Human Response
3.6 (at 2 Hz)–0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz)–0.17 (at 20 Hz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible
Source: Caltrans 2020	

As shown in Table 4.6-8, the vibration level threshold at which steady vibration sources are considered to be distinctly perceptible is 0.035 inches per second (in/sec) PPV. However, as shown in Table 4.6-9, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.24 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts.

Table 4.6-9 Human Response to Transient Vibration

Peak Particle Velocity (PPV) (inches per second)	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible
Source: Caltrans 2020	

Although ground-borne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors and the vibration level threshold for human perception is assessed at occupied structures (FTA 2018). Therefore, vibration impacts are assessed at the structure of an affected property.

Operational Noise

On-site noise sources would include those typically associated with residential activities, including landscape maintenance, general outdoor activities, vehicle traffic, and heating, ventilation, and air conditioning (HVAC) units. Due to the distances to sensitive receptors, similarity to noise generated by neighboring land uses, and the temporary nature of noise events associated with general outdoor activities, and landscape maintenance, these sources are not considered substantial and are not analyzed further. Thus, the primary noise sources of concern from project operation would be HVAC units and traffic noise.

Heating, Ventilation, and Air Conditioning Units

Specific planning data for the future HVAC systems are not available at this stage of project design; however, analysis using a typical to larger-sized residential condenser provides a reasonable basis for analysis. The unit used in this analysis is a Carrier 38HDR060 split system condenser. The manufacturer’s noise data lists the unit as having a sound power level of 72 dBA (see Appendix G for manufacturer’s specifications). It is assumed that HVAC units would be distributed across the project site would produce a combined noise level at off-site receptors that is equivalent to all units being located at the center of the project site, which is measured at approximately 830 feet from the nearest off-site sensitive receptor west of the project boundary. Table 4.6-10 shows the modeled HVAC units associated with the project.

Table 4.6-10 Modeled HVAC

Use/Description	Proposed Residential Units	Model	Estimated HVAC Units	Sound Power Level per Unit
Residential Unit[1]	171	38HDR060	171	72

[1] Note that this conservatively includes proposed single-family detached, single-family attached, and accessory dwelling units. The single-family attached and accessory dwelling units may use smaller HVAC units due to the smaller size of the units. Therefore, this analysis is conservative.
See Appendix G for sample HVAC specification sheets.

Traffic Noise

Noise affecting the project site is primarily from traffic on Fairview Road and State Route (SR) 25/Airline Highway. Noise levels with and without project-generated traffic were developed based on algorithms and reference levels from the FHWA Traffic Noise Model. Project traffic was estimated using average daily trips (ADT) that were derived from intersection turning volumes in the project's Transportation Analysis (included as Appendix H). Traffic scenarios depicted in this analysis include existing conditions and background conditions. Background conditions are defined as existing volumes on roadway networks between the existing and cumulative model runs, based on growth rates.

The posted speed limit on Ridgemark Drive is 30 miles per hour (mph). The posted speed limit on Fairview Road and Union Road is 45 mph, while the posted speed limit for SR 25/Airline Highway is 65 mph. The vehicle classification mix for modeling assumes a typical breakdown of 97 percent automobiles, 2 percent medium trucks, and 1 percent heavy trucks. Traffic distribution through the day was modeled assuming 85 percent of total daily vehicle traffic during daytime hours and 15 percent of daily vehicle traffic during nighttime hours.

b. Project Impacts and Mitigation Measures

Threshold 1:	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?

Impact NOI-1 OPERATION OF THE PROJECT WOULD NOT GENERATE NOISE IN EXCESS OF ESTABLISHED STANDARDS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction

On-site Construction

Project construction would occur nearest to single-family residences to the west of the project site. Over the course of a typical construction day, construction equipment would be located as close as 50 feet to adjacent properties when accounting for setbacks but would typically be located at an average distance farther away due to the nature of construction and the size of the project. Therefore, it is assumed that over the course of a typical construction day the construction equipment would operate at a conservative average distance of 100 feet from the residences to the west of the project site.

Construction noise is typically loudest during activities that involve excavation and moving soil, such as site preparation and grading. A potential high-intensity construction scenario includes a bulldozer, dump truck, and front-end loader working during grading to excavate and move soil. At a distance of 100 feet, a bulldozer, dump truck, and front-end loader would generate a noise level of 75 dBA L_{eq} (RCNM calculations are included in Appendix G). This would be below the FTA daytime threshold of 80 dBA L_{eq} (8-hour) for construction activity. Therefore, impacts from construction equipment would be less than significant.

Operation

Mechanical Equipment Noise

The project would include an estimated 171 HVAC units for the proposed residences. Per Section 19.39.030 of the San Benito County Code*,* project impacts would be significant if exterior noise levels at residential land use designations would exceed 50 dBA L_{eq} in exterior areas during the day and 40 dBA L_{eq} during the night. The combined operation of 171 HVAC units would generate an estimated noise level of 38 dBA L_{eq} at the nearest off-site sensitive receptors west of the project site boundary along Old Ranch Road (Appendix G). This analysis conservatively assumes no screening on the HVAC units. Therefore, HVAC noise levels would not exceed San Benito County Code limits. Additionally, ambient noise levels as measured in Table 4.6-1 show that the ambient noise levels for the surrounding area are lower than 60 dBA; therefore, the FICON ambient noise level change threshold of 5 dBA or more would apply. The addition of the project HVAC noise would increase ambient noise levels up to 39.8 dBA (i.e., 38 dBA when logarithmically added to an ambient noise level of 35 dBA would result in an overall noise level of 39.8). This would not exceed FICON ambient noise level change of 5 dBA or more for existing ambient noise levels lower than 60 dBA. Therefore, operational impacts from mechanical equipment would be less than significant.

Off-site Traffic Noise Increases

The project would not make substantial alterations to existing roadway alignments or substantially change the vehicle classifications mix on local roadways. Therefore, the primary factor affecting off-site noise levels would be increased traffic volumes from the proposed project. Noise levels with and without project-generated traffic for the existing volumes and background volumes are shown in Table 4.6-11 and Table 4.6-12. As shown in the tables, traffic noise increases would be 1 dBA or less, which would not exceed the 3 dBA criterion for off-site traffic noise impacts (FICON 1992). Therefore, operational impacts from traffic increases would be less than significant.

Table 4.6-11 Existing and Existing Plus Project Traffic Noise

Roadway	Segment	Speed (mph)	Existing Volume[1] (ADT)	Existing Plus Project Volume[2] (ADT)	Existing Noise Level[1] (dBA)	Existing Plus Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA)
SR 25/Airline Highway	Union Road to Valaire Drive (North)	65	11,360	11,690	74	74	<1
Union Road	SR 25/Airline Highway to Valley View Road (East)	45	7,040	7,070	69	69	0
Union Road	SR 25/Airline Highway to Southside Road (West)	45	9,720	9,960	71	71	<1
SR 25/Airline Highway	Union Road to Enterprise Road (South)	65	9,080	9,680	73	73	<1
Fairview Road	Union Road to John Smith Road (North)	45	3,840	4,770	67	68	1
Union Road4	Fairview Road to Calistoga Drive (West)	45	N/A	N/A	N/A	N/A	N/A
Fairview Road	Union Road to Maranatha Drive (South)	45	3,840	4,770	67	68	1
Fairview Road	Sunnyslope Road to Hilcrest Road (North)	45	7,140	7,780	69	70	<1

Roadway	Segment	Speed (mph)	Existing Volume[1] (ADT)	Existing Plus Project Volume[2] (ADT)	Existing Noise Level[1] (dBA)	Existing Plus Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA)
Sunnyslope Road	Fairview Road to Sunflower Drive (East)	25	1,710	1,710	60	60	0
Sunnyslope Road	Fairview Road to Beverly Drive (West)	25	4,460	4,760	64	65	<1
Fairview Road	Sunnyslope Road to John Smith Road (South)	45	4,430	5,370	67	68	1
Fairview Road	SR 25/Airline Highway to Old Ranch Road (North)	45	3,840	4,500	67	67	1
SR 25/Airline Highway	Fairview Road to Enterprise Road (East)	65	5,320	5,380	71	71	0
SR 25/Airline Highway	Fairview Road to Enterprise Road (West)	65	7,690	8,290	72	73	<1
Ridgemark Drive	SR 25/Airline Highway to Joes Lane (South)	30	3,790	3,950	65	65	<1

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour

[1] Transportation Analysis Existing PM Peak hour trips

[2] Transportation Analysis Project Trip Distribution

[3]Numbers may not add up due to rounding.

[4] Extension does not currently exist.

Source: Appendix H; noise modeling worksheets provided in Appendix G

Table 4.6-12 Background and Background Plus Project Traffic Noise

Roadway	Segment	Speed (mph)	Background Volume[1] (ADT)	Background Plus Project Volume[2] (ADT)	Background Noise Level[1] (dBA)	Background Plus Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA))
SR 25/Airline Highway	Union Road to Valaire Drive (North)	65	18,330	18,990	76	76	<1
Union Road	SR 25/Airline Highway to Valley View Road (East)	45	10,810	11,430	71	71	<1
Union Road	SR 25/Airline Highway to Southside Road (West)	45	14,600	14,840	72	73	<1
SR 25/Airline Highway	Union Road to Enterprise Road (South)	65	12,780	13,060	74	75	<1
Fairview Road	Union Road to John Smith Road (North)	45	9,170	9,770	70	71	<1
Union Road	Fairview Road to Calistoga Drive (West)	45	4,340	4,990	67	68	1
Fairview Road	Union Road to Maranatha Drive (South)	45	6,630	7,880	69	70	1

Roadway	Segment	Speed (mph)	Background Volume[1] (ADT)	Background Plus Project Volume[2] (ADT)	Background Noise Level[1] (dBA)	Background Plus Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA))
Fairview Road	Sunnyslope Road to Hilcrest Road (North)	45	13,480	13,910	72	71	0
Sunnyslope Road	Fairview Road to Sunflower Drive (East)	25	7,910	7,910	67	67	0
Sunnyslope Road	Fairview Road to Beverly Drive (West)	25	10,700	10,870	68	68	<1
Fairview Road	Sunnyslope Road to John Smith Road (South)	45	9,950	10,550	71	71	<1
Fairview Road	SR 25/Airline Highway to Old Ranch Road (North)	45	5,850	6,190	68	69	<1
SR 25/Airline Highway	Fairview Road to Enterprise Road (East)	65	7,640	7,700	72	72	0
SR 25/Airline Highway	Fairview Road to Enterprise Road (West)	65	9,860	10,140	73	73	<1
Ridgemark Drive	SR 25/Airline Highway to Joes Lane (South)	30	6,060	4,130	67	65	0

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour

[1] Transportation Analysis Background PM Peak hour trips

[2] Transportation Analysis Background plus Project Trip Distribution

[3] Numbers may not add up due to rounding.

Source: Appendix H; noise modeling worksheets provided in Appendix G

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

IMPACT NOI-2 CONSTRUCTION AND OPERATION OF THE PROJECT WOULD NOT EXCEED VIBRATION THRESHOLDS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

On-site Construction

Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be required for on-site construction of the project. The greatest anticipated source of vibration during general project construction activities would be from a bulldozer, which would be used during site preparation and grading activities and may be used within 50 feet of the nearest residential building when accounting for setbacks. A bulldozer would create approximately 0.089 in/sec PPV at 25 feet (Caltrans 2020). This would equal a vibration level of 0.042 in/sec PPV at a distance of 50 feet.[2] This would not exceed what is considered a distinctly perceptible impact for humans of 0.24 in/sec PPV, or the structural damage impact to residential structures of 0.2 in/sec PPV. Therefore, vibration associated with on-site construction of the project would be less than significant.

Off-site Construction

Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be required for off-site project construction of wastewater infrastructure. Equipment typically associated with pipeline construction includes a concrete saw and a loader. For a conservative analysis, it was assumed a loader has the same vibration level of a bulldozer, which would create approximately 0.089 in/sec PPV at 25 feet (Caltrans 2020). This would equal a vibration level of 0.119 in/sec PPV at a distance of 20 feet. This would not exceed what is considered a distinctly perceptible impact for humans of 0.24 in/sec PPV, or the structural damage impact to residential structures of 0.2 in/sec PPV. Therefore, vibration associated with off-site construction of wastewater infrastructure would be less than significant.

Operation

The project does not include substantial vibration sources associated with operation. Therefore, operational vibration impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

[2] PPV Equipment = PPV Ref $(10/D)^n$ (in/sec), PPV Ref = reference PPV at 10 feet, D = distance ,and n = 1.1

Threshold 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 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?

Impact NOI-3 **THE PROJECT SITE IS LOCATED OUTSIDE OF NOISE CONTOURS ASSOCIATED WITH AIRPORTS. THEREFORE, NEW DEVELOPMENT UNDER THE PROPOSED PROJECT WOULD NOT BE EXPOSED TO EXCESSIVE NOISE LEVELS FROM AIRCRAFT OPERATIONS AND NO IMPACT WOULD OCCUR.**

The project site is not located within an airport land use plan boundary, or within two miles of a public or private airport. The closest airport is the Hollister Municipal Airport, which is located approximately 5 miles northwest of the project site, and the project would not be within identified noise contours of the airport (County of San Benito 2012). Therefore, the project would result in no impact related to exposure of future residents to aircraft noise.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

No impact would occur.

4.6.4 Cumulative Impacts

The geographic extent for the analysis of cumulative short-term and long-term noise is generally limited to areas within 500 hundred feet of noise generation. This distance is identified by County General Plan Policy HS-8.12, which requires all construction projects located within 500 feet of sensitive receptors to implement a Construction Noise Control Plan. This distance is identified due to the rapid noise level attenuation that occurs with distance. In other words, noise that occurs 500 feet from another noise source will typically substantially lower than the localized noise source and ambient noise levels and would result in a negligible addition to noise levels. As such, this geographic extent is appropriate for construction noise, operational noise, and vibration.

New development identified in Table 3-1 could result in a cumulative increase in short-term construction noise if their construction phases overlap with the proposed project. As these projects would perform similar construction activities to the proposed project, their construction noise and vibration levels would be anticipated to not exceed applicable thresholds as determined in this analysis. In addition, as stated above, construction noise and vibration attenuate rapidly with distance and at distance of several hundred feet from the source result in negligible contributions to cumulative noise levels. Therefore, there would not be a cumulative short-term construction noise or vibration impact, and short-term construction noise and vibration impacts from the project would not result in a cumulatively considerable contribution to noise levels.

Future traffic noise was analyzed in cumulative, future scenarios (background; background plus proposed; cumulative year; cumulative year plus project). Cumulative traffic scenarios were derived from the Transportation Analysis prepared for the project (included as Appendix H). Cumulative conditions include the existing traffic volumes plus forecasted long-term traffic growth along roadway networks. Projected cumulative traffic noise levels with and without project-generated traffic are shown in Table 4.6-13.

Table 4.6-13 Cumulative Year and Cumulative Year + Project Traffic Noise

Roadway	Segment	Speed (mph)	Cumulative Volume[1] (ADT)	Cumulative + Project Volume[2] (ADT)	Cumulative Noise Level[1] (dBA)	Cumulative + Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA))
SR 25/Airline Highway	Union Road to Valaire Drive (North)	65	34,990	35,650	79	79	<1
Union Road	SR 25/Airline Highway to Valley View Road (East)	45	15,020	15,640	73	73	<1
Union Road	SR 25/Airline Highway to Southside Road (West)	45	17,430	17,670	73	73	<1
SR 25/Airline Highway	Union Road to Enterprise Road (South)	65	29,060	29,340	78	78	0
Fairview Road	Union Road to John Smith Road (North)	45	11,330	11,550	71	71	<1
Union Road	Fairview Road to Calistoga Drive (West)	45	4,430	5,080	67	68	1
Fairview Road	Union Road to Maranatha Drive (South)	45	8,320	9,570	70	71	1
Fairview Road	Sunnyslope Road to Hilcrest Road (North)	45	15,370	15,800	73	73	<1
Sunnyslope Road	Fairview Road to Sunflower Drive (East)	25	7,910	7,910	67	67	0
Sunnyslope Road	Fairview Road to Beverly Drive (West)	25	10,880	11,050	68	68	<1
Fairview Road	Sunnyslope Road to John Smith Road (South)	45	11,980	12,580	72	72	<1
Fairview Road	SR 25/Airline Highway to Old Ranch Road (North)	45	7,540	7,880	70	70	<1
SR 25/Airline Highway	Fairview Road to Enterprise Road (East)	65	22,280	22,340	77	77	0
SR 25/Airline Highway	Fairview Road to Enterprise Road (West)	65	26,140	26,420	78	78	0

Roadway	Segment	Speed (mph)	Cumulative Volume[1] (ADT)	Cumulative + Project Volume[2] (ADT)	Cumulative Noise Level[1] (dBA)	Cumulative + Project Noise Level[2] (dBA)	Noise Level Increase[3] (dBA))
Ridgemark Drive	SR 25/Airline Highway to Joes Lane (South)	30	7,400	7,400	68	68	0

dBA = A-weighted decibels; ADT = average daily trips; mph = miles per hour

[1] Transportation Analysis Cumulative Year PM Peak Hour Trips

[2] Transportation Analysis Cumulative Year plus Project Trip Distribution

[3]Numbers may not add up due to rounding.

Source: Appendix H; noise modeling worksheets provided in Appendix G

As shown in the table, traffic noise increases would be 1 dBA or less, which would not exceed the 3 dBA criterion for off-site traffic noise impacts and traffic noise increases from the proposed project would not exceed applicable thresholds (FICON 1992). New development associated with cumulative projects (see Table 3-1) would include mechanical equipment (HVAC units). However, noise from these projects would be localized and would not combine substantially with noise sources from the project site at nearby sensitive receptors west of the project site. In addition, implementation of the proposed project would not involve substantial vibration sources associated with operation, and the types of surrounding land uses to the project site (residential and agricultural) would not be expected to involve substantial vibration sources that would cumulatively combine with project site vibration sources. Therefore, there would not be a long-term cumulative noise impact, and project operational stationary noise and vibration sources would not combine with other area sources to result in a cumulatively considerable increase in noise and vibration.

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4.7 Transportation

This section presents the key assumptions, methods, and results of analysis for the transportation and circulation impacts of the proposed project. This section is based on, among other things, the Lee Subdivision Residential Transportation Analysis prepared by Hexagon Traffic Consultants in May 2022 and provided as Appendix H to this EIR, and Final VMT Analysis prepared by Kimley-Horn in April 2024 and provided as Appendix I to this EIR.

4.7.1 Setting

a. Existing Roadway Network

Roadways in proximity to the project site, including roadways providing access to the San Benito County region include:

- **State Route 25 (SR 25)/Airline Highway** is a two-lane highway that begins at Highway 101 in Gilroy and extends southward through Hollister towards Paicines. SR 25 is also designated as Hollister Road, Bolsa Road, Pinnacles National Park Highway, and Airline Highway. SR 25 has posted speed limits of 40 and 45 miles per hour (mph) within the City of Hollister, and 55 mph outside the city. Bicycle lanes are present between Sunnyslope Road and San Felipe Road. SR 25 provides access to the project site via its intersections with Santa Ana Road, Hillcrest Road, Sunnyslope Road, and Fairview Road. Airline Highway is a two- to four-lane arterial roadway which is part of SR 25 and begins at Tres Pinos Road/Sunnyslope Road in the south part of Hollister.
- **SR 156** is a two-lane highway between Highway 101 and Highway 152 and a four-lane divided highway between San Juan Bautista and US 101. SR 156 has a posted speed limit of 55 mph. SR 156 provides access to the project site via its intersections with Union Road, Fairview Road, and SR 25/Airline Highway.
- **Fairview Road** is a two-lane north-south collector with a posted speed limit of 55 mph, no bike lane, and intermittent sidewalks. Fairview Road transitions into Ridgemark Drive south of SR 25/Airline Highway. Access from Fairview Road to the project site is provided via Old Ranch Road.
- **Sunnyslope Road** is a four-lane roadway between Fairview Road and SR 25/Airline Highway. Sunnyslope Road has a posted speed limit of 35 mph with bike lanes and sidewalks on both sides of the street. Access to the project site from Sunnyslope Road is provided via its intersection with Fairview Road.
- **Hillcrest Road** is a two-to-four-lane roadway between Fairview Road and McCray Street. Hillcrest Road has posted speed limits between 35 and 45 mph and intermittent sidewalks. No bike lanes are present on Hillcrest Road. Access to the project site from Hillcrest Road is provided via its intersection with Fairview Road.
- **Santa Ana Road** is a two-to-three-lane roadway between Fairview Road and San Benito Street. Santa Ana Road has posted speed limits between 25 and 40 mph and intermittent sidewalks. Access to the project site from Santa Ana Road is provided via its intersection with Fairview Road.
- **Union Road** is a two-lane roadway between SR 156 and beyond SR 25/Airline Highway. East of SR 25/Airline Highway, Union Road has a posted speed limit of 35 mph with bike lanes and sidewalks on both sides of the street. West of SR 25/Airline Highway, Union Road has a posted

speed limit of 55 mph with no bike lane or sidewalk. Access to the project site from Union Road is provided via its intersection with Fairview Road.

- **Old Ranch Road** is a private two-lane roadway that provides direct access to the project from Fairview Road. Old Ranch Road has no shoulders, centerline, bike lanes, or on-street parking.

b. Truck Routes

The Circulation Element of the County's 2035 General Plan states that "The County shall designate truck routes for the transport of goods throughout the County and shall adopt regulations for designated truck routes" and "shall encourage inter- and intra- regional truck traffic to use state and federal highways, to maintain the primary role of County roads as serving local and agricultural traffic" (San Benito County 2015). SR 25/Airline Highway through San Benito County is a California Legal Advisory Truck Route located approximately 0.5 mile south of the project site.

c. Existing Transit Facilities

The San Benito County Express (County Express) is the regional transit system and is operated by the San Benito County Local Transportation Authority (LTA). County Express provides transportation service to the communities of Hollister and San Juan Bautista in San Benito County, as well as the City of Gilroy in Santa Clara County. As shown on Figure 4.7-1, the nearest bus stop to the project site is located along Calistoga Drive, just north of Union Road, approximately 0.8 mile northwest of the project site.

LTA also provides Dial-a-Ride service to northern San Benito County, including Hollister, San Juan Bautista, and Tres Pinos on weekdays from 6 a.m. to 6 p.m. and weekends between 9 a.m. and 3 p.m. Two types of Dial-a-Ride service are available: general public and paratransit. General public Dial-a-Ride serves those persons whose trips begin or end in a location more than 0.75 mile from the nearest fixed route. Paratransit service provides rides to persons who have been determined to be Americans with Disabilities Act (ADA)-eligible through the LTA application process. Appointments for Dial-a-Ride service can be made up to 14 days in advance or on the day of the ride.

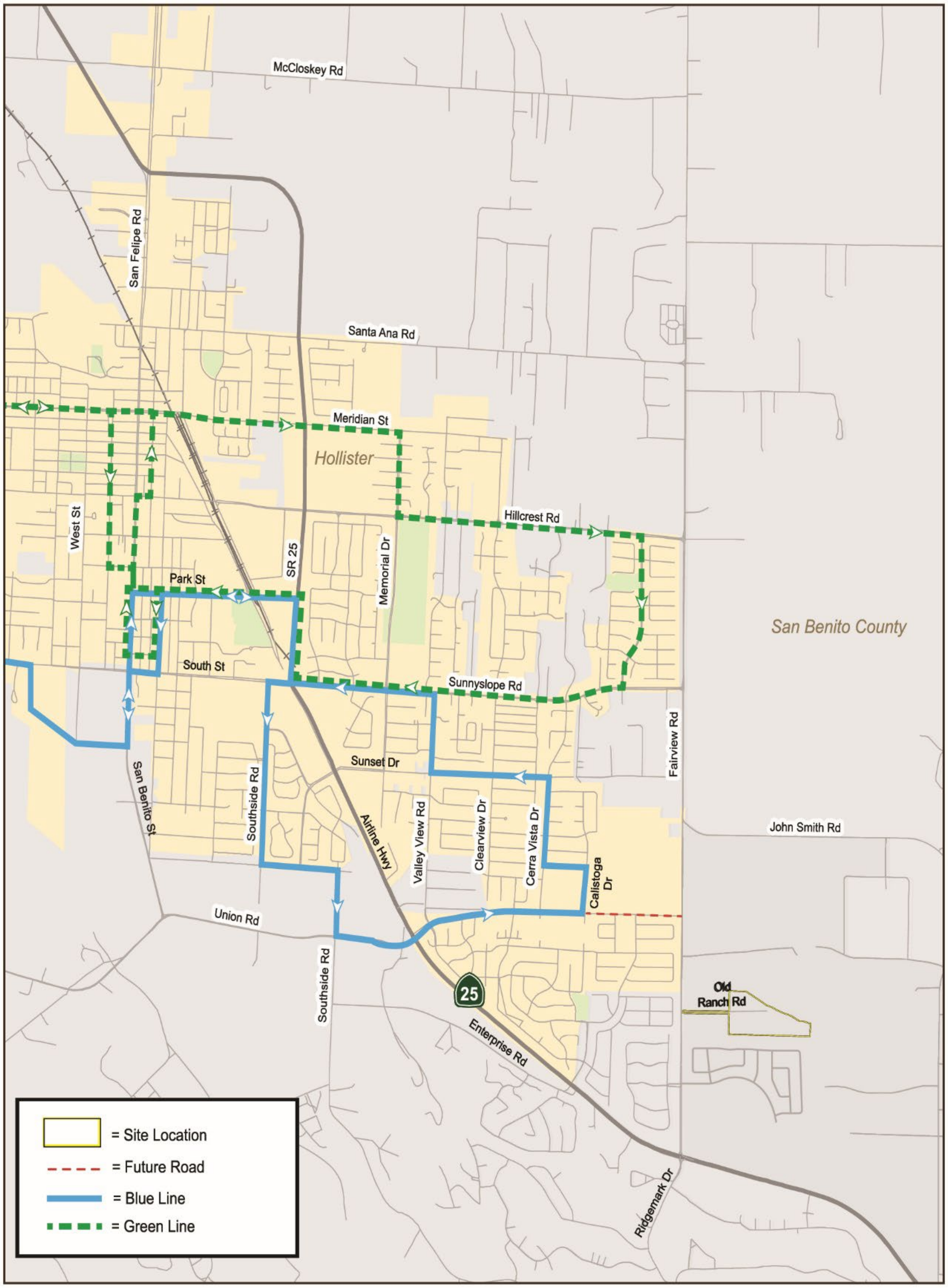
County Express's inter-county service includes service to the Gilroy Transit Center. Shuttle service to the Gilroy Transit Center operates Monday through Friday from 4:55 a.m. to 8:20 p.m. and connects to Caltrain to provide service between Gilroy and San Francisco. Regular service to Gavilan College is also provided during the school year.

d. Pedestrian and Bicycle Facilities

Pedestrian facilities in the unincorporated areas of the county are generally discontinuous or non-existent. In the vicinity of the site, many roadways do not provide sidewalks, including areas along Fairview Road and SR 25/Airline Highway. The lack of sidewalks along surrounding streets in the area does not support pedestrian travel between the project site and other pedestrian destinations, such as schools and transit stops.

Bicycle facilities are divided into three classes of relative significance. Class I bikeways are bike paths that are physically separated from motor vehicles and offer two-way bicycle travel on a separate path. Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings. Class III bikeways are bike routes and only have signs to help guide bicyclists on recommended routes to certain locations. Currently, the project site is not served directly by any bicycle facilities, as shown in Figure 4.7-2. However, Class II bike lanes are provided on the following roadways (denoted by travel distance from the site):

Figure 4.7-1 Existing Transit Facilities



Source: Hexagon, 2022.

Not to Scale N

Figure 4.7-2 Existing Bicycle Facilities

Not to Scale

N

Source: Hexagon, 2022.

1. Union Road between SR 25/Airline Highway and Cerra Vista Drive (approximately 0.7 mile west of the project site)
2. Sunnyslope Road between Cerra Vista Drive and Fairview Road (approximately 1.2 miles northwest of the project site)
3. Fairview Road between Sunnyslope Road and Hillcrest Road (approximately 1.4 miles north of the project site)
4. Southside Road from north of Union Road to just south of Hospital Road, and between Sunset Drive and San Benito Street (approximately 1.5 miles northwest of the project site)
5. Sunnyslope Road between SR 25/Airline Highway and Memorial Drive (approximately 1.7 miles northwest of the project site)

4.7.2 Regulatory Setting

a. Federal

The ADA of 1990 prohibits discrimination toward people with disabilities and guarantees, among other things, that they have equal opportunities as the rest of society to become employed, purchase goods and services, and participate in government programs and services. The ADA includes requirements pertaining to transportation infrastructure. The Department of Justice's revised regulations for Titles II and III of the ADA, known as the 2010 ADA Standards for Accessible Designs, set minimum requirements for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. These standards apply to accessible walking routes, curb ramps, and other facilities.

b. State

California Transportation Development Act

The Mills-Alquist-Deddeh Act (Senate Bill [SB] 325) (also known as the Transportation Development Act) was enacted in 1971 to improve public transportation services and encourage regional transportation coordination. This law provides funding to be allocated to transit and non-transit related purposes that comply with regional transportation plans. The Transportation Development Act provides two funding sources: 1) the Local Transportation Fund, which is derived from a 0.25 percent of the general sales tax collected statewide, and 2) the State Transit Assistance fund, which is derived from the statewide sales tax on diesel fuel.

Senate Bill 743

SB 743 was signed into law by Governor Brown in 2013 and tasked the State Office of Planning and Research (OPR) with establishing new criteria and metrics for identifying and mitigating transportation impacts under CEQA. In January 2018, the OPR transmitted its proposed *CEQA Guidelines* implementing SB 743 to the California Natural Resources Agency for adoption, and in January 2019 the Natural Resources Agency finalized updates to the *CEQA Guidelines*, which incorporated SB 743 modifications, and are now in effect. SB 743 changed the way that public agencies evaluate the transportation impacts of a project, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact. In addition to new exemptions for projects consistent with specific plans, the *CEQA Guidelines* replaced congestion-based metrics, such as auto delay and level of service, with vehicle miles traveled (VMT) as the basis for determining significant impacts, unless the Guidelines provide specific exceptions. VMT is generally defined as the total miles of travel by personal motorized vehicles a project is expected to generate in a day. When assessing a residential project, the project generated home-based VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. For land use projects, OPR identified VMT per capita, VMT per employee, and net VMT as new metrics for transportation analysis.

CEQA Guidelines Section 15064.3

Originating from SB 743, Section 15064.3 of the *CEQA Guidelines* establishes VMT as the most appropriate measure of transportation impacts, shifting away from the level of service (LOS) analysis that evaluated a project's impacts on traffic conditions on nearby roadways and intersections. Section 15064.3 does the following:

- Identifies VMT (amount and distance of automobile traffic attributable to a project) as the most appropriate measure of transportation impacts;
- Declares that a project's effect on automobile delay shall not constitute a significant environmental impact (except for projects increasing roadway capacity);
- Creates a rebuttable presumption of no significant transportation impacts for (a) land use projects within 0.5 mile of either an existing major transit stop or a stop along an existing high quality transit corridor, (b) land use projects that reduce VMT below existing conditions, and (c) transportation projects that reduce or have no impact on VMT;
- Allows a lead agency to qualitatively evaluate VMT if existing models are not available; and
- Gives lead agencies discretion to select a methodology to evaluate a project's VMT but requires lead agencies to document that methodology in the environmental document prepared for the project.

In December 2018, OPR issued a Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018). The technical advisory contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The technical advisory suggests a significance threshold for VMT that is based on state mandated GHG emission reduction targets. The technical advisory recommends a quantitative per capita or per employee VMT that is 15 percent below that of existing development as a possible threshold of significance that would comply with the state's long-term climate goals.

c. Local

Association of Monterey Bay Area Governments

In June 2022, the Association of Monterey Bay Area Governments (AMBAG) adopted the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (2045 MTP/SCS). The 2045 MTP/SCS is a 23-year planning document that guides the development of the transportation system in the San Benito County region. The role of the 2045 MTP/SCS is to further goals of improving access and mobility and promoting healthy communities, social equity, and safety. The 2045 MTP/SCS identifies the existing transportation conditions and plans future improvements based on growth, approved plans, public input, stakeholder collaboration and AMBAG/San Benito Council of Governments Board direction. These policies include providing convenient, accessible, and reliable travel options; fostering efficient development patterns that encourage active transportation, providing an equitable level of transportation services to all segments of the population, ensuring safe regional transportation, supporting investments that have a direct impact on retail spending and job growth, and promote environment sustainability while protecting the natural environment of the region.

San Benito County 2035 General Plan

The San Benito County 2035 General Plan Land Use Element, Circulation Element, Public Facilities and Services Element, and Health and Safety Element provide the following goals, policies and objectives regarding transportation:

Land Use Element

LU-2.7 **Sustainable Location Factor.** The County shall encourage new development in locations that provide connectivity between existing transportation facilities to increase efficiency, reduce congestion, and improve safety.

LU-4.2 **Urban Residential Development.** The County shall ensure new urban residential development (e.g., greater than two units per acre) occurs in areas that have, or can provide, adequate public facilities and services to support such uses, and are near existing and future major transportation networks, transit and/or bicycle corridors, pedestrian paths and trails, and employment centers.

Circulation Element

Goal C-1 To provide an adequate road system that is safe, efficient, reliable, and within the County's ability to finance and maintain.

C-1.5 **Mitigating Transportation Impacts.** The County shall assess fees on all new development to ensure new development pays its fair share of the costs for new and expanded transportation facilities, as applicable, to County, City, regional and/or State facilities.

C-1.10 **Street Network Plans.** The County shall require project applicants to prepare a street network plan for any subdivision proposal located near existing, approved, or proposed development (county or city). The plan shall illustrate how adjoining properties will inter-connect over the long-term and how the plan will improve pedestrian and bicycle connectivity. The plan shall include an interim access plan and a long-term plan that consolidates vehicular access onto arterials/collectors (via street network design, or some other method).

C-1.15 **Street Networks that Enhance Neighborhood Character.** The County shall encourage traditional interconnected street networks that provide alternate routes between neighborhoods and other measures that slow neighborhood traffic and enhance neighborhood character, such as those associated with Complete Streets.

Goal C-2 To provide a safe, continuous, and accessible system of facilities for bicycle and pedestrian travel in appropriate areas of the County.

C-2.1 **Bicycle, Pedestrian, and Equestrian Systems.** The County shall encourage complete, safe, and interconnected bicycle, pedestrian, and equestrian systems, as appropriate to the context, that serve both commuter travel and recreational use, and provide access to major destinations in the county.

C-2.2 **Pedestrian and Bike Path Construction.** The County shall plan, design, and construct pedestrian routes and bikeways consistent with the 2009 County Bikeway and Pedestrian Master Plan or its succeeding plan. Priority shall be given to bicycle commuting routes, routes to schools, bike lanes on all new streets classified as arterials or collectors, and bike lanes on or adjacent to existing heavily traveled roads.

C-2.6 **Development Along Planned Bikeways.** The County shall require project applicants of new developments adjacent to designated bikeways to provide the portion of the planned bikeway within the development, including rights-of-way dedication and/or construction when (1) a nexus can be established between the proposed development and the dedication and/or construction; and (2) the dedication and/or construction would be roughly proportional to the development's impacts.

C-2.8 **Sidewalks or Pedestrian Paths in Subdivisions.** The County shall encourage project applicants to provide sidewalks or pedestrian paths, or other safe and convenient accommodations for pedestrians (e.g., shared-space streets) on all new roads or modifications to existing roads, as appropriate to the context, in accordance with County road-way design standards.

C-2.10 **Paths Through Cul-de-Sacs.** The County shall encourage developments at a density of one unit per acre or greater to include paths for bicycle and pedestrian traffic through or near the ends of loop streets and cul-de-sacs over 500 feet in length and to facilitate bicycle and pedestrian travel.

C-2.11 **Curb Ramps.** The County shall require developments to include curb ramps at new intersections, consistent with ADA requirements.

C-3.8 **Transit in New Development.** The County shall require new development at densities of one unit per acre or greater to provide funding for or construct transit stops and signs in appropriate locations and facilitate access to existing or future public transit through project design, consistent with the Local Transportation Authority Transit Design Guidelines.

Public Facilities & Safety Element

PFS-1.12 **New Development Requirements.** The County shall require new development, in compliance with local, State, and federal law, to mitigate project impacts associated with public facilities and services, including, but not limited to, fire, law enforcement, water, wastewater, schools, infrastructure, roads, and pedestrian and bicycle facilities through the use of annexation fees, connection fees, facility construction/expansion requirements, or other appropriate methods.

Health and Safety Element

HS-1.11 **Road Capacity.** The County shall require roads to be of adequate capacity for use in times of emergency.

San Benito County Bikeway and Pedestrian Master Plan (2009)

The Bikeway and Pedestrian Master Plan provides the following goals, policies, objectives, and standards regarding bicycle and pedestrian facilities within the County (San Benito Council of Governments 2009). The following goals and objectives in the Bikeway and Pedestrian Master Plan pertain to increasing access for bicyclists and pedestrians:

Goal 1 Increase Bicycle and Pedestrian Access

Objective 1-2 Expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational sites, in pursuit of the Council of San Benito County Governments General Plan and Regional Transportation Plan policies of encouraging bicycle and pedestrian travel.

Objective 1-3 Consider bicycle and pedestrian facilities in all projects (e.g. transportation, development, parks, etc.)

Objective 1-4 Increase the number of bicycle-transit trips and pedestrian access to transit.

Goal 4 Increase Bicycle and Pedestrian Trips

Objective 4-1 Make biking and walking an integral part of daily life in San Benito County, particularly for trips less than five miles, by implementing and maintaining a bikeway network, providing end-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer.

San Benito County Code of Ordinances

The San Benito County Code of Ordinances includes the following regulations pertaining to transportation that are relevant to this analysis.

Section 5.01.254: Use of Traffic Impact Fee Fund

This section covers the Traffic Impact Fee Fund which is used for the financing of transportation and transit facilities. These include, but are not limited to, streets and supporting improvements, roads, overpasses, bridges, related facilities and equipment.

Chapter 19.27: Roads and Highways

This chapter includes design standards applicable to certain improvements such as curbs, gutters, and driveways made to or adjacent to roads and highways; setback lines for certain structures and landscaping; and permitting requirements for encroachments within rights-of-way (ROW).

Chapter 23.15: Dedications, Reservations and Development Fees

This chapter includes requirements pertaining to subdivisions regarding dedication of streets, roads, alleys, access and abutters' rights; drainage, public utility and other public easements; bicycle paths; transit facilities; and payment of development impact fees to help fund other facilities.

Chapter 23.17: Improvements

All required subdivision improvements, both on and off site, shall be subject to the approval of the County Engineer and shall be constructed in accordance with the standard engineering specifications and other approved standards as provided by this title and by ordinance or resolution of the Board of Supervisors.

Chapters 23.25: Design Requirements

This chapter includes design requirements and standards pertaining to subdivision roads, bicycle and pedestrian paths, parcel size, open space easements, maintenance of facilities, and grading and erosion control.

Chapter 23.27: Fire Design Standards

This chapter includes standards for defensible space in the event of fires, accessible roadways for fire service providers, and water systems for fire protection.

Chapter 23.29: Road Standards and Chapter 23.31, Article II. Roadway Design Standards

These standards focus on the safe and standardized design of streets in subdivisions, design standards for bike lanes and separated bike paths, and the preparation of traffic studies.

San Benito County SB 743 Implementation Policy

San Benito County's SB 743 Implementation Policy was approved by the Board of Supervisors in September 2022. The document was developed to serve both as the basis of SB 743 implementation and VMT analysis within the County. Analysis guidelines are separated into two distinct approaches, those that relate to land use projects and those that relate to transportation improvement projects (Section 4.0 of the policy).

4.7.3 Impact Analysis

a. Methodology

The analysis presented herein is derived primarily from a Transportation Analysis prepared by Hexagon Transportation Consultants for the project (Appendix H) and from the Final VMT Analysis prepared by Kimley-Horn for the project (Appendix I). The Transportation Analysis assesses the transportation impacts of the project, including impacts to transit and active transportation facilities and VMT. The Final VMT Analysis provides an updated analysis of VMT impacts based on project changes to the proposed residential affordability scenario, which are described in Section 2, *Project Description*.

The Transportation Analysis also discloses the level of service, or traffic delay, that would result from the proposed project at nearby roadway intersections. Pursuant to Section 15064.3 of the *CEQA Guidelines*, traffic delay resulting from a land use project shall not constitute a significant environmental impact for purposes of CEQA. Because the purpose of this EIR is to identify and mitigate potentially significant impacts of the project, level of service is not discussed in the analysis. However, the Transportation Analysis provided as Appendix H to this EIR provides information on traffic delay resulting from the proposed project.

The Transportation Analysis and Final VMT Analysis evaluate potential VMT impacts using the methodology outlined in the San Benito County SB 743 Implementation Policy. Per OPR's technical advisory and the County's policy, home-based VMT per capita (resident) is the recommended metric to evaluate CEQA-related transportation impacts for residential land uses. As stated in the technical advisory, OPR allows the VMT to be measured as regional or citywide VMT per capita. OPR recommends an impact threshold of 15 percent below the existing VMT levels for residential land uses. Similarly, the County's policy sets the impact threshold for residential uses at 15 percent below the county-wide home-based VMT per capita.

The San Benito County travel demand forecast model (2020) is a mathematical representation of travel within Monterey, San Benito, Santa Cruz, and Santa Clara counties. The model has four components: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e., households, population, number of jobs) to estimate travel within the four counties. The model is the best available tool to represent travel within the County and serves as the primary forecasting tool for the County.

b. Significance Thresholds

According to Appendix G of the *CEQA Guidelines*, impacts related to transportation and circulation from the proposed project would be significant if the project would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
2. Conflict or be inconsistent with *CEQA Guidelines* section 15064.3, subdivision (b).
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.

The County's transportation model indicates that the countywide average home-based VMT per capita is currently 23.1. Based on the County's VMT policy, the project would result in a significant impact under threshold 2 above if it results in project generated VMT of greater than 19.6 VMT per capita, 15 percent below the existing countywide average.

c. Impacts and Mitigation Measures

Threshold 1:	Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact TRA-1 THE PROJECT WOULD NOT CONFLICT WITH A PROGRAM, PLAN, ORDINANCE, OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE, AND PEDESTRIAN FACILITIES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transit

The project would be required to comply with Policy C-1.5 in the 2035 General Plan, which requires the payment of fair share fees for new and expanded transportation facilities, as applicable, to County, City, regional and/or State facilities. The project applicant would be required to pay a fair share fee into the County's Traffic Impact Fee Fund, which would finance County transportation and transit facilities maintenance and improvements (refer to Section 5.01.254 of the San Benito County Code). There are no other programs, plans, ordinances, or policies addressing transit that would apply to the project. Therefore, because the project would be required to pay fair share fees consistent with the 2035 General Plan and San Benito County Code, the project would not conflict with a program, plan, ordinance, or policy addressing transit facilities. Impacts would be less than significant.

Roadways

According to the County's 2035 General Plan, intersections and roadways should operate at LOS D or better. Some roadways and roadway intersections in the vicinity of the project site currently operate at or below LOS D, especially during peak commute hours in the morning and evenings. Policy C-1.12 of the 2035 General Plan requires the maintenance of existing LOS where intersections are operating below LOS D. According to the Transportation Analysis for the project (Appendix H), vehicle trips generated by the project would not result in worsened LOS on surrounding roadways or intersections. Therefore, the project would be consistent with 2035 General Plan Policy C-1.12.

As noted previously, pursuant to Section 15064.3 of the *CEQA Guidelines*, traffic delay, which is what LOS measures and describes, shall not constitute a significant environmental impact for land use projects. Therefore, impacts would be less than significant.

Bicycle and Pedestrian Facilities

There are no existing bicycle facilities near the project site; however, the project would increase the demand for bicycle facilities in the vicinity. The County's Bikeway and Pedestrian Master Plan identifies planned bike lanes along Fairview Road, Union Road, and SR 25/Airline Highway.

The lack of sidewalks in the project area limits pedestrian travel to and from the project site. Additionally, few pedestrian destinations, such as shopping centers, are located within what would be considered an acceptable walking distance (0.25 to 0.5 mile) from the project site. The project would provide sidewalks on all internal streets for pedestrian use. The project would also connect on-site sidewalks to the planned Fairview Corners sidewalks and trail at the southern project boundary, and the future Gavilan College campus. This expanded pedestrian network would provide pedestrian access to local parks, including to the proposed on-site park from adjacent developments.

The project includes connections to future bicycle and pedestrian facilities proposed under the County's 2035 General Plan and the County's Bikeway and Pedestrian Master Plan; therefore, the project would be consistent with these plans. All bikeway facilities and pedestrian sidewalks would be designed and constructed in accordance with County standards. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact TRA-2 THE PROJECT WOULD NOT CONFLICT WITH CEQA GUIDELINES SECTION 15064.3(B), AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The proposed residential development would generate new VMT. Residents would commute to places of employment in the county, such as the cities of Hollister and San Juan Bautista, and to out-of-county employment destinations in Silicon Valley or the San Francisco and Monterey Bay regions. Residents of the project would also travel for recreational and other purposes besides employment.

The results of the VMT analysis, using the County's model, indicate that the proposed project is located in a Transportation Analysis Zone (TAZ)[1] that has an existing home-based VMT per capita of 21.3 (refer to Appendix H). The Final VMT Analysis (Appendix I) analyzed the potential VMT of various housing options (such as ADUs, deed-restricted units, and local lottery units) and took different household income levels into account when modeling VMT generated by the project. Specifically, trip distances for different purposes, income groups, and housing options were calculated using methods that leverage advanced big data analytics to analyze extensive datasets on trip lengths within each category in the county and the region. Based on the project details, including proposed affordability scenario of 30 deed-restricted ADUs, the proposed project is estimated to generate 17.75 VMT per capita (refer to Scenario B within Appendix I). Because the project's VMT per capita would not exceed the VMT policy impact threshold of 19.6 VMT per capita (15 percent below existing VMT), the proposed project would have a less than significant impact.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3:	Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Impact TRA-3 THE PROJECT WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE OR INCOMPATIBLE USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The majority of vehicles traveling to and from the project site and surrounding parcels along Old Ranch Road would be passenger vehicles, such as sedans and sport utility vehicles. The main site access would be provided from Fairview Road via Old Ranch Road, which would provide full access to the project site for future residents. A secondary site access is planned at the southern project boundary, which would connect to new streets proposed within the planned Fairview Corners residential development to the south. Old Ranch Road would be improved to provide a 60-foot ROW from Fairview Road to the project entrance, in conformance with County standards. All internal roadways would also be constructed in accordance with County standards. Land uses

[1] Transportation Analysis Zone (TAZ) is defined as a geographic area for the purpose of conducting traffic analysis. These models are used in processes to forecast population growth, economic growth, and transportation/transit capacity and responsiveness and then distribute those results throughout the region.

adjacent to the project site include agricultural uses which may involve tractor trailer and agricultural equipment on nearby roadways. However, these vehicles do not typically use Old Ranch Road and would not conflict with vehicle use on local roadways associated with the proposed project. Therefore, the proposed project would not generate hazards associated with incompatible uses or vehicles on roadways. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project result in inadequate emergency access?

Impact TRA-4 **THE PROJECT INCLUDES ONE PRIMARY ACCESS POINT TO THE PROJECT SITE. THE PROPOSED PROJECT WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

The main site access would be provided from Fairview Road via the upgraded Old Ranch Road, designed to meet County standards. A future secondary site access at the southern project boundary would connect the project's internal streets to new streets proposed within the planned Fairview Corners residential development to the south. Old Ranch Road would provide the primary access for emergency response vehicles. The project would be subject to review by the Hollister Fire Department to ensure that the project meets County Fire Design Standards. San Benito County Code Section 23.27.004 includes standards for fire access and roadways to ensure adequate passage of emergency vehicles. Standards include specifications related to clear width, effective turning radius and turnouts, curve radii on curving road segments, maximum road grade/slope, and minimum distance between intersections and driveways. The proposed improvements to Old Ranch Road and proposed internal streets would be constructed in accordance with County standards. Therefore, the project would provide adequate emergency access to the project site. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.7.4 Cumulative Impacts

The cumulative impacts assessment area for transportation includes Monterey, Santa Cruz, San Benito, and Santa Clara counties. This is an appropriate assessment area for transportation because most regional traffic originates from and has destinations within this area. While some vehicle trips do originate and end outside of the region, these trips are generally on freeways and do not contribute to trips on local collectors.

The project and other cumulative projects in the area would increase the VMT per capita and demand for bicycle and pedestrian facilities of the project vicinity and of the cumulative region. Buildout of the nearby planned projects would result in additional residential and institutional development. Some of this development would be accessible to transit while some would not. Development that is proximate to transit stops would increase ridership on County Express routes. If transit service and capacity remain unchanged as buildout of the planned projects occur, increased ridership could cause deficiencies in transit service. Cumulative impacts to transit would be potentially significant. As described above for Impact TRA-1, the proposed project would be consistent with 2035 General Plan policies related to transit, roadway, bicycle, and pedestrian facilities. The project would also pay County-required fair share fees. Therefore, the project's contribution to significant cumulative impacts related to transit, roadway, bicycle, and pedestrian facilities would not be cumulatively considerable.

Cumulative projects would result in increased vehicle use on area roadways. The increased use of vehicles in the area would result in a correlating increase in VMT. Development of cumulative projects would increase VMT above existing conditions; therefore, cumulative impacts would be significant. The proposed project would contribute to this cumulative impact by adding to countywide VMT alongside other planned development nearby. As described under Impact TRA-2, project-generated VMT would not exceed the County's VMT threshold. Therefore, the project would not result in a cumulatively considerable contribution to significant cumulative VMT impacts.

Impacts related to design hazards and emergency access are generally site specific, and cumulative impacts from planned development would not be significant. As described under Impacts TRA-3 and TRA-4, impacts related to these topics resulting from the proposed project would be less than significant.

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4.8 Tribal Cultural Resources

This section analyzes the proposed project's impacts on tribal cultural resources. Tribal cultural resources are those resources identified by California Native American tribes in consultation with lead agencies during tribal consultation [also referred to as Assembly Bill (AB) 52 consultation].

4.8.1 Setting

The project area lies in an area traditionally occupied by the Ohlone (or Costanoan) people. Ohlone territory extends along the California coast from the point where the San Joaquin and Sacramento Rivers merge into the San Francisco Bay to Point Sur. Their inland boundary was limited to the interior Coast Ranges (Kroeber 1925:462). The Ohlone language belongs to the Penutian family, with several distinct dialects throughout the region (Kroeber 1925:462). It is divided into eight regional dialects: Karkin, Chochenyo, Ramaytush, Awaswas, Taymen, Mutsun, Rumsen, and Chalon (Jones 2015).

The pre-European contact Ohlone were semi-sedentary, with a settlement system characterized by base camps and seasonal reserve camps composed of tule reed houses with thatched roofs made of matted grass (Schick 1994; Skowronek 1998). Just outside base camps, large sweat houses were built into the ground near stream banks used for spiritual ceremonies and possibly hygiene (Schick 1994, Jones 2015). Villages were divided into small polities, each of which was governed by a chief responsible for settling disputes, acting as a war leader during times of conflict, and supervising economic and ceremonial activities (Skowronek 1998; Kroeber 1925:468). Social organization appeared flexible to ethnographers and any sort of social hierarchy was not apparent to mission priests (Skowronek 1998).

Archaeological investigations inform Ohlone mortuary rituals. Cemeteries were set away from villages and visited during the annual Mourning Anniversary (Leventhal and DiGiuseppe 2009). Ceremonial human grave offerings might include *Olivella* beads, as well as tools like drills, mortars, pestles, hammerstones, bone awls, and utilized flakes (Leventhal and DiGiuseppe 2009). Ohlone mythology included animal characterization and animism, which was the basis for several creation narratives. Ritually burying of animals, such as a wolf, squirrel, deer, mountain lion, gray fox, elk, badger, grizzly bear, blue goose, and bat ray, was commonly practiced. Similar to human burials, ceremonial offerings were added to ritual animal graves like shell beads, ornaments, and exotic goods (Kroeber 1925; Field and Leventhal 2003).

Ohlone subsistence strategies were based on hunting, gathering, and fishing (Kroeber 1925:467, Skowronek 1998). Larger animals, like bears, might be avoided, but smaller game was hunted and snared on a regular basis (Schick 1944:17). Like the rest of California, the acorn was an important staple and was prepared by leaching acorn meal in openwork baskets and in holes dug into the sand (Kroeber 1925:467). The Ohlone also practiced controlled burning to facilitate plant growth (Kroeber 1925:467, Skowronek 1998). During specific seasons or in times of drought, the reserve camps would be utilized for gathering seasonal food and accessing food storage (Schick 1994). Fishing would be done with nets and gorge hooks out of tule reed canoes (Schick 1994:16-17). Mussels were a particularly important food resource. Sea mammals such as sea lions and seals were hunted and beached whales were exploited (Kroeber 1925:467).

Seven Franciscan missions were built within Ohlone territory in the late 1700s, and all members of the Ohlone group were eventually brought into the mission system (Kroeber 1925:462, Skowronek 1998). After the establishment of the missions, Ohlone population dwindled from roughly 10,000 people in 1770 to 1,300 by 1814 (Skowronek 1998). In 1973, the population of people with Ohlone descent was estimated at fewer than 300. The descendants of the Ohlone united in 1971 and have since arranged political and cultural organizations to revitalize aspects of their culture (Skowronek 1998).

4.8.2 Regulatory Setting

a. State

Assembly Bill 52 of 2014

AB 52 expanded CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (Public Resources Code [PRC] Section 21084.2). AB 52 further states when feasible, the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe," and meets either of the following criteria:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k).
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments and with respect to the interests and roles of project proponents, it is the intent AB 52 to accomplish the following:

1. Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities.
2. Establish a new category of resources in CEQA called "tribal cultural resources" that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation.
3. Establish examples of mitigation measures for tribal cultural resources that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible.
4. Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated (because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources).

5. In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning tribal cultural resources, early in the CEQA environmental review process, so that tribal cultural resources can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decision-making body of the lead agency.
6. Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to CEQA.
7. Ensure that local and tribal governments, public agencies, and project proponents have information available, early in CEQA environmental review process, for purposes of identifying and addressing potential adverse impacts to tribal cultural resources and to reduce the potential for delay and conflicts in the environmental review process.
8. Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, tribal cultural resources.
9. Establish that a substantial adverse change to a tribal cultural resource has a significant effect on the environment.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified or adopted. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency.

b. Local

San Benito County 2035 General Plan

The Natural and Cultural Resources Element of the San Benito County 2035 General Plan contains one goal and several associated policies that specifically address tribal cultural resources, provided below. The 2035 General Plan aims to identify ways to protect, preserve, and enhance the valuable tribal cultural resources that are vital to the character of the county.

Goal NCR-7 To protect, preserve, and enhance the unique cultural and historic resources in the county.

NCR-7.9 **Tribal Consultation.** The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

NCR-7.11 **Prohibit Unauthorized Grading.** The County shall prohibit unauthorized grading, collection, or degradation of Native American, tribal, archaeological, or paleontological resources, or unique geological formations.

NCR-7.12 **Archaeological Artifacts.** The County shall require an archaeological report prior to the issuance of any project permit or approval in areas determined to contain significant historic or prehistoric archaeological artifacts and when the development of the project may result in the disturbance of the site. The report shall be written by a qualified cultural resource specialist and shall include information as set forth in the county's archaeological report guidelines available at the County Planning Department.

4.8.3 Impact Analysis

a. Methodology and Significance Thresholds

In accordance with AB 52, the County has conducted tribal consultation as the lead agency. This consultation included written communication with the following five Native American tribes (seven contacts total): the Amah Mutsun Tribal Band, the Amah Mutsun Tribal Band of Mission San Juan Bautista, the Indian Canyon Mutsun Band of Costanoan, the Xolon-Salinan Tribe, and the Rumsen Am:a Tur:ataj Ohlone. The AB 52 letters were sent on March 11, 2022; no Native American Tribes requested consultation under AB 52 within the 30-day response window.

Rincon conducted Native American outreach as part of the requirements associated with the proposed project's Section 106 of the National Historic Preservation Act (NHPA) requirements and, as a result, responses were received requesting consultation from the Ohlone/Costanoan-Esselen Nation and the Indian Canyon Mutsun Band of Costanoan. Neither the Ohlone/Costanoan-Esselen Nation or the Indian Canyon Mutsun Band of Costanoan specifically identified tribal cultural resources within or near the proposed project site during consultation.

Appendix G of the *CEQA Guidelines* indicates that a project's impacts to tribal cultural resources would be significant if the project would:

1. 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. 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
   b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

b. Project Impacts and Mitigation Measures

Threshold 1:	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. 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 b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact TCR-1 GRADING AND EXCAVATION REQUIRED FOR THE PROPOSED PROJECT WOULD HAVE THE POTENTIAL TO ADVERSELY IMPACT TRIBAL CULTURAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

The Sacred Land File search results received from the Native American Heritage Commission on February 2, 2022 were negative for known sacred sites within the project area. Additionally, on March 11, 2022, San Benito County sent AB 52 consultation letters via certified mail to five Native American tribes. To date, the County has not received any responses for additional consultation under AB 52. Though there are no known tribal cultural resources present within the project site, it is possible that ground disturbance during project construction could encounter unknown tribal cultural resources. Therefore, the project has the potential to significantly impact tribal cultural resources through ground disturbance and subsequent damage of encountered resources.

Mitigation Measure

TCR-1 Unanticipated Discovery Tribal Cultural Resources

If cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 200 feet of the find shall cease and desist until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. Staking of the area of discovery will be implemented with stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery. If the County, in consultation with local Native American tribes, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

Significance After Mitigation

Implementation of Mitigation Measure TCR-1 would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated. By implementing Mitigation Measure TCR-1, the County would evaluate and require steps to protect or treat significant tribal cultural resources if encountered during construction, resulting in a less than significant impact.

4.8.4 Cumulative Impacts

Tribal cultural resources have the potential to extend across project sites; therefore, the appropriate geographic scope for cumulative tribal cultural resources impacts includes development projects adjacent to the project as well as within the surrounding region. Projects listed in Table 3-1 in Section 3, *Environmental Setting*, were considered during the analysis of cumulative impacts.

The proposed project, in conjunction with other nearby past, present, and reasonably foreseeable probable future projects in the region as listed in Table 3-1, would have the potential to adversely impact tribal cultural resources. Cumulative development in the region would continue to disturb areas with the potential to contain tribal cultural resources. Cumulative projects are reviewed separately by the appropriate jurisdiction and undergo environmental review when it is determined that the potential for significant impacts exists. If future cumulative projects would result in impacts to known or unknown tribal cultural resources, impacts to such resources would be addressed on a case-by-case basis and would likely be subject to mitigation measures similar to those imposed for this project as a result of the CEQA process. Cumulative impacts to tribal cultural resources would therefore be less than significant with the incorporation of mitigation.

As described under Impact TCR-1, the proposed project would result in a significant impact without mitigation to unknown tribal cultural resources. Mitigation Measure TCR-1 would reduce project-level impacts to less than significant. Therefore, the project's contribution to cumulative impacts to tribal cultural resources would not be cumulatively considerable.

4.9 Utilities and Service Systems

This section analyzes the environmental effects related to utilities and service systems associated with implementation of the proposed project. It discusses infrastructure and facilities related to water supply, wastewater treatment, stormwater, electricity, natural gas, telecommunications, and solid waste.

4.9.1 Setting

a. Water Supply

Water utility infrastructure is present within the project site to serve the existing residence. Water supply for the proposed project would be provided by Sunnyslope County Water District (SCWD), which generally provides water service for residences on the eastern side of Hollister and some surrounding portions of unincorporated San Benito County. A will-service letter was provided by SCWD to the project proponent and stated that as of the date of the letter (March 28, 2019), SCWD has the water supplies and infrastructure necessary to serve additional development within the HUA and the District boundaries including the subject property (SCWD 2019). The will-service letter expired on March 28, 2021; however, SCWD can extend the intent of the letter at its discretion or issue a new letter. The will-serve letter is not a guarantee of water supply availability, which will be assessed and confirmed prior to the start of construction through a Development Agreement approved by the SCWD Board of Directors (SCWD 2019). SCWD currently serves approximately 7,200 water accounts, approximately 99.8 percent of which are residential customers (SCWD 2022a). SCWD obtains its water supply from two main sources – local groundwater, and imported surface water from the Central Valley Project (CVP). The CVP water is obtained by SCWD from the San Benito County Water District (SBCWD), which is the imported water wholesaler for the region. In addition, SCWD owns and operates five groundwater wells.

The percentage makeup of local groundwater and imported surface water in SCWD's total water supply varies throughout the year, depending primarily upon weather conditions and the activities of other users of the same supply sources. Surface water availability becomes reduced during drought conditions, which are persistent in California. In addition, CVP water is committed to specific environmental uses which must be satisfied even during extreme drought years, when contractors to the CVP receive only a portion of their contracted amount. During years of reduced surface water deliveries, reliance on local groundwater typically increases. In combination, these water sources provided 2,593 acre-feet (AF) of water to the SCWD service area in 2020 (Todd Groundwater 2021). SCWD treats water at two existing plants, the Lessalt and the West Hills Water Treatment Plants (SCWD 2022b, 2022c).

The project site overlies the North San Benito Groundwater Basin and is within the planning area of the *2020 Hollister Urban Area Urban Water Management Plan* (HUA UWMP; Todd Groundwater 2021). Major inflows into the basin include deep percolation from rainfall, return flow from urban and agricultural uses, recharge of reclaimed water, stream percolation (both natural and managed through reservoir and CVP releases), and subsurface inflow from adjacent groundwater basins. Most of these inflows are controlled by hydrological conditions and are generally greater in wet years and reduced in dry years. Major outflows include pumping from agricultural and urban sources and subsurface outflow to adjacent basins. Water supply in the local region that includes the project site is managed collectively by SBCWD, SCWD, and the City of Hollister through the *2020 HUA UWMP* (Todd Groundwater 2021).

Table 4.9-1 shows the estimated water supply and demand during normal, single dry, and multiple dry years for the HUA.

Table 4.9-1 Hollister Urban Area Normal, Single Dry, and Multiple Dry Year Supply and Demand Comparison[1]

Supply Source	2025	2030	2035	2040
Normal Year				
Supply	6,968	8,149	9,484	10,857
Demand	6,968	8,149	9,484	10,857
Single Dry Year[2]				
Supply	6,271	7,334	8,536	9,771
Demand	6,271	7,334	8,536	9,771
Multiple Dry Year (First through Fifth Years)[2]				
Supply	6,271	7,334	8,536	9,771
Demand	6,271	7,334	8,536	9,771

[1] When supply is shown to equal demand, even during dry and multiple dry-year conditions, this indicates that only enough water was produced and/or purchased to meet demands.

[2] Assumes Water Shortage Contingency Plan Stage 1 reductions (minimum 10 percent reduction in water demand)

Note: Although the 2020 UWMP provides separate supply and demand estimates for the City of Hollister and SCWD for the normal year scenario, the supply and demand estimates for the single dry year and multiple dry year scenarios are combined. Therefore, this table also includes combined supply and demand estimates for the City of Hollister and SCWD for the normal year scenario to facilitate comparison between all three scenarios.

Source: Todd Groundwater 2021

b. Wastewater

Wastewater and sanitary sewer utilities do not exist within the project site. The existing residence is served by a septic system. The project site is in the SCWD boundary, and was annexed in 1987 to receive service from the district (LAFCO File No. 1987-275).

The project site is within the SCWD boundary. It was annexed in 1987 to receive water service from the district (San Benito County Local Agency Formation Commission File 1987-275). The project site is included within the Hollister Urban Area boundary of the Hollister Urban Area Water and Wastewater Master Plan (City of Hollister 2008), which was approved under a Memorandum of Understanding between the San Benito County Water District, San Benito County, the City of Hollister, and the SCWD (see Figure 3-2 and corresponding Table 3-1). The intent of the MOU of the Hollister Urban Area Water and Wastewater Master Plan was for areas both within and outside the City of Hollister located north of Airline Highway to be served by an expanded and upgraded City of Hollister tertiary wastewater treatment plant with the beneficial reuse of the treated wastewater for agricultural crop production. The project site is located north of Airline Highway in the area intended to be served by the City of Hollister's wastewater treatment plant under the terms of the Memorandum of Understanding. On August 7, 2023, the City of Hollister City Council voted to have a contract prepared between the City and SCWD to provide sewer service to Gavilan College, this proposed project (Lands of Lee), the Fairview Corners project, and the failing Cielo Vista sewer plant. The Hollister City Council further directed that the contract(s) be referred to the San Benito County Local Area Formation Commission (LAFCO) for review. On October 17, 2023, SCWD approved a wastewater agreement between SCWD and the City of Hollister; on November 6, 2023, the City of Hollister approved that same agreement; and on December 14, 2023, San Benito County LAFCO determined it had no jurisdiction over that wastewater agreement, thereby satisfying the condition imposed by the City of Hollister. Therefore, the wastewater agreement between SCWD and the City of Hollister to provide service to multiple developments, including the proposed project, is now in place and operable.

Project wastewater would be conveyed through the City of Hollister's wastewater system to be treated by the City of Hollister under contract with SCWD, at the Hollister Domestic Water Reclamation Facility (DWRF). This would involve a system of on-site sewer pipelines to collect and convey wastewater towards the treatment point; minimal off-site improvements would be necessary, as City conveyance facilities are already located near the project site.

Hollister's DWRF is located approximately 4.7 miles northwest of the project site, in the western portion of the City Hollister. The Hollister DWRF is designed to treat 4.0 MGD for dry weather flow conditions and 5.0 MGD for wet weather flow conditions (City of Hollister 2018). In 2020, 2,658 acre-feet (AF) of wastewater was treated at the Hollister DWRF, or 2.37 MGD (Todd Groundwater 2021). The Hollister DWRF has an available wastewater treatment capacity of 1.63 MGD during dry-weather flow conditions and 2.63 MGD during wet-weather flow conditions, or 40.8 to 52.6 percent of its total design capacity.

The project's on-site wastewater main would be extended with a portion of off-site wastewater main to traverse under Fairview Road and convey effluent from the project site to an existing City manhole on the west side of Fairview Road. The on-site system and off-site connections would be sized to serve the proposed project buildout, with no excess capacity available to accommodate new connections from neighboring properties. The only portion of new off-site wastewater infrastructure required would be the section of pipeline under Fairview Road, connecting the on-site wastewater main to the off-site City manhole. From the manhole connection point, the City's existing wastewater conveyance system is sufficient to convey effluent from the project site to Hollister's DWRF.

The City of Hollister's DWRF has more than 40 percent available capacity remaining for additional wastewater treatment. This capacity is addressed in detail in the *2020 HUA UWMP* (Todd Groundwater 2021).

c. Stormwater

There are no existing stormwater drainage facilities on the project site. As discussed in Section 4.10.5, *Hydrology and Water Quality*, surface water runoff (i.e., stormwater) currently drains via sheet flow in an easterly direction to an existing off-site drainage channel. Sheet flow refers to generally shallow, concentrated flow over a level surface and is not contained or managed by manmade drainage control features.

d. Electricity, Natural Gas, and Telecommunications

Electricity is supplied to the local region by Central Coast Community Energy via infrastructure maintained by Pacific Gas & Electric Company (PG&E). An overhead PG&E electrical power line adjacent to Old Ranch Road and an underground power line on the project site provide electricity to the existing residence. Natural gas is supplied to the local region and project site by PG&E via an underground line. Telecommunications services are provided to the local region by various companies, including AT&T, T-Mobile, U.S. Cellular, and Verizon. Physical telecommunications infrastructure on the project site includes underground AT&T and Spectrum lines.

e. Solid Waste

The current solid waste disposal and recycling service provider for the cities of Hollister and San Juan Bautista and most parts of unincorporated San Benito County is Recology San Benito County. Recology transports solid waste to the John Smith Road Landfill (JSRL), which is owned by San Benito County, managed by the San Benito County Integrated Waste Management Department, and operated by Waste Solutions Group of San Benito, LLC. JSRL is the only operating active solid waste landfill in San Benito County.

JSRL is located at 2650 John Smith Road, approximately 1.5 miles east of the project site, in the unincorporated County. It has a maximum permitted throughput of 1,000 tons per day and, as of April 2021, a remaining capacity of approximately 1,921,000 cubic yards (California Department of Resources Recycling and Recovery [CalRecycle] 2021). The estimated closure date (i.e., when capacity is expected to be reached) is approximately 2036 to 2037 (County of San Benito 2024).

Recology San Benito County would provide solid waste services to the proposed project and would transports solid waste to JSRL.

4.9.2 Regulatory Setting

a. Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 sets energy efficiency standards for lighting (specifically light bulbs) and appliances.

Energy Star Program

Energy Star is a voluntary labeling program introduced by the United States Environmental Protection Agency to identify and promote energy-efficient products to reduce greenhouse gas emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, the United States Environmental Protection Agency joined with the Energy Department to expand the program, which now also includes certifying commercial and industrial buildings as well as homes (United States Environmental Protection Agency 2021).

Resource Conservation and Recovery Act

Title 40 of the Code of Federal Regulations Part 258 (Resource Conservation and Recovery Act, Subtitle D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria.

b. State

Senate Bill 221

Senate Bill 221 (Chapter 642, Statutes of 2001) requires lead agencies to obtain an affirmative written verification of sufficient water supply prior to approval of certain specified subdivision projects. For this purpose, water suppliers may rely on an UWMP (if the proposed project is accounted for within the UWMP), a Water Supply Assessment prepared for the project, or other acceptable information that constitutes "substantial evidence." "Sufficient water supply" is defined in Senate Bill 221 as the total water supplies available during normal, single-dry, and multiple-dry water years within the 20-year (or greater) projection period that are available to meet the projected demand associated with the proposed project, in addition to existing and planned future uses (California Department of Water Resources [DWR] 2003).

Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Division 6, Part 2.6, Sections 10610 through 10657) requires an UWMP be prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. Every urban water supplier that either provides over 3,000 AF of water annually or serves 3,000 or more connections is required to assess the reliability of its water sources over a 20-year planning horizon considering normal, dry and multiple dry years. This assessment is to be included in its UWMP, which must be prepared every five years and submitted to DWR. DWR reviews the UWMP to make sure it meets the requirements of the Urban Water Management Planning Act. When a water agency has prepared and adopted an UWMP in compliance with DWR requirements, it may rely on the UWMP in various respects for individual planning and development approvals. The project site is within the planning area of the *2020 HUA UWMP* (Todd Groundwater 2021).

Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act, enacted in 2006, required the DWR to update the Model Water Efficient Landscape Ordinance (MWELO). In 2009, the Office of Administrative Law approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions. San Benito County has adopted a MWELO in 2022; therefore, the proposed project would be required to comply with the requirements set forth in the County MWELO, codified in Section 25.07.011 of the County Code. The MWELO applies to new construction with a landscape area greater than 500 square feet, and requires, among other things, an automatic irrigation system, backflow prevention devices for sprinklers, and the use of native trees and/or plants suitable for the local climate.

Sustainable Groundwater Management Act

In September 2014, the governor signed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act gives local agencies the power to sustainably manage groundwater and requires groundwater sustainability plans to be developed for medium- and high-priority groundwater basins, as defined by DWR. Pursuant to California Water Code Section 10933, prioritizations are assigned by DWR to each groundwater basin based on the overlying population, the current and projected rates of population growth, the number of public supply wells that draw from the basin, the total number of wells that draw from the basin, the irrigated acreage overlying the basin, the degree to which people overlying the basin rely on groundwater as their primary source of water, documented impacts on the groundwater within the basin (e.g., overdraft, subsidence, saline intrusion, water quality degradation), and any other relevant information (e.g., adverse impacts to local habitat and streamflows). Only high- and medium-priority groundwater basins are required by Sustainable Groundwater Management Act to form a groundwater sustainability agency and adopt a groundwater sustainability plan (or alternative). Low and very-low priority basins may adopt a groundwater sustainability plan (or alternative) but are not required to do so.

The project site overlies the North San Benito Groundwater Basin, which is designated "medium priority" by DWR (DWR 2022). The SBCWD is the Groundwater Sustainability Agency for the North San Benito Groundwater Basin, responsible for implementing a Groundwater Sustainability Plan (GSP) for the basin. A GSP was developed, and adopted by the SBCWD's Board of Directors on November 17, 2021 (SBCWD 2021). As discussed in Section 4.9.1(a), water supply for the project would be provided by SCWD, which sources its water from the production of local groundwater resources and from the purchase of imported CVP water; during years when imported surface water supply is reduced, SCWD relies more heavily on local groundwater. The GSP for the North San Benito Groundwater Basin identifies sustainability goals, priority water projects, and conservation requirements that SCWD and others including City of Hollister, Tres Pinos County Water District, and Valley Water, will be required to comply with to meet sustainability targets for SGMA.

California Building Standards Code

California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction, including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2022 Title 24 standards. The California Building Standards Code's standards related to utilities and service systems are outlined below.

Part 5 – California Plumbing Code

The California Plumbing Code is codified in CCR Title 24, Part 5. The Plumbing Code contains regulations including, but not limited to, plumbing materials, fixtures, water heaters, water supply and distribution, ventilation, and drainage. More specifically, Part 5, Chapter 4, contains provisions requiring the installation of low flow fixtures and toilets.

Part 6 – Building Energy Efficiency Standards/Energy Code

CCR Title 24, Part 6 is California's Energy Efficiency Standards for Residential and Non-residential Buildings. The 2022 Building Energy Efficiency Standards (California Energy Code) move toward reducing nonrenewable energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less. The 2022 Standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (California Energy Commission 2018).

Part 11 – California Green Building Standards

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers (Tiers I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

Regarding water conservation and stormwater drainage, the mandatory standards include requirements for a 20 percent reduction in indoor water use relative to specified baseline levels,[1] the use of water-efficient irrigation systems for new development with an aggregate landscape area equal or greater than 500 square feet, and other indoor and outdoor water efficiency and conservation measures such as separate water submeters for subsystems and specific fixtures and fittings. The voluntary standards include stricter water conservation requirements for specific fixtures as well as 20 percent permeable paving for the Tier 1 standards and 30 percent permeable paving for the Tier II standards.

Regarding energy, the 2022 mandatory CALGreen standards require:

- Inspections of energy systems to ensure optimal working efficiency;
- Dedicated circuitry to facilitate installation of electric vehicle charging stations in newly constructed attached garages for single-family and duplex dwellings; and
- Designation of at least 10 percent of parking spaces for multi-family residential developments as electric vehicle charging spaces capable of supporting future electric vehicle supply equipment.

The Tier I and Tier II voluntary standards related to energy require stricter energy efficiency requirements and cool/solar reflective roofs.

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939; Chapter 1095, Statutes of 1989) requires that cities and counties divert 50 percent of all solid waste from landfills as of January 1, 2000, through source reduction, recycling, and composting. AB 939 also establishes a goal for all California counties to provide at least 15 years of ongoing landfill capacity. To help achieve this goal, the Act requires that each city and county prepare a Source Reduction and Recycling Element to be submitted to CalRecycle, which administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling. The County of San Benito requires the recycling of at least 65 percent of construction and demolition material; consistent with these requirements, construction of the project would include diversion of at least 65 percent of construction and demolition material.

[1] Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water-reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

Assembly Bill 341

The purpose of AB 341 of 2011 (Chapter 476, Statutes of 2011) is to reduce greenhouse gas emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. In addition to Mandatory Commercial Recycling, AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

Senate Bill 1383

Senate Bill 1383 of 2016 (Chapter 395, Statutes of 2016) established the following goals: a 50 percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2020 and a 75 percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2025. CalRecycle is implementing an enforcement program that focuses on compliance assistance prior to enforcement actions to ensure jurisdictions are meeting the reduction targets required by Senate Bill 1383.

c. Local

San Benito County 2035 General Plan

The San Benito County 2035 General Plan Land Use Element, Public Facilities and Services Element, and Natural and Cultural Resources Element provide the following goals and policies pertaining to utilities and service systems that are relevant to this analysis (County of San Benito 2015b):

Land Use Element

LU-1.1 **Countywide Development.** The County shall focus future development in areas around cities where infrastructure and public services are available, within existing unincorporated communities, and within a limited number of new communities, provided they meet the requirements of goal section LU-7 and demonstrate a fiscally neutral or positive impact on the County and any special districts that provide services to the project.

LU-1.3 **Future Development Timing.** The County shall ensure that future development does not outpace the ability of either the County or other public/private service providers to provide adequate services and infrastructure. The County shall review future development proposals for their potential to reduce the level of services provided to existing communities or place economic hardships on existing communities and the County may deny proposals that are projected to have these effects.

Goal LU-2 To promote energy efficiency through innovative and sustainable building and site design.

LU-2.1 **Sustainable Building Practices.** The County shall promote, and where appropriate, require sustainable building practices that incorporate a “whole system” approach to designing and constructing buildings that consume less energy, water, and other resources; facilitate natural ventilation; use daylight efficiently; and are healthy, safe, comfortable, and durable.

LU-4.2 **Urban Residential Development.** The County shall ensure new urban residential development (e.g., greater than two units per acre) occurs in areas that have, or can provide, adequate public facilities and services to support such uses, and are near existing and future major transportation networks, transit and/or bicycle corridors, pedestrian paths and trails, and employment centers.

LU-4.5 **Innovative Site Planning and Residential Design.** The County shall encourage new residential developments to use innovative site planning techniques and to incorporate design features that increase the design quality, and energy efficiency, and water conservation of structures and landscapes while protecting the surrounding environment.

Public Facilities and Services Element

Goal PFS-1 To provide residents and business quality, cost-effective, and sustainable public facilities and services.

PFS-1.1 **Essential Facilities and Services.** The County shall ensure that adequate public facilities and services essential for public health and safety are provided to all county residents and safety are provided to all county residents and businesses and maintained at acceptable service levels. Where public facilities and services are provided by other agencies, the County shall encourage similar service level goals.

PFS-1.4 **Level of Service.** The County shall preserve, improve, and replace public facilities as necessary to maintain adequate levels of service for existing and future development. Where public facilities and services are provided by other agencies, the County shall encourage similar service level goals.

PFS-1.9 **Development Review.** The County shall evaluate facility capacity, levels of service, and/or funding needs during the development review process to ensure adequate levels of service and facilities are provided and maintained.

PFS-1.10 **Maximize Use of Existing Facilities.** The County shall require new development projects to be designed and sited to use existing facilities and services to the extent practical and to the extent that such a design and site choice would be consistent with good design principles.

PFS-1.11 **Pay Fair Share.** The County shall require new development to pay its fair share of public facility and service costs.

PFS-1.12 **New Development Requirements.** The County shall require new development, in compliance with local, State, and federal law, to mitigate project impacts associated with public facilities and services, including, but not limited to, fire, law enforcement, water, wastewater, schools, infrastructure, roads, and pedestrian and bicycle facilities through the use of annexation fees, connection fees, facility construction/expansion requirements, or other appropriate methods.

PFS-1.13 **Service Agency Notification.** County shall notify the appropriate agencies (e.g., cities, special districts, school districts, emergency service providers) of new development applications within their service areas early in review process to allow sufficient time to assess impacts on facilities and services.

Goal PFS-3 To ensure reliable supplies of water for unincorporated areas to meet the needs of existing and future agriculture and development, while promoting water conservation and the use of sustainable water supply sources.

Goal PFS-4 To maintain an adequate level of service in the water systems serving unincorporated areas to meet the needs of existing and future agriculture and development, while improving water system efficiency.

PFS-4.1 **Adequate Water Treatment and Delivery Facilities.** The County shall ensure, through the development review process, that adequate water supply, treatment and delivery facilities are sufficient to serve new development, and are able to be expanded to meet capacity demands when needed. Such needs shall include capacities necessary to comply with water quality and public safety requirements.

PFS-4.2 **Water Facility Infrastructure Fees.** As a condition of approval for discretionary developments, the County shall not issue approval for a final map until verification of adequate water and wastewater service has been provided, which may include verification of payment of fees imposed for water and wastewater infrastructure capacity per the fee payment schedule from the water and wastewater provider.

Goal PFS-5 To ensure wastewater treatment facilities and septic systems are available and adequate to collect, treat, store and safely dispose of wastewater.

PFS-5.3 **Adequate Water Treatment and Disposal.** The County shall ensure through the development review process that wastewater collection, treatment, and disposal facilities are sufficient to serve existing and new development, and are able to be expanded to meet capacity demands when needed.

PFS-5.4 **Developer Requirements.** The County shall require that new development meet all County requirements for adequate wastewater collection, treatment, and disposal prior to project approval.

Goal PFS-7 To provide solid waste facilities that meet or exceed State law requirements, and use innovative strategies for economical and efficient collection, transfer, recycling, storage, and disposal of solid waste.

PFS-7.1 **Adequate Capacity.** The County shall ensure that there is adequate capacity within the solid waste system for the collection, transportation, processing, recycling, and disposal of solid waste to meet the needs of existing and projected development.

PFS-7.6 **Construction Materials Recycling.** The County shall encourage recycling and reuse of construction waste, including recycling of materials generated by the demolition of buildings, with the objective of diverting 50 percent to a certified recycling processor. The County shall encourage salvaged and recycled materials for use in new construction.

Goal PFS-8 To ensure that all areas of the County are provided with gas and electric service and residents and businesses can connect renewable energy facilities to the electric-grid.

Goal PFS-9 To facilitate the orderly and appropriate development and expansion of telecommunications facilities to meet the needs of residents and businesses for comprehensive, reliable, and cost effective telephone, wireless telephone, broadband, and cable television service.

PFS-9.7 **Subdivision Improvement Requirements.** The County shall require new residential and commercial development projects to include the facility components necessary to support modern telecommunication technologies, such as conduit space within joint utility trenches.

San Benito County Code of Ordinances

The San Benito County Code of Ordinances includes the following regulations pertaining to utilities and service systems that are relevant to this analysis.

Chapter 15.01: Solid Waste Regulations

The chapter addresses collection, transportation of solid waste, disposal of refuse, and enforcement in five articles. Section 15.01.020 (Solid Waste Containers) requires suitable containers of sufficient capacity to store the accumulations of solid waste during the intervals between collection for disposal. Section 15.01.040 (Solid Waste Collection) establishes mandatory solid waste collection areas which include all solid waste generated from all residential, commercial and industrial properties in the unincorporated county and all residential county service areas consisting of 10 lots or more. Section 15.01.046 (Building Permits; Diversion Plans) requires a solid waste diversion plan prior to building permit approval. Permitees are required to divert a minimum of 50 percent of their construction or demolition waste.

Chapter 15.05, Article IV. Water Conservation

This article requires building permits be issued in conformance with the final water conservation plan, which specifies requirements to be incorporated into the design and construction of all structures constructed in the county. Before the adoption of the final water conservation plan, the County imposes certain interim restrictions on the issuance of building permits including, but not limited to, the following:

- Prior to the adoption of the preliminary water conservation plan, the Building Department shall not issue a building permit until the Planning Commission determines that ample water of suitable quality[2] exists to meet the water needs generated by the structures and the use thereof. The applicant shall have the burden of proof according to clear and convincing evidence (San Benito County Code Section 15.05.227[D]).

[2] "Ample water of suitable quality" means establishing the following: (1) the quantity of water to be used as a result of the use of the proposed structure on an average annual basis; (2) the quality of water necessitated by the use of the proposed structure; (3) a reliable source of the water to be used; (4) the quantity and quality of the water source; (5) the existing and potential other users of the source of water, and an estimate of the amount of water needed by these users on an average annual basis; and (6) the insignificant impact of the proposed use on existing and potential users of the water source. "Insignificant impact" includes a determination that the withdrawal of water from the water source does not exceed the replenishment of the water source, nor will the proposed withdrawal of water reduce the quality of the water source (San Benito County Code section 15.05.227[e]).

Chapter 23.31, Article IV. Water System Design Standards

San Benito County Code Section 23.31.061 sets forth water supply requirements including, but not limited to, the following:

- **(A) Quality.** Water must conform to the latest revisions of Sections 3, 4 and 5 of the United States Public Health Service Drinking Water Standards, the requirements of the California Health and Safety Code and the CCR Title 22 and local ordinances.
- **(B)(1)(c) Public water supply systems; approval by agencies for public water systems.** For developments and subdivisions requiring a public water system, the water system shall conform to the requirements of the County's Fire Marshal, the San Benito Health Department, the County's Public Works Department and applicable State and federal standards.
- **(B)(3) Unincorporated urban centers.** Water supply shall be provided by an existing agency or if there is no existing agency, a new district shall be formed.

San Benito County Code Section 23.31.062 sets forth requirements for water distribution system design including location of water mains, distribution system, sizing and selection of pipe, storage facilities, booster stations, telemetry and control systems and materials.

Chapter 23.31, Article V Sewer System Design Standards

Section 23.31.080 sets forth the minimum design standards for the design and construction of sanitary sewers, sewer pump stations, sewer treatment plants and sewer systems, in the unincorporated area of San Benito County subject to control or permit requirements of the County. The requirements are applicable only when sanitary sewers do not fall within the jurisdiction of other special districts or agencies. In the event that such sewers are within the jurisdiction of another agency, then all sanitary sewer improvements shall be designed and constructed in accordance with the requirements of that agency. In addition, Article V requires that all work on house laterals, house sewers, building sewers, outside of public rights-of-way or sewer easements will be governed by the provisions of the Uniform Plumbing Code as amended by these standards and other applicable ordinances of the local sewerage agency.

San Benito County Local Enforcement Agency

The County of San Benito is the Local Enforcement Agency for solid waste in San Benito County (CalRecycle 2022). The Local Enforcement Agency is empowered, upon certification by CalRecycle, to implement delegated CalRecycle programs and locally designated activities. The Local Enforcement Agency has the primary responsibility for ensuring the correct operation and closure of solid waste facilities in the State as well as guaranteeing the proper storage and transportation of solid wastes (CalRecycle 2022). Solid waste and recyclable materials in San Benito County are taken to the JSRL.

4.9.3 Impact Analysis

a. Methodology and Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, impacts to utilities and service systems would be considered significant if a project would result in any of the following:

1. 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.
2. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate 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. Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

For each of the thresholds of significance listed above, the analysis below considers the proposed project activities and development characteristics in comparison to existing conditions, in order to identify and characterize potential impacts to utilities and service systems, and develop appropriate mitigation measures if necessary.

b. Project Impacts and Mitigation Measures

Threshold 1:	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?

Impact UTIL-1 THE PROJECT WOULD NOT REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED UTILITY FACILITIES, BEYOND THE ON-SITE IMPROVEMENTS AND OFF-SITE CONNECTIONS NECESSARY TO PROVIDE SERVICES TO THE PROJECT SITE. THE ENVIRONMENTAL EFFECTS OF INSTALLING ON- AND OFF-SITE FACILITIES FOR THE PROJECT ARE ANALYZED THROUGHOUT THIS EIR, INCLUDING AS RELEVANT TO WATER, WASTEWATER TREATMENT, STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, AND TELECOMMUNICATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The project would include the construction of new internal utility connections and would be served by existing local and regional utility providers. Off-site improvements would be limited to new wastewater conveyance facilities to direct sewage flow from within the project site to one of two existing wastewater treatment plants in the project area. As described in more detail below, including under Impact UTIL-2 and UTIL-3, the project would include new on-site utility facilities, and both on- and off-site connections to existing utility facilities, but would not require the expansion or relocation of existing utility facilities.

Water

As discussed in Section 2.5.7, *Utilities*, water supply for the project would be provided by SCWD, which owns and operates existing water supply conveyance and treatment facilities throughout the HUA. The project site as well as the entirety of SCWD's service territory is located within the HUA. The border of the HUA is contiguous with the area addressed in the *Hollister Urban Area Water and Wastewater Master Plan* (City of Hollister, SBCWD, and SCWD 2017); as discussed therein, SCWD, in addition to managing local groundwater, is also the local imported water wholesale agency and holds the contract to receive water through the CVP and deliver it to end users within the HUA. As such, SCWD operates and maintains the infrastructure necessary to convey imported surface water supply and locally produced groundwater supply to end user customers within the HUA.

On-site improvements to provide water supply to the proposed project development include a new internal, looped system of water mains between the planned Gavilan Community College's San Benito Campus, the planned Fairview Corners residential development, and the current residences on Old Ranch Road. The proposed project would not affect the size or location of existing water supply facilities because the internal looped system of water mains would connect to existing water conveyance facilities, through which water supply would be delivered to the site. The environmental effects of these on-site water supply facilities are analyzed throughout this EIR, including in Section 4.4, *Geology and Soils,* which addresses the potential for soils-related impacts such as erosion and instability to occur, and in Section 4.10.5, *Hydrology and Water Quality,* which addresses the potential for water quality-related impacts to occur, as well as compliance with associated laws and regulations. As discussed therein, potential environmental impacts associated with construction of the proposed on-site system of water mains would not be significant. In addition, the project would not affect the size or location of existing off-site water supply facilities. Potential impacts would be less than significant.

Wastewater

Wastewater conveyance and treatment service for the project development would be provided by the City of Hollister at the Hollister DWRF. The increased wastewater associated with the proposed development would be 10,489 gallons per day (GPD), or 0.010 MGD. This represents 0.61 percent of the available treatment capacity at Hollister's DWRF; see Table 4.9-2.

Table 4.9-2 Project Demand on Wastewater Treatment Facilities

	Hollister DWRF
Total Capacity	4.0 MGD[1]
Remaining Capacity	1.63 MGD[1]
Project Demand	0.010 MGD
Percent of Remaining Capacity Used by the Project	0.61 %

Note: MGD = million gallons per day
[1] These values represent dry weather flow capacities.
Source: County of San Benito 2015a; SCWD 2020; Todd Groundwater 2021

The additional 10,489 GPD of wastewater estimated for the proposed project represents the wastewater generated by the 34 units that were not previously accounted for in the UWMP, and are therefore in addition to the units already accounted for in the UWMP, to meet the proposed project's total of 141 new residential units and 30 ADUs. The population growth estimates used to develop the current 2020 HUA UWMP were based on the Hollister Urban Area Water and Wastewater Master Plan and the associated Update (City of Hollister, SBCWD, and SCWD 2017), and those projections were informed by land use planning data from the adopted General Plans for Hollister and San Benito County, as well as the planned development forecasts provided by the City of Hollister and SCWD (Todd Groundwater 2021). The proposed project development is included on the list of forecasted projects identified in the 2020 HUA UWMP, indicating that the wastewater treatment demands of project-related development are accounted for in the Hollister Urban Area

Water and Wastewater Master Plan and the associated Update (City of Hollister, SBCWD, and SCWD 2017), and wastewater treatment capacity for the units assumed in the aforementioned plans are already accounted for in the project area.

As discussed in Section 4.9.1(b), Hollister DWRF has more than 40 percent of its design capacity available for additional wastewater treatment. Based upon the existing and remaining capacity and the demands of the proposed project, there is sufficient wastewater treatment capacity available at existing facilities to accommodate the proposed development, which would not expand or relocate any wastewater treatment facilities.

The proposed project would require new sewer line connections between the proposed development and the existing infrastructure. Off-site improvements would be limited to an extension of the project's on-site sewer main, to cross under Fairview Road and connect to the existing Manhole L-5-1, from which point SCWD's existing sewer system is sufficient to convey project effluent to the Hollister DWRF for treatment and discharge.

The potential environmental impacts associated with construction of wastewater collection and conveyance infrastructure are analyzed throughout this EIR, including in Section 4.10, *Effects Found Not to be Significant.* As discussed throughout Section 4.10, including in Sections 4.10.4, *Hazards and Hazardous Materials*, and 4.10.5, *Hydrology and Water Quality*, the project would be required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which is authorized by the federal Clean Water Act, and requires a Stormwater Pollution Prevention Plan (SWPPP) for activities such as construction of the proposed development. The SWPPP would be developed and implemented with project-specific best management practices (BMP) to minimize or avoid potential impacts associated with ground-disturbing activities such as those that would occur during installation of new pipelines. Compliance with the NPDES program through implementation of a SWPPP and BMPs during construction would minimize potential impacts from construction of sewer pipeline to a less than significant level.

Additionally, the City of Hollister manages groundwater recharge programs at the Hollister DWRF. The Hollister DWRF overlies the North San Benito Groundwater Basin and increases recharge to the basin using treated wastewater, which is discharged into infiltration ponds for percolation to the underlying groundwater (Todd Groundwater 2021). Therefore, although the proposed development would increase the amount of wastewater generated from the project site, there is sufficient treatment capacity available to treat the project's wastewater, and the treated wastewater would be used towards a groundwater recharge program benefiting the North San Benito Groundwater Basin. As stated above and discussed throughout this EIR, impacts associated with construction of utility pipeline connections would be less than significant with mitigation. Therefore, potential impacts would not be significant. Impacts relating to the construction or relocation of wastewater facilities would be less than significant.

Stormwater Conveyance

Project development would alter existing drainage patterns by introducing new land uses and associated impervious surfaces, including drainage facilities to provide stormwater management. With implementation of the project development and proposed drainage system, stormwater flows would be modified from eastward sheet flow to the existing off-site drainage to constructed stormwater drainage facilities that drain to a new underground detention facility, which would be used to detain flows prior to discharge into the drainage. The proposed stormwater system, including the location of the new underground detention facility, is shown on Figure 2-9, *Proposed Stormwater System,* presented in Section 2.5.7, *Utilities*.

The underground detention facility would be located in the southeast portion of the project site, coincident with the proposed public park, which is adjacent to an existing drainage channel. Surface water runoff would be conveyed from throughout the project site to the park, where it would infiltrate through the permeable land cover to the subsurface holding area, or detention facility. From this point, discharge of the collected stormwater into the adjacent drainage channel would be conducted via a new outfall, and would be controlled so that flow rates do not exceed the pre-development peak flow rate. The proposed stormwater underground chamber design would have the volume capacity to detain a 500 year storm. Further, the current design retains the volume for the 95^{th} percentile storm, which is greater than the volume for the detention of a 500-year storm. San Benito County would be responsible for maintenance of the proposed on-site stormwater system, funded through a County CFD. Accordingly, stormwater would be discharged via a new outfall into the off-site drainage, at rates consistent with existing conditions.

Modifications to off-site stormwater facilities would not be required as a result of project development, because stormwater flow characteristics would be managed for consistency with existing conditions, through implementation of the on-site drainage system. Post-project flows leaving the project site for discharge to the off-site drainage would not exceed pre-development peak flow rates. As mentioned, this would be accomplished through use of the stormwater detention facility at the proposed public park, which would ensure that the post-development volume and velocity of flows exiting the project site do not exceed existing discharge rates. While the project would construct on-site stormwater drainage facilities, its construction would not cause significant environmental effects. Impacts would be less than significant.

Electricity, Natural Gas, Telecommunications

Other utilities associated with the project include electricity, natural gas, and telecommunications; local telephone and internet service would be provided by AT&T, cable television by Charter TV, natural gas service by PG&E, and electricity by 3CE through PG&E transmission lines. Connections to these existing service providers would be installed during construction of the proposed project, with no facility upgrades required. Construction of such utility connections would be conducted in compliance with BMPs from the project-specific Stormwater Pollution Prevention Plan, such that potential impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures BIO-1(a) through BIO-1(f), CUL-2, GEO-7, NOI-1, and TCR-1, as described in Sections 4.2, 4.3, 4.4, 4.6, and 4.8, respectively.

Significance After Mitigation

Impacts would be less than significant with mitigation. No additional mitigation beyond those identified in other sections of this EIR would be required.

Threshold 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?

Impact UTIL-2 SUFFICIENT WATER SUPPLIES WOULD BE AVAILABLE TO SERVE FULL PROJECT BUILDOUT AND REASONABLY FORESEEABLE FUTURE DEVELOPMENT DURING NORMAL, DRY, AND MULTIPLE DRY YEARS. PROJECT IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.9.1, *Setting*, and above, potable water supply for the project development would be provided by SCWD, which delivers both imported surface water supply from the CVP, as well as local groundwater produced from the North San Benito Groundwater Basin. SCWD is the DWR-approved Groundwater Sustainability Agency for the local groundwater resources, including the underlying North San Benito Groundwater Basin, and manages the basin for long-term sustainability in compliance with the Sustainable Groundwater Management Act. Water supply availability and reliability for the HUA, within which the proposed project site is located, are addressed in the regularly updated *2020 HUA UWMP* (Todd Groundwater 2021), as well as the *Hollister Urban Area Water and Wastewater Master Plan* (City of Hollister, SBCWD, and SCWD 2017).

The population growth estimates used to develop the current *2020 HUA UWMP* were based on the *Hollister Urban Area Water and Wastewater Master Plan* and the associated Update (City of Hollister, SBCWD, and SCWD 2017), and those projections were informed by land use planning data from the adopted General Plans for Hollister and San Benito County, as well as the planned development forecasts provided by the City of Hollister and SCWD (Todd Groundwater 2021). The proposed project development is included on the list of forecasted projects identified in the *2020 HUA UWMP*, indicating that the potable water demands of project-related development are accounted for in the local projections of water supply availability and reliability under varying drought conditions. However, since development of the current (2020) UWMP, the proposed project development intensity has increased by 34 residential units, from a previously assumed buildout of 137 residential units, to the currently proposed 141 single-family residences plus 30 accessory dwelling units. The project proposes a total of 171 dwelling units.

Due to the proposed increase in total number of units from 137 to 171, the annual water demand associated with full project buildout would exceed that anticipated in the 2020 UWMP by 13,111 GPD, which is the water demand associated with 34 residential dwelling units.[3] Using the ratio of 325,851 gallons per one acre-foot, 13,111 gallons (per day) divided by 325,851 gallons (per acre-foot) equals 0.040 acre-feet per day; continued, 0.040 acre-feet (per day) multiplied by 365 (days per) year equals 14.7 AFY. Therefore, the proposed project's increase of 34 residential units would increase wastewater generated from the project site by 14.7 AFY than was anticipated to occur from the project site based upon the previously projected land uses.

Table 4.9-1 presents data for water supply and demands within the HUA for years 2025 through 2040. As shown, available water supply is equal to demand in each year, including with consideration to varying climatic (drought) conditions. This is because water is only procured from the CVP and produced from the North San Benito Groundwater Basin in the quantities that it is needed during each given year. The HUA has historically relied on the North San Benito Groundwater Basin for its municipal water supply; since development of water treatment facilities beginning in 2003, CVP water imported by SCWD has also been available for direct urban use (Todd

[3] 116.5 gallons per capita per day (actual water use rates in 2020 per the UWMP) multiplied by 3.31 persons per unit (persons per single-family residence rate used in the UWMP) multiplied by 34 units (171 proposed units minus 137 units accounted for in the UWMP).

Groundwater 2021). As mentioned in Section 4.9.2(b) under "Sustainable Groundwater Management Act," the North San Benito Groundwater Basin is managed by the SBCWD as the basin's exclusive Groundwater Sustainability Agency, in accordance with a DWR-approved GSP.

The GSP defines Management Areas (MA) throughout the North San Benito Groundwater Basin, to facilitate implementation of the GSP and achievement of sustainability goals contained therein, including long-term groundwater supply availability and reliability, and with consideration to the effects of climate change (SBCWD 2021). The HUA is within the GSP-defined Hollister and San Juan MAs. Within these MAs, the largest changes in average annual water budgets over time were in municipal and industrial uses, and agricultural pumping (SBCWD 2021). Relative to baseline conditions, municipal and industrial pumping increased in the Hollister and San Juan MAs by a total of 12,900 AFY across future projections modeled for the GSP (SBCWD 2021). The GSP concluded that future baseline groundwater levels would be generally slightly lower in areas where increased pumping would occur, but that increased wastewater percolation would reduce drought-related declines in groundwater levels. In comparison to future groundwater supply conditions, which are projected to be stable and able to support the projected growth, and with consideration to the proposed project development's water demand increase of 14.7 AFY representing less than 0.1 percent of the total anticipated increase in municipal and industrial pumping to the Hollister and San Juan MAs, it is reasonably anticipated that sufficient groundwater supply will be available to meet demands.

As discussed in Section 4.10.5, *Hydrology and Water Quality,* the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater resources. This determination is based upon data from the *2020 HUA UWMP,* which describes that basin-wide outflows are approximately 6,000 to 14,000 AFY greater than basin-wide inflows, which reflects a dynamic but long-term stable groundwater system, sufficient to support additional production (Todd Groundwater 2021). As mentioned above, the project would increase water demands by 14.7 AFY; this equates to 0.11 to 0.24 percent of the local basin-wide outflows, which suggests sufficient supply availability. Additionally, the proposed project also would not decrease or interfere with the availability of imported CVP surface water supplies.

Therefore, as with existing conditions, and consistent with the projections shown in Table 4.9-1, during each year and under all climatic (drought) scenarios, SCWD would provide water supply in quantities equal to demand. Therefore, the project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years, and potential impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 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?

Impact UTIL-3 THE PROJECT WOULD GENERATE WASTEWATER FROM THE NEW RESIDENTIAL LAND USES, WHICH WOULD BE ACCOMMODATED BY EXISTING WASTEWATER TREATMENT FACILITIES OWNED AND OPERATED BY THE CITY OF HOLLISTER. SUFFICIENT WASTEWATER TREATMENT CAPACITY IS AVAILABLE. POTENTIAL IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed above under Impact UTIL-2, the proposed project development intensity has increased by 34 residential units compared to site buildout anticipated in the current (2020) UWMP, introducing a new water demand (increased from previous development projections) of 13,111 GPD (14.7 AFY). The rate of wastewater generation per residential unit generally equates to approximately 80 percent of water demand; as such, the additional wastewater generated by the project would be 10,489 GPD (11.8 AFY).

Wastewater generated by the proposed project would be treated at the City of Hollister's DWRF. Hollister's DWRF is designed to treat an average of 4.5 MGD (average between dry weather capacity of 4.0 MGD and wet weather capacity of 5.0 MGD), and currently treats an average of 2.2 MGD (City of Hollister 2018). Therefore, the DWRF has an existing available daily treatment capacity of 2.3 MGD, and the proposed project's sewage generation rate of 0.010 MGD equates to 0.43 percent of the available treatment capacity.

Sufficient wastewater treatment capacity is available at existing facilities to support the proposed project in addition to the provider's existing commitments. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 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?

Impact UTIL-4 THE AMOUNT OF SOLID WASTE THAT WOULD BE GENERATED DURING CONSTRUCTION AND OPERATION OF THE PROPOSED PROJECT WOULD NOT EXCEED THE SURPLUS CAPACITY OF THE LANDFILL SERVING THE SITE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The proposed project would generate household solid waste from full buildout of 171 residential units. In San Benito County, the average number of persons per household in January 2022 was 3.18 persons per household (California Department of Finance 2022); based upon the assumption that the proposed project characteristics would also represent 3.18 residents per residential unit, full build-out of the project would include up to 544 residents. In 2019, California's average disposal rate per resident was 6.7 pounds per day (CalRecycle 2020). Therefore, the project would generate up to 3,645 pounds per day (6.7 pounds per person per day multiplied by 544 persons equals 3,645 pounds per day). Using the ratio of 2,000 pounds per ton, 3,645 pounds (per day) divided by 2,000 pounds (per ton) equals 1.82 tons per day.

Solid waste generated during operation of the proposed project would be transported to JSRL, which is the only operating solid waste landfill in San Benito County. JSRL currently accepts approximately 220 tons of tons per day of solid waste from San Benito County. The proposed project's anticipated 1.82 tons per day would increase the current amount of solid waste generated in San Benito County (220 tons per day) by approximately 0.83 percent (the percent increase from 220 to 221.82), with 1.82 tons per day from the project representing 0.182 percent of the landfill's daily permitted capacity of 1,000 tons per day.

The County of San Benito maintains a current Landfill Operating Agreement with Waste Solutions Group of San Benito (contractor), for use of JSRL to dispose of solid waste generated and collected from within the county (County of San Benito 2021). A proposed 388-acre expansion of the JSRL was under consideration by the County. On February 7, 2024, the Board of Supervisors denied certification of the environmental impact report to expand the landfill (BenitoLink 2024).

However, regardless of the JSRL Expansion Project, which is separate and independent from the proposed project, sufficient solid waste disposal is available to meet the needs of the proposed project development. This is because disposal capacity at JSRL is preserved for in-county uses, of which the proposed project is included, and because the contractor is required to provide disposal of in-county solid waste at JSRL or an alternate facility, if necessary, thereby ensuring that sufficient solid waste disposal capacity is available to serve the proposed project. At the time of this document, JSRL is estimated to have capacity for in-county waste until approximately 2036 to 2037 (County of San Benito 2024).

The project would not 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. Potential impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact UTIL-5 THE PROPOSED PROJECT WOULD COMPLY WITH FEDERAL, STATE, AND LOCAL MANAGEMENT AND REDUCTION STATUTES AND REGULATIONS RELATED TO SOLID WASTE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.9.2, *Regulatory Setting*, the Integrated Waste Management Act requires that 50 percent of waste is diverted from landfills. In addition, pursuant to CALGreen, the project's construction contractor is required to ensure that 65 percent of non-hazardous construction and demolition debris is recycled or salvaged. CALGreen also requires the project construction contractor(s) to have a waste management plan for on-site sorting of construction debris. With development of the proposed project, it is anticipated that future project residents would engage in comparable solid waste disposal practices as present countywide patterns. Furthermore, the proposed project would be required to provide solid waste and recycling services for residents pursuant to the California Solid Waste Reuse and Recycling Access Act of 1991 and San Benito

County Code Chapter 15.01. As a result, the project would not negatively impact the County's ability to comply with the required diversion rate. The proposed project would comply with statutes and regulations related to solid waste, and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would less than significant without mitigation.

4.9.4 Cumulative Impacts

Because public utilities involve widespread distribution of centralized resource supplies, such as electricity and potable water, the geographic scope for cumulative analysis of utilities includes each of the respective utility district's service boundaries. Table 3-1, *Cumulative Projects List*, presented in Section 3, *Environmental Setting*, identifies numerous development projects that are anticipated to occur in the vicinity of the project site and are therefore presented to consideration in the analysis of cumulative impacts for each environmental issue area addressed in this document. For the issue area of utilities and service systems, select projects from Table 3-1 have been identified as having the most likely potential to introduce impacts similar to those of the proposed project such that cumulative impacts could occur. These projects include the adjacent planned Fairview Corners residential development, Gavilan Community College San Benito Campus, Roberts Ranch subdivision, West of Fairview residential development, and Santana Ranch residential development. Due to these projects being located on the same major arterial as the proposed project, and the potential for construction schedules to overlap, these are the most likely projects in the cumulative scenario to result in cumulative impacts to utilities and service systems; however, all projects identified in Table 3-1 are considered in the cumulative impacts analysis summarized below.

Impact UTIL-1 addressed the potential for off-site water, wastewater, stormwater, electricity, natural gas, or telecommunication facilities improvements to be required as a result of the project. Of these utility services, the only area requiring off-site improvements would be wastewater, and specifically the conveyance of wastewater collected from within the project development to the Hollister DWRF, which has substantial capacity available to treat effluent generated from the project, and the implementation of project-specific SWPPP during construction of the off-site conveyance facilities would provide that impacts associated with construction would be less than significant. Additionally, improvements to the Hollister DWRF would only expand the capacity of the associated wastewater system to the extent necessary to serve the proposed project. These improvements would not result in excess capacity that would accommodate or encourage cumulative development in the area. Similar to the proposed project, other projects within the cumulative scenario would incorporate project-specific design features and BMPs to reduce or avoid impacts associated with the collection and conveyance infrastructure necessary to connect to regional utility services, would not expand capacity of infrastructure beyond what is needed to serve specific cumulative projects, and would incorporate project-specific SWPPPs would be implemented as required for cumulative projects as well as the proposed project. Potential impacts associated with cumulative projects' off-site utility improvements would be site-specific, limited to the alignment of conveyance facilities, and less than significant due to compliance with regulations including the NPDES program which requires SWPPPs for certain development projects. Therefore, cumulative impacts associated with off-site utility connections would not occur as a result of the project. On-site improvements would not contribute to cumulative impacts because they are site-specific and would not have potential to combine with site-specific impacts of the proposed project to result in cumulative effects.

Impact UTIL-2 addressed water supply availability and reliability and determined that sufficient supply is reliably available to meet the proposed project's additional 14.7 AFY of water demand. It is possible that because the proposed project's increased water demand of 14.7 AFY was not accounted for in long-range planning documents including the *2020 HUA UWMP,* other development projects within the cumulative scenario could similarly introduce new water demands, and those demands could collectively result in cumulative impacts. However, as discussed under Impact UTIL-2, water supply in the HUA is actively managed by multiple coordinated parties including SCWD, the City of Hollister, and SBCWD, and water supply reliability is regularly assessed through programmatic documents including the *2020 HUA UWMP* and the *Hollister Urban Area Water and Wastewater Master Plan*. Therefore, although cumulative impacts could occur, through active management of available water supply sources, the potential for such impacts to occur would be less than significant.

Impact UTIL-3 addressed wastewater treatment capacity, and determined that the City of Hollister has substantial available daily capacity to accommodate the proposed project, with at least 40 percent of design capacity available. The design capacity of the Hollister DWRF was informed by planned development throughout the HUA. Cumulative projects would not exceed the available capacity of the Hollister DWRF, based on available information, and this cumulative impact would be less than significant. As described in Impact UTIL-3, the proposed project's wastewater generation would equate to 0.43 percent of the Hollister DWRF's remaining capacity. Therefore, the project's contribution to this impact would not be cumulatively considerable.

Impact UTIL-4 addressed solid waste and determined that sufficient disposal capacity is available to meet the needs of the project. As stated therein, JSRL would have capacity to serve in-county solid waste disposal until between 2036 and 2037, after which either JSRL would undergo an approved expansion or an alternate site selected by the contractor, should the JSRL become insufficient. The expansion of JSRL or disposal of solid waste at an alternate site selected by the contractor would be required with or without implementation of the proposed project, since JSRL is anticipated to reach disposal capacity by 2037 at the latest. The future expansion of existing or construction of a new solid waste disposal transfer station would be subject to separate CEQA review Therefore, no cumulative impacts associated with solid waste disposal would occur, and the project's contribution would not be cumulatively considerable.

Impact UTIL-5 addressed compliance with laws and regulations, and determined that the proposed project development would not result in significant impacts. It is anticipated that other projects in the cumulative scenario would similarly occur in compliance with applicable laws and regulations. Therefore, no cumulative impacts associated with regulatory compliance would occur, and the project's contribution would not be cumulatively considerable.

4.10 Effects Found Not to be Significant

Section 15128 of the *CEQA Guidelines* requires an EIR to briefly describe any possible effects that were determined not to be significant and were therefore not discussed in detail in the EIR. The sections below include the checklist questions listed in Appendix G of the *CEQA Guidelines* and a brief discussion of environmental impacts that were determined to be less than significant. Any items not addressed in this section are addressed in Sections 4.1 through 4.9 of the EIR.

The project would not result in adverse impacts to Aesthetics, Agriculture and Forestry Resources, Energy, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, and Wildfire.

4.10.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- 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 a 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?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

A scenic vista is usually defined as a panoramic view from an elevated position or a long-range view from a public vantage point. While the San Benito County 2035 General Plan does not identify any specific scenic vistas in the county, 2035 General Plan Policies C-1.16 and C-1.18 require roadways and development on hillsides to conform with natural landforms and contours to minimize visual impacts to hillsides (County of San Benito 2015a). Long range views of hillsides, part of the Diablo Range approximately 1.5 miles to the east, are visible from the project site. Given the distance between the Diablo Range and the project site, and that the proposed residences would not exceed two stories in height, the project would not result in impacts to the scenic quality of hillsides in the county. Impacts would be less than significant.

The California Department of Transportation (Caltrans) lists State Route (SR) 25 as eligible for designation as a state scenic highway (Caltrans 2018). The project site is approximately 0.4 miles north of SR 25. The project's development would be visible from SR 25, but there are no trees, rock outcroppings, or historic buildings on the project site; therefore, impacts to scenic resources within a state scenic highway would be less than significant.

The project site is in a predominantly rural (non-urbanized) area and would convert an open agricultural landscape into residential development. However, the project would be visually consistent with existing and planned residential developments in the vicinity of the project site. The proposed lot sizes and development intensity would be similar to existing residential and planned development to the south and west of the project site. Public views of the site are visible from Old Ranch Road and Fairview Road. The project site is currently developed with an existing on-site residence, barn, septic system, and leach field, which would be demolished to construct the proposed project. The project would not substantially degrade the existing visual character of the project site or the quality of public views from the project site. Impacts would be less than significant.

The project site is surrounded by rural residential uses to the north, east and south, with moderate levels of existing lighting. Across Fairview Road to the west are existing and planned residential developments. The project would result in additional lighting sources such as wall-mounted residential security lights, street lights, and lights from residents' vehicles. Proposed lighting would be similar to existing and planned residential lighting to the west. The residences are not anticipated to be constructed with reflective building materials or finishes. The project design would be required to comply with exterior lighting policies outlined in San Benito County Code Chapter 19.31, Development Lighting ("Dark Skies"), which encourage lighting practices and systems that minimize light pollution, glare, and light trespass, and curtail degradation of the nighttime visual environment while maintaining night-time safety, utility, security, and productivity. Specific County Code regulations applicable to the project include the following:

- Per Section 19.31.002, project streetlights would be required to utilize low-pressure sodium lamps and be shielded.
- Per Section 19.31.005, three lighting zones are established, with Zone I imposing the strictest regulations and Zone III imposing the least restrictive. The project site is located in Zone II. The special requirements applicable to Zone II are set forth in Section 19.31.008.
- Per Section 19.31.006(C), all light fixtures other than streetlights are required to be located, aimed, or shielded so as to minimize stray light trespassing across property boundaries.
- Per the special requirements for Zone II established in Section 19.31.008:
  - Total outdoor light output (excluding streetlights used for illumination of county roadways or private roadways) for the project would not be permitted to exceed 50,000 initial raw lamp lumens per net acre, averaged over the entire project.
  - No more than 5,500 initial raw lamp lumens per net acre may be accounted for by lamps in unshielded fixtures.
  - Outdoor recreational facilities would not be illuminated after 11:00 p.m., except to conclude a scheduled recreational or sporting event in progress prior to 11:00 p.m.
  - Class 3 lighting (used for decorative effects) would be extinguished by 11:00 p.m., except for low-wattage holiday decorations from November 15 to January 15.

Compliance with Chapter 19.31 would ensure that project light sources would not illuminate adjacent properties. The project would result in new sources of lighting and glare similar to that of existing and planned residential development in the vicinity of the site. Impacts to daytime and nighttime views would be less than significant.

4.10.2 Agriculture and Forestry Resources

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?
- Conflict with existing zoning for agricultural use, or a Williamson Act contract?

- 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))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- 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 contains Farmland of Local Importance (California Department of Conservation [DOC] 2016). The project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively referred to as Important Farmland), and would therefore not convert any Important Farmland to non-agricultural use. There would be no impact to Important Farmland.

The project site has a 2035 General Plan land use designation of Residential Mixed (RM) and is zoned as Rural (R) by San Benito County Code Section 25.09.002, both of which allow for residential development (County of San Benito 2015a). Because the project site is not located on land designated or zoned for agricultural use, the project would not conflict with existing zoning for agricultural use. San Benito County has adopted a “right-to-farm” ordinance in Chapter 19.01 of the San Benito County Code, which acknowledges that much of the county is an agricultural community. As such, property owners and residents that live adjacent to a zoning district that allows some form of agricultural operations should expect that the use and enjoyment of their property could be affected by agricultural operations. The proposed project would be adjacent to existing active agricultural lands to the north (vineyard/winery), east, and south under existing conditions, with land south of the site, and to the west, across Fairview Road, planned for future residential development. The County’s “right-to-farm” ordinance would protect the continued agricultural use of adjacent lands that are planned to remain in agricultural use. Therefore, the project would not inhibit the use of these lands or result in their conversion to another use.

Williamson Act contracts, as established by the California Land Conservation Act of 1965, enable local governments to enter contracts with private landowners to restrict land for agricultural uses in exchange for lower landowner property taxes. The project site is not enrolled in a Williamson Act contract (County of San Benito 2015b: Figure 6-2). Therefore, the project would not conflict with existing zoning or a Williamson Act contract, and impacts would be less than significant.

There is no forest land or timberland as defined by Public Resource Code Sections 12220(g) and 4526 within San Benito County or on the project site. Further, there are no large, forested areas or commercial forestry productions in the county or on the project site (County of San Benito 2015b). Therefore, the project would not conflict with existing zoning for, cause rezoning of, or result in the loss of forest land or timberland in the county. There would be no impact.

4.10.3 Energy

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?

Construction of the proposed project would require site preparation and grading including hauling material off-site; pavement and asphalt installation; residence construction; water, wastewater, and power utility installation; and landscaping. During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. However, energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the area. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes and would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. Furthermore, per applicable regulatory requirements, such as 2019 CalGreen (California Code of Regulations Title 24, Part 11), the project would comply with construction waste management practices to divert a minimum of 65 percent of construction debris from disposal at a landfill. These practices would result in efficient use of energy necessary to construct the project. In the interest of cost-efficiency, construction contractors also would not utilize fuel in a manner that is wasteful or unnecessary. Therefore, the project would not involve the inefficient, wasteful, or unnecessary use of energy during construction, and construction impacts related to energy consumption would be less than significant.

Operation of the proposed project would contribute to regional energy demand by consuming electricity, gasoline, and diesel fuels. Electricity and natural gas would be used for residential heating and cooling systems, lighting, appliances, and water and wastewater conveyance, among other purposes. Gasoline and diesel consumption would be associated with vehicle trips generated by residents. The project would be required to comply with all standards set in the latest iteration of the California Building Standards Code (California Code of Regulations Title 24), which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. California’s CalGreen standards require installation of energy-efficient light fixtures and building materials into the design of new construction projects. Further, the 2019 Building Energy Efficiency Standards (California Code of Regulations Title 24, Part 6) require newly constructed buildings to meet energy performance standards set by the California Energy Commission. Pursuant to the Building Energy Efficiency Standards, the residences constructed under the proposed project would install photovoltaic systems and would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. These standards are specifically crafted for new buildings to result in energy efficient performance so that the buildings do not result in wasteful, inefficient, or unnecessary consumption of energy. Therefore, project operation would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant.

San Benito County has not adopted any specific renewable energy or energy efficiency plan. However, the 2035 General Plan Land Use Element contains the following applicable policies related to energy (County of San Benito 2015a):

LU-2.1 **Sustainable Building Practices**. The County shall promote, and where appropriate, require sustainable building practices that incorporate a “whole system” approach to designing and constructing buildings that consume less energy, water, and other resources; facilitate natural ventilation; use daylight efficiently; and are healthy, safe, comfortable, and durable.

LU-2.2 **Green Sustainable Building Practices**. The County shall encourage sustainable building practices that go beyond the minimum requirements of the Title 24 CalGreen Code (i.e., Tier 1 or Tier 2 measures) and to design new buildings to achieve a green building standard such as Leadership in Energy and Environmental Design (LEED).

LU-2.3 **Energy Conservation Standards for New Construction**. The County shall cooperate with the local building industry, utilities, and air district to promote enhanced energy conservation standards for new construction.

LU-2.4 **Solar Access**. The County shall encourage new residential subdivisions and new commercial, office, industrial, and public buildings to be oriented and landscaped to enhance natural lighting and solar access in order to maximize energy efficiency.

LU-4.5 **Innovative Site Planning and Residential Design**. The County shall encourage new residential developments to use innovative site planning techniques and to incorporate design features that increase the design quality, and energy efficiency, and water conservation of structures and landscapes while protecting the surrounding environment.

The project includes an elongated east/west lot configuration that would accommodate daylighting with a north/south exposure for many of the lots, thus promoting energy savings and enhancing lighting. Daylighting places windows, skylights, and other openings such that sunlight can provide internal lighting, reducing the demand for electricity from internal light fixtures during daytime hours. The stormwater design would implement low-impact development techniques. The project would extend a non-potable water main for future irrigation of the park and other open space areas, which would reduce the project's potable water demand. Further, the project would meet the requirements of the 2019 Building Energy Efficiency Standards and the 2022 California Energy Code. The project would also include the installation of photovoltaic systems. All proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, including the above policies from the 2035 General Plan. Impacts would be less than significant.

4.10.4 Hazards and Hazardous Materials

Would the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

- 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?
- 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?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The project would result in the construction and operation of a new residential development. Small quantities of potentially hazardous materials such as fuels, lubricants, and solvents would be used during construction of the project. The transport of any hazardous materials would be subject to federal, state, and local regulations, which would minimize risk associated with the transport hazardous materials. Construction activities that involve hazardous materials would be required to transport such materials along roadways designated for that purpose in the County, thereby limiting risk of upset during transportation. Operationally, residential developments do not typically involve the use or storage of large quantities of hazardous materials, other than those used for typical household and landscape activities and vehicular operation. The minimal amounts of household hazardous wastes on-site would not create a significant hazard to the public or the environment. This impact would therefore be less than significant.

The proposed project would require the demolition of existing structures on-site, including a residence, barn, and septic system. Demolition could result in upset and release of hazardous materials into the environment. The existing buildings on the project site were constructed after 1981 and would therefore not contain asbestos and/or lead-based paints. Therefore, demolition would not result in health hazard impacts related to asbestos and lead-based paint to workers during construction activities and impacts would be less than significant.

Construction of the proposed project would require excavation and grading, which could result in dust pollution or construction equipment fluid spills. Excavation and grading activities would generate dust, which would mobilize any existing pollutants in the soil. The project site and areas within 0.5 mile of the project site are not listed pursuant to Government Code Section 65962.5, which includes complied lists of hazardous sites (CalEPA 2022, DTSC 2022, SWRCB 2022). While agricultural use is prevalent in the vicinity of the site, and the site has previously been farmed for oat hay, it is unlikely that on-site soils would exceed environmental screening levels for contaminants. If unanticipated contaminated soil is excavated from the site, it would be subject to proper handling and disposal pursuant to Title 14 of the California Code of Regulations, Section 17200, et. seq. Therefore, airborne dust generated by construction activities would not release hazardous materials into the environment. Additionally, construction activities would be conducted under a site-specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP includes measures to reduce soil erosion, including erosion from wind, as well as erosion from stormwater runoff. The SWPPP also includes measures to cleanup spills from construction equipment fluids. Operation of the project as a residential development would not involve the release of hazardous materials into the environment other than typical household and landscape activities and vehicular operation. Therefore, impacts would be less than significant.

No schools are located within 0.25 mile of the project site. The nearest school is Cerra Vista Elementary School, located approximately 0.8-mile northwest of the project site. The project involves the development of residential uses, which do not typically emit or involve the handling of hazardous materials. Therefore, the project would not emit hazardous emissions or handle hazardous materials within 0.25 mile of a school. There would be no impact.

The project site is not located within a public airport land use plan area or within two miles of a public airport. The nearest public airport is the City of Hollister Municipal Airport, located approximately 5.4 miles northwest of the project site. Therefore, no impact would occur.

The proposed project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Access to the project would be provided via an existing connection to Old Ranch Road and Fairview Road, which would be improved as part of the project and would provide adequate emergency access. Upon construction of the planned Fairview Corners residential development, a secondary site access to the south of the project site would connect to planned streets within Fairview Corners. Project site access points and interior roadways would be accessible by emergency vehicles and would be constructed in accordance with San Benito County Code Section 23.29.001 which requires a minimum roadway width of 28 feet for adequate for emergency vehicle access. The project would not alter off-site emergency routes or transportation facilities; therefore, impacts would be less than significant.

The project site is located in a State Responsibility Area, which are areas where the California Department of Forestry and Fire Protection (CAL FIRE) is the primary emergency response agency responsible for fire suppression and prevention, and is within a Moderate Fire Hazard Severity Zone (CAL FIRE 2007). Wildfire protection in the northern portion of the county, where the project is located, would be provided by the City of Hollister Fire Department and CAL FIRE (County of San Benito 2015b). The nearest Very High Fire Hazard Severity Zone (VHFHSZ) is located approximately 3.7 miles to the southwest (CAL FIRE 2007). The project would be developed in accordance with State and County fire standards and regulations such as the County's Subdivision Ordinance (Title 23), which provides standards for roadway widths, turn arounds, defensible space measures such as setbacks, the height of street signs and addresses to increase visibility for quick accessibility, and general water standards for fire hydrants to ensure adequate fire protection water delivery systems are available. The project would not substantially expose people or structures to a significant risk of loss, injury or death involving wildland fires as described further in Section 4.10.11, *Wildfire*. Impacts would be less than significant.

4.10.5 Hydrology and Water Quality

Would the project:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- 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?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

San Benito County is within the Central Coast Hydrologic Region and is within the jurisdiction of the Central Coast Regional Water Quality Control Board (RWQCB). San Benito County is underlain or partially underlain by 12 groundwater basins, and primarily extracts groundwater from the Gilroy-Hollister groundwater basin. Pursuant to the Sustainable Groundwater Management Act, the San Benito County Water District serves as a Groundwater Sustainability Agency (GSA) and has partnered with the Santa Clara Valley Water District to develop a Groundwater Sustainability Plan (GSP) for the basin (San Benito County Water District 2021). The project site is located approximately 1.8 miles northeast of the San Benito River and 1.2 miles southwest of Santa Anna Creek.

Federal, State, regional, and local laws and regulations govern the use and quality of water. The federal Clean Water Act is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. Section 401 of the Clean Water Act gives the RWQCBs regulatory authority over actions in waters of the United States and the State of California, including the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters of the State. Section 402 of the Clean Water Act requires that all construction sites on one acre or greater of land obtain coverage under the National Pollutant Discharge Elimination System (NPDES) permit. State regulations include the California Safe Drinking Water Act, which sets drinking water standards that are at least as stringent as the federal standards, and Sustainable Groundwater Management Act, which requires local regions to create a GSA and to adopt groundwater management plans. Community water systems must monitor for a specified list of contaminants, and report monitoring results to the State. Regionally, the Central Coast RWQCB is required by the State Water Resources Control Board to formulate and adopt a water quality control plan and establish water quality objectives. Locally, the 2035 General Plan and San Benito County Code contain goals, policies, and ordinances related to water quality, water conservation, discharge, erosion and sedimentation, landscaping, and other requirements.

The project would be subject to the above requirements during construction and operation. Construction activities could result in pollutants and residues entering surface runoff and cause adverse effects to water quality. Because the project would disturb more than one acre of land, the project applicant must obtain coverage under the Central Coast RWQCB Construction Stormwater General Permit, which requires the preparation of a SWPPP. The SWPPP must include best management practices that would avoid the pollution and sedimentation of stormwater runoff from the site. In addition, the project would be required to comply with the RWQCB's NPDES permit, which would ensure that pollutants are not released to nearby water bodies during construction. Therefore, the proposed project would not conflict with or violate any water quality standards or waste discharge requirements, otherwise degrade surface or groundwater quality, or result in substantial erosion or siltation off-site. Impacts would be less than significant.

Project development would alter existing drainage patterns and stormwater flows on site. The project site currently drains via sheet flow from west to east, with runoff flowing into an off-site drainage located to the northeast. The project includes an on-site stormwater collection system that would convey stormwater eastward into an underground detention facility located beneath the proposed public park at the easternmost edge of the site. Stormwater would then discharge into the adjacent drainage channel with controlled flow rates that do not exceed existing flow rates. The underground detention facility would treat stormwater runoff prior to its discharge into the drainage channel, which would minimize the introduction of pollutants into stormwater. The storm drain improvements would be designed in compliance with San Benito County Code Chapter 23.17, which require collection of runoff that would be generated by a 100-year flood, subject to approval by the County Engineer. Furthermore, the project includes an underground stormwater detention facility capable of retaining runoff volumes associated with the 95th percentile storm, which is greater than the volume for the detention of a 500-year storm. The controlled flow rates would ensure that the proposed project does not result in an exceedance of capacity of the existing drainage channel. Therefore, project design and compliance with existing regulations would ensure that the project would not violate water quality or discharge requirements and would not substantially alter the existing drainage pattern of the site. Impacts would be less than significant.

San Benito County Water District (SBCWD) serves as the GSA for the area defined in the North San Benito GSP. SBCWD completes a water balance every three years as part of the SBCWD Annual Groundwater Report for the northern portion of the basin. The most recent water balance for water year 2017 confirms that the inflow into the groundwater basin is sufficient to meet current cumulative pumping demands. This water balance also shows that basin-wide inflows range from around 21,000-acre feet per year (AFY) to 64,000 AFY, and outflows range from around 27,000 AFY to 50,000 AFY, generally reflecting a dynamic but long-term stable groundwater system. As described in Section 4.9, *Utilities and Service Systems,* the project would increase water demands at the project site by approximately 12.5 AFY, representing less than one percent of the groundwater basin’s minimum outflow. Therefore, the project would not result in the overdraft of the groundwater basin and would not conflict with or obstruct implementation of the North San Benito GSP. Impacts would be less than significant.

The project site is not within a recognized floodplain zone, according to maps prepared by the Federal Emergency Management Agency (FEMA; FEMA 2021) and is not located nearby a water body that could be subject to tsunami or seiche. In addition, residences do not typically use or store large quantities of pollutants other than household cleaning supplies and landscaping supplies. Therefore, the project would not impede or redirect flood flows, or risk release of pollutants due to project inundation. Impacts would be less than significant.

4.10.6 Land Use and Planning

Would the project:

- Physically divide an established community?
- 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 that would

result in a physical change to the environment not already addressed in the other resource chapters of this EIR?[1]

The proposed project would involve the subdivision of the project site into 141 residential lots and the construction of internal streets. The project would not physically divide or inhibit travel between existing residential areas in the project vicinity. Internal streets would connect to the planned streets for the Fairview Subdivision south of the project site. No new roads, linear infrastructure, or other development features are proposed that would divide an established community or limit movement, travel, or social interaction between established land uses. Therefore, there would be no impact to established communities.

The 2035 General Plan contains the following land use policies with the purpose of avoiding or mitigating an environmental effect (County of San Benito 2015a):

LU-4.5 **Innovative Site Planning and Residential Design.** The County shall encourage new residential developments to use innovative site planning techniques and to incorporate design features that increase the design quality, and energy efficiency, and water conservation of structures and landscapes while protecting the surrounding environment.

LU-4.7 **Clustered Residential Layout.** The County shall encourage clustered residential development be designed to respect existing natural features (e.g., rivers and streams, hills and ridge lines, and substantial tree stands) as appropriate to the density and character of the development, and if applicable to use such features to separate clustered parcels from farming areas.

The proposed project would be consistent with these land use policies. As discussed under Section 4.10.3, *Energy,* the project's elongated east/west lot configuration would accommodate daylighting with north/south exposure for many of the lots, thus promoting energy savings and enhancing lighting. The stormwater design would implement low-impact development techniques, and all proposed residences would be equipped with Energy Star appliances, WaterSense fixtures, and high-performance ventilation systems. Therefore, the project would be designed with features that reduce the project's overall impact on the environment, consistent with Policy LU-4.5. Additionally, the project would be located in an area with existing and planned residential developments, which would minimize sprawl and potential impacts to natural features, consistent with Policy LU-4.7. Therefore, the project would not conflict with any 2035 General Plan land use policy intended to avoid or mitigate an environmental effect, and impacts would be less than significant.

4.10.7 Mineral Resources

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?
- 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?

[1] Please note this checklist question was modified from the *CEQA Guidelines* Appendix G checklist to clarify the intent of this question. Project consistency with land use policies that are specific to a resource area discussed in Sections 4.1 through 4.9 and elsewhere within Section 4.10 are not repeated in this discussion.

San Benito County is known to be underlain by large quantities of mineral resources, primarily aggregate resources,[2] and has two Mineral Resource Zone Sectors with approximately 88 million tons of in-stream resources in addition to other resources of value (e.g., limestone and Benitoite) (County of San Benito 2015b). The project site is not located within either Mineral Resource Zone Sectors and is not known to contain mineral resources (County of San Benito 2015b; United States Geological Survey 2021). The project would not result in the loss of availability of a known mineral resource that would be of value to the region or state, or a locally important mineral resource recovery site delineated in the 2035 General Plan. Therefore, the project would not result in the loss of availability of a known mineral resource. There would be no impact.

4.10.8 Population and Housing

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)?
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project would induce population growth by introducing new homes in San Benito County. However, the project would not result in substantial unplanned growth. As of January 2022, San Benito County had a population of 65,479 people with an average of 3.18 persons per household (California Department of Finance 2022). Assuming a maximum growth scenario where each proposed residence contains an average of 3.18 residents and all residents relocate to San Benito County, the project would result in approximately 544 additional persons in the county[3]. The Association of Monterey Bay Area Governments (AMBAG) Final 2022 Regional Growth Forecast projected that San Benito County would have a population of 69,324 by 2025. Assuming all residents of the proposed project relocate from outside of the county, the addition of 544 residents is within the projected increase in the County's population. In addition, the project would be consistent with the 2035 General Plan and the County's Zoning Ordinance by including a mix of 141 single-family residences and 30 accessory dwelling units (ADU) within the Residential Mixed (RM). Therefore, the project would not induce substantial unplanned growth, and impacts would be less than significant.

The project would involve demolition of the existing residence on the project site, which is owned by the project applicant. There are no other existing dwelling units within the project site. The addition of 141 single-family residences and 30 ADUs would replace the loss of one single-family residence and would not necessitate the construction of displacement housing elsewhere. Therefore, the project would not displace substantial numbers of people or housing and effects would be less than significant.

[2] Aggregate, a mixture of sand, gravel, and crushed stone, is used to strengthen concrete and asphalt and is used extensively in road and building construction.

[3] Number of additional residents calculated by multiplying the proposed 177 residences (141 residential units and 30 ADU) by 3.18 residents per household as determined by the California Department of Finance (2022).

4.10.9 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire protection?
- Police protection?
- Schools?
- Parks?
- Other public facilities?

Through an existing contract between the County and the City of Hollister Fire Department, the Hollister Fire Department would provide fire protection services to the project. Wildfire protection in the vicinity of the project site is supported by CAL FIRE (County of San Benito 2015b). The fire station nearest to the project site is Hollister Fire Department Station 2 located approximately 1.6 miles west of the site, at 2240 Valley View Road. The proposed project would result in the addition of approximately 544 additional persons within the County which would increase the need for fire services. This increased demand could result in the expansion or construction of new fire facilities. However, San Benito County Code Title 5 (Finance), Chapter 5.01 (County Fees), Article VIII (Fire Mitigation Fees) establishes development impact fees requiring that new development provide a fair share contribution toward the provision of fire protection facilities and equipment, which may be used to construct and purchase facilities and equipment that are needed to provide fire protection services to the residents of new developments in the unincorporated County. While the project would increase demand for fire protection services, compliance with the County Fire Code and payment of impact fees would ensure County fire protection services are available. Therefore, the project would not result in substantial impacts associated with the provision of new or altered fire facilities and impacts would be less than significant.

Police protection services to the project site are provided by the San Benito County Sheriff's Office and Hollister Police Department. The San Benito County Sheriff's Station is located at 2301 Technology Parkway and the Hollister Police Department is located at 395 Apollo Way, both of which are approximately 6.9 miles northwest of the project (approximately 13 minutes driving time). The project would increase the development intensity on site and would increase the total population requiring police protection services. However, the proposed project would not introduce development to areas outside of the Sheriff Department's normal service area that would necessitate new police protection facilities. In addition, as described in Section 4.10.8, *Population and Housing*, the project would induce population growth within the range of the forecasts for the County. The proposed project would thus not create the need for new or expanded police protection facilities beyond that already planned by the County and impacts would be less than significant.

The project site is within the Hollister School District (HSD), which operates one individual alternative education program, eight elementary, and two middle schools; and the San Benito High School District (SBHSD), which contains one high school. SBHSD owns an undeveloped parcel along Best Road and was approved to purchase a property located on Wright Road (the Pura Vida property) for construction of a new high school to serve future development in the area, which may include students generated by the proposed project. The project would include the construction of 141 dwelling units and 30 ADUs. Project-generated students would most likely attend Cerra Vista Elementary School (CVES), located approximately 0.8 mile northwest from the project site, and Rancho San Justo Middle School, located approximately 2.4 miles northwest of the project site. According to the California Department of Education (CDE), CVES had a total enrollment of 588, 597, 631, 599, and 534 students during the 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21 school years, respectively (CDE 2022). According to the CDE, Rancho San Justo Middle School had a total enrollment of 872, 866, 911, 860, and 738 students during the 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21 school years, respectively (CDE 2022). The student generation rate for HSD is 0.563 students per residence (City of Hollister 2019); therefore, the project would result in an increase of approximately 96 students in HSD schools. The proposed project would increase enrollment at CVES and Rancho San Justo Middle School; however, CVES has an enrollment 97 students fewer than the recent highest enrollment year, and Rancho San Justo Middle School has an enrollment 173 students fewer than the recent highest enrollment year.[4] Therefore, these schools would not be overburdened by the addition of approximately 96 students distributed across all grades served by both schools. New students at these schools generated by the project would not result in the need for expanded or new school facilities or additional staffing, as adequate capacity exists.

Per SBHSD, peak student generation at San Benito High School is estimated to be 0.35 high school students per residential dwelling unit. Thus, the project would generate approximately 60 high school students. San Benito High School serves 90 percent of all traditional high school students in the County and has capacity for approximately 3,437 students. According to data for the 2022-2023 school year, San Benito High School hosts 3,556 students, which exceeds its student capacity (CDE 2024). With the proposed project, San Benito High School would continue to exceed its total capacity. As such, the project could potentially create the need for additional school capacity via expansion of an existing school, the construction of which could cause environmental impacts. However, in August 2023, SBHSD released the Facilities Master Plan which determined that, based on existing and projected residential growth, a second high school would be required to continue to meet the needs of the student population (SBHSD 2023). At the time of this document, the Pura Vida property has been identified for construction of a new high school, and the construction of the new school facility for the SBHSD would be subject to separate CEQA review.

The project would be required to pay HSD Developer Fees and SBHSD Level II Developer Fees. SBHSD Resolution Number 2021-2022-001, approved August 10, 2021, established a developer fee program for projects within the SBHSD service area, which would apply to the proposed project. Pursuant to Government Code Section 65997, the payment of mandatory fees to the affected school districts would reduce potential school impacts to less than significant level under CEQA. Therefore, the project would not result in significant impacts, as the payment of impact fees is considered adequate mitigation for this impact.

Refer to Section 4.10.10, *Recreation*, for analysis of impacts related to parks and recreation resources.

The project would be served by the San Benito County Library (SBCL), located approximately three miles northwest of the project site. The SBCL currently offers on-site and mobile library services, and more recently, online e-book rentals. Because SBCL is the primary library for the county, it can be assumed that the addition of approximately 544 new residents as a result of the project would increase the number of residents who utilize the SBCL. However, because the SBCL utilizes multiple

[4] Enrollment of 97 and 173 students was calculated by using difference between enrollment rates during the 2018-2019 and 2020-2021 school years at both CVES (631 students minus 543 students) and Rancho San Justo Middle School (911 students minus 738 students)

methods for library services, and is funded through property tax and required developer fees, the project would not necessitate the expansion or construction of new library facilities and impacts would be less than significant.

4.10.10 Recreation

- 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?
- 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?

San Benito County contains several large parks including Pinnacles National Park, Hollister Hills State Vehicular Recreation Area, and Fremont State Park. These national and state parks are complemented by numerous County and City-owned parks, along with school properties and private facilities. There are two neighborhood parks near the project site. Whale Park is located approximately 1.5 miles from the project site, and Ridgemark Park is located 1.8 miles away from the project site. In addition to these two existing park locations, the project includes the construction of a new 1.9-acre park on the project site that would be undertaken by the project applicant and maintained by the County of San Benito. An additional 0.5 acre of passive open space would also be provided along the southern border of the project boundary. In addition to the 1.9-acre park on parcel C, the project includes 0.2 acre of public open space on parcels E and F. In total, the project includes 2.13 acres of public park and public open space. Both the proposed park and public/passive open spaces would be dedicated to San Benito County for maintenance, funded through a community facilities district (CFD).

The project would induce population growth by introducing new residences in San Benito County. Under the maximum growth scenario, the project would result in approximately 544 additional persons in the county (141 proposed residential lots and 30 ADUs multiplied by 3.18 residents per household). These new residents would increase demand for parks and recreational facilities. In addition to the existing parks referenced above, nearby planned parks would eventually be located south of the project site, within the Fairview Corners future development site and west of the project site within the Robert Ranch Subdivision future development site.

General Plan Policy NCR-3.2 Park Ratio Standard states: “The County shall encourage and support the development of recreational facilities to serve unincorporated communities at a ratio of five acres of recreation area per 1,000 persons.” San Benito County Code Section 23.15.008 requires 0.015 acre of new parkland per new dwelling unit. To accommodate for the expected population growth, 2.12 acres[5] of new parkland would need to be included in the project. The 2.13-acre of parkland would lower the demand generated by new residents on preexisting parks and the allocation of new public park space within the project site would meet County parkland requirements for the anticipated new residents of 2.12 acres. The project applicant would also be required to pay the County’s parks and recreation developer fee for the 0.22-acre shortfall of provided parks, which would fund the maintenance of existing and construction of planned parks within the county. Therefore, with the provision of on-site parkland and payment of required developer fees, the project would have a less than significant impact regarding parks.

[5] Calculated by multiplying the proposed 141 residences (this calculation does not include ADUs) by designation of parkland of 0.015 acre per dwelling unit as determined by the San Benito County Code of Ordinances.

4.10.11 Wildfire

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?
- 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?
- 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?
- 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?

The project site is located in a State Responsibility Area and is within a Moderate Fire Hazard Severity Zone (CAL FIRE 2007). Wildfire protection in the northern portion of the county, where the project is located, would be provided by the City of Hollister Fire Department and CAL FIRE (County of San Benito 2015b). The project site is surrounded primarily by existing or planned development and agricultural fields. Large tracts of wildland fuels, such as forest or brushland, do not occur on or near the site. Because the site is in a moderate risk fire zone and the project design would be subject to review by the County for compliance with safety policies identified in the 2035 General Plan and within San Benito County Code Sections 19.37.020, 23.27.003, 25.37.003, and 25.37.004(f), the project would not expose people or structures to potentially significant loss, injury, or death involving wildland fires. Impacts would be less than significant.

Per typical California wildfire behavior, wildfire within the project site would spread most rapidly on sloped terrace areas. The site is in a large agricultural plain consisting of rolling topography with limited degrees of slope ranging from 4:1 (horizontal to vertical) to 7:1 in steeper areas and 11:1 to 18:1 in more gradual areas. The site and immediately surrounding areas do not contain steep slopes that could facilitate extreme wildfire activity. The nearest slopes are the Diablo Mountain Range foothills approximately 1.5 miles east of the project site. Given the lack of sloping land on the project site, fire spread would be slower when compared to sloping areas, which are more than 1.5 miles away. Prevailing winds in the area primarily blow towards the east (NOAA 2022), and, given that the steeper slopes are east of the site, prevailing winds would typically spread fire and smoke further to the east, away from the site. Therefore, the construction of the proposed project would not be expected to significantly expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant.

As discussed above, the project site is located on rolling hills with limited degrees of slope or changes in elevation, which would not exacerbate landslide or flooding risk to the site or surrounding area. Following wildfire events, the proposed project would not increase the risk of flooding or landslides, as site topography and designated flood zones would not be modified substantially from existing conditions. In addition, the site is not located within a Federal Emergency Management Agency (FEMA) designated flood area (FEMA 2021). Therefore, any changes to the risk of wildfire impacts facilitated by the project regarding post-fire slope instability or drainage changes would be very low. If a structural fire were to occur within the project site after development has been completed, the generally flat topography of the site would render the risk of flooding or landslide afterward negligible, because little soil would remain exposed under developed conditions. Impacts would be less than significant.

The proposed project would install utilities and other infrastructure on site. Proposed landscaping at the project site's southern boundary, near the proposed passive open space, would be maintained by San Benito County. Upon construction of the planned Fairview Corners residential development, a secondary site access to the south of the project site would connect to planned streets within Fairview Corners. Internal streets, including the upgrading of the existing Old Ranch Road, which is currently a private road, would be constructed as part of the project and dedicated to San Benito County. Proposed on-site infrastructure and roadways would conform with County standards and would not be located in undeveloped areas that have high fuel loads such as dry grasses or dense forests. Accordingly, wildfire impacts related to the installation of new infrastructure on site would be less than significant.

In addition, the fuel load on and surrounding the project site is currently grazed grasslands with very limited forestation, as such these current conditions would not be expected to experience extreme wildfire behavior. Therefore, the project would not expose people or structures to a significant risk involving wildfires, flooding, or landslides, nor exacerbate the risk of wildfire. Impacts would be less than significant.

5 Alternatives

As required by Section 15126.6 of the *CEQA Guidelines*, this EIR examines a range of reasonable alternatives to the proposed project that would attain most of the basic project objectives (stated in Section 2 of this EIR) but would avoid or substantially lessen the significant adverse impacts.

As discussed in Section 2, *Project Description*, the objectives for the proposed project are as follows:

- Create an environmentally sound community that supports livability and quality of life situated adjacent to existing residences in both the County and City to avoid leap-frogging of vacant parcels not planned for development.
- Reduce the pressure for residential development on prime farmlands and farmlands of statewide importance within San Benito County by developing on agriculturally insignificant lands.
- Provide a balanced approach to land use that accommodates future growth, protects community assets, meets affordability requirements, and protects environmental resources.
- Provide a mix of residential housing types that will meet the needs of, and be affordable to, various household sizes, unit types, and income levels, including the local county workforce such as teachers, emergency workers, nurses, and others.
- Provide at least twenty percent (20%) deed-restricted low income housing through the provision of ADUs, thereby exceeding the County's required levels throughout the project.
- Provide efficient development standards in combination with respecting the environmental hazards on the project site, including seismic zones, slopes, and natural resources that enable efficient lot design to achieve a higher density that is still appropriate for the surrounding area.
- Provide a circulation network that promotes both a safe and quiet neighborhood and enables the County's circulation and emergency services goals in this portion of the county by connecting to the adjacent approved residential street at the project site south boundary.
- Provide a second point of access (ingress and egress) for public fire, police, and emergency vehicles, private vehicles, bicyclists, and pedestrians relating to the proposed Gavilan Community College San Benito Campus and Fairview Corners residential development, thus increasing safety to those southerly developments.
- Improve existing Old Ranch Road to County standards and dedicate it to the County.
- Provide convenient on-street pedestrian facilities and shared travel lanes for bicycles to promote outdoor activity, including connection to the Fairview Corners and Gavilan College street, sidewalk, and trail network, thereby providing connectivity for walking and bicycling to the new Gavilan College Hollister campus.
- Provide cohesive and integrated land uses and infrastructure in proximity to existing utilities, infrastructure, and public services adjacent to existing/approved neighborhoods and public spaces.
- Provide for park facilities that are both formal and informal to meet a variety of activities and needs.
- Locate a new public park in an area that is both adjacent to the residences and offers views and a vista point to provide both physical and visual amenities for the residents to enjoy.
- Provide for stormwater infiltration.

- Connect to the Fairview Corners and Gavilan College utilities at the project site southern boundary, thereby providing redundancy in the domestic water system.
- Extend the County's non-potable water main to the remaining undeveloped portion of the project parcel, the Fairview Corners project to the south, the Old Ranch Road/Fairview Road connection to the west, and the on-site park to provide sustainable irrigation from a connection point at the project site southern boundary.
- Provide for emergency overland stormwater release from the northeast portion of the Fairview Corners project across the easterly side of the project site.

Included in this analysis are three alternatives, including the CEQA-required “no project” alternative, which involve changes to the project that may reduce the project-related environmental impacts as identified in this EIR. Alternatives have been developed to provide a reasonable range of options to consider that would help decision makers and the public understand the general implications of revising or eliminating certain components of the proposed project.

The following alternatives are evaluated in this EIR:

- Alternative 1: No Project
- Alternative 2: Reduced Density
- Alternative 3: Higher Density

Table 5-1 provides a summary comparison of the development characteristics of the proposed project and each of the alternatives considered. Detailed descriptions of the alternatives are included in the impact analysis for each alternative. The potential environmental impacts of each alternative are analyzed in Sections 5.1 through 5.3.

Table 5-1 Comparison of Project Alternative Buildout Characteristics

Feature	Proposed Project	Alternative 1 No Project	Alternative 2: Reduced Density	Alternative 3: Higher Density
Height	One to two stories	One story	One to two stories	One to two stories
Number of lots	141	1	106	212
Number of Single-Family Units	141 (121 detached, 20 duet)	1 (existing)	106 (90 detached, 15 duet)	212 (all duet)
Number of Accessory Dwelling Units (ADUs)	30	0	19	0
Affordability	30 units (21 percent of total lots)	None	16 units (15 percent of total lots)	32 units (15 percent of total lots)

5.1 Alternative 1: No Project

5.1.1 Description

The No Project Alternative assumes that the proposed demolition or removal of existing on-site structures, subdivision of the project site into 141 residential lots, and construction of 141 residential units plus 30 accessory dwelling units (ADU) does not occur. Current uses on the project site consist of a one-story residence, barn, septic system, and agricultural land, which would remain under this alternative.

The No Project Alternative would not fulfill all project objectives because the existing conditions would not create a community situated next to existing residences in the county to avoid leap-frogging, nor would it provide a mix of residential housing types. Consequently, the following project objectives would not be fulfilled under this alternative: provide a balanced approach to land use that accommodates future growth, protect community assets, meet affordability requirements, and protect environmental resources; provide a mix of residential housing types that will meet the needs and be affordable to various household sizes, unit types, and income levels; and provide for a mixed-income community by including deed-restricted affordable housing and providing a mix of residential housing types. Similarly, this alternative would not meet project objectives related to providing a circulation network, improving Old Ranch Road to County standards, or providing for park facilities.

5.1.2 Impact Analysis

a. Air Quality

Alternative 1 would not involve demolition or removal of existing on-site structures nor construction of new residences. Therefore, this alternative would not conflict with or obstruct implementation of Monterey Bay Air Resources District's (MBARD) Air Quality Management Plan (AQMP) or result in a cumulatively considerable net increase of any criteria air pollutant. Further, because this alternative would not expose sensitive receptors to substantial pollutant concentrations, there would be no impact and implementation of Mitigation Measure AQ-3 would not be required. Alternative 1 would not expose sensitive receptors to substantial odor emissions, and impacts would be less than significant. Overall, impacts to air quality under Alternative 1 would be less than significant and reduced compared to the proposed project.

b. Biological Resources

Under Alternative 1, demolition or removal of existing on-site structures and construction of new residences would not occur. No ground disturbance, aside from ongoing land maintenance operations, would occur. Therefore, this alternative would not result in impacts to special-status species beyond existing operations, and Mitigation Measures BIO-1(a) through BIO-1(f) would not be required. Further, Alternative 1 would not involve the placement of rock slope protection to facilitate water discharge into the swale located to the northeast of the project site. Therefore, no potential impacts to protected wetlands would occur, and Mitigation Measures BIO-3(a) and BIO-3(b) would not be required. Because Alternative 1 would not involve demolition, removal, grading, or construction, this alternative would not interfere substantially with wildlife movement as no habitat linkages occur on the project site, and would not conflict with local policies, ordinances. Additionally, the project site is not within the area of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation agreement within the county. Therefore, impacts to biological resources under Alternative 1 would be less than significant, and impacts would be reduced compared to the proposed project.

c. Cultural Resources

Under Alternative 1, demolition or removal of existing on-site structures, grading, and construction of new residences would not occur. Therefore, this alternative would not result in impacts to cultural resources. Because no ground-disturbing activities would occur under Alternative 1, it is unlikely that unanticipated archaeological deposits would be discovered, and implementation of

Mitigation Measure CUL-2 would not be required. There would be no impact to cultural resources under Alternative 1, and impacts would be reduced compared to the proposed project.

d. Geology and Soils

As discussed in Section 4.4, *Geology and Soils,* the Tres Pinos fault is known to partially underlie the project site. Alternative 1 would not involve construction of new residences or additional structures on site and would therefore not increase the number of persons or residences on site that could experience risk of loss, injury, or death due to rupture of a known earthquake fault. Impacts would be less than significant.

While strong seismic ground shaking is an existing risk at the project site, Alternative 1 would not involve new construction; therefore, implementation of Mitigation Measure GEO-2 would not be required. Because Alternative 1 would not involve new construction, there is also low potential for risks to life or property to occur due to expansive soils. Therefore, impacts related to soil hazards would be less than significant under Alternative 1, and impacts would be reduced compared to the proposed project.

Under Alternative 1, demolition or removal of existing structures and construction of new residences would not occur, and this alternative would not require grading and excavation. Therefore, the project would not result in substantial erosion or the loss of topsoil, and preparation of a Stormwater Pollution Prevention Plan would not be required. Additionally, because Alternative 1 would not involve ground-disturbing activities, this alternative would not result in impacts to previously undisturbed portions of the project site underlain by geologic units with high paleontological sensitivity. Therefore, implementation of Mitigation Measure GEO-7 would not be required and impacts to paleontological resources would be reduced under this alterative. Finally, the existing residence within the project site utilizes a septic tank for wastewater disposal; however, this alternative would not increase the amount of wastewater generated or the capacity of the existing septic system or involve alteration to the soils that support the septic system. Impacts would therefore be less than significant.

Overall, Alternative 1 would have less than significant impacts related to geology and soils, and implementation of Mitigation Measures GEO-2 and GEO-7 would not be required. Impacts to geology and soils would be reduced under this alternative compared to the proposed project.

e. Greenhouse Gas Emissions

Alternative 1 would not involve construction or operation of new residences at the project site. Therefore, this alternative would not generate increased temporary or operational GHG emissions. There would be no impact, and impacts would be reduced compared to the proposed project. Alternative 1 would not exceed GHG emissions thresholds established by the 2022 Scoping Plan and would result in reduced impacts to GHG emissions compared to the proposed project as no development would occur. Alternative 1 would be generally consistent with the 2022 Scoping Plan, Association of Monterey Bay Area Governments (AMBAG) 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), and San Benito County General Plan.

f. Noise

Alternative 1 would not involve demolition or removal or construction, including grading and excavation. Therefore, this alternative would not result in the generation of noise levels that exceed San Benito County General Plan standards. Further, this alternative would not involve construction activities that would generate ground-borne vibration, and there would be no impact. Similar to the proposed project, Alternative 1 would not result in impacts related to aircraft noise as the project site is not within two miles of an airport or within an airport land use plan. Alternative 1 would involve continued agricultural operations at the project site. Noise generated by agricultural operations at the site would not exceed existing levels and would not exceed established noise standards. Alternative 1 would have less than significant impacts related to noise, and impacts would be reduced compared to the proposed project.

g. Transportation

This alternative would not involve construction of 171 total residences or internal roadways in the project site. Accordingly, Alternative 1 would not impact any existing transit, roadway, bicycle, and pedestrian facilities and would not conflict with a program, plan, ordinance, or policy addressing the circulation system. This alternative would not increase vehicle miles traveled (VMT) to and from the project site and would therefore not conflict with *CEQA Guidelines* Section 15054.3 by generating VMT that exceeds applicable thresholds. Alternative 1 would not involve alterations to existing roadways and would therefore not increase hazards due to geometric design features or result in inadequate emergency access. Therefore, Alternative 1 would have no impacts to transportation, and impacts would be reduced compared to the proposed project.

h. Tribal Cultural Resources

Alternative 1 would not involve grading, excavation, or other ground disturbing activities. Therefore, this alternative would not have the potential to disturb or damage unknown tribal cultural resources. Implementation of Mitigation Measure TCR-1 would not be required, and there would be no impact. Impacts to tribal cultural resources would be reduced under Alternative 1 compared to the proposed project.

i. Utilities and Service Systems

Alternative 1 would not generate new residents on the project site. Therefore, this alternative would not increase water demand and would be adequately served during normal, single-dry, and multiple dry years. Alternative 1 would not generate additional wastewater or solid waste and would not exceed the capacity of the City of Hollister’s Domestic Water Reclamation Facility, as the existing residence is not served by these facilities; therefore, new or expanded wastewater or solid waste infrastructure would not be required. Alternative 1 would be consistent with federal, State, and local management and reduction statutes and regulations related to solid waste. Alternative 1 would not require or result in the relocation or construction of new or expanded utility facilities, and there would be no impact. Impacts to utilities and service systems under Alternative 1 would be reduced compared to the proposed project.

5.2 Alternative 2: Reduced Density

5.2.1 Description

Similar to the proposed project, this alternative would involve demolition or removal of the existing on-site residence, barn, septic system, and leach field. However, instead of subdivision into 141 residential lots and construction of 141 residential units and 30 ADUs, Alternative 2 would involve an approximately 25 percent reduction in density compared to the proposed project. Under

Alternative 2, the existing lot would be subdivided into 106 residential lots, and these lots would be developed with 91 one- and two-story single-family detached units and 15 single-family duet units. The entirety of the site would be divided, resulting in, on average, larger sized residential lots. A total of 19 ADUs would also be offered as an optional feature to homebuyers. Alternative 2 would include 16 affordable units (15 percent), per an affordable housing agreement between the applicant and the County, which is 14 fewer affordable units than the proposed project. Compared to the proposed project, Alternative 2 would involve 35 fewer lots and 46 fewer residential units, and a total site population of 410, approximately 134 residents less than the proposed project. Similar grading and excavation would occur under Alternative 2 compared to the proposed project. Similar internal roadways, sidewalks, and utility infrastructure would be included in this alternative, but would be smaller in scale due to the reduced number of residences. This alternative would construct an on-site park and open space area the same size and location as under the proposed project.

Because Alternative 2 would reduce the number of housing units on-site, it would not fulfill project objectives related to the provision of a mix of residential housing types to the same extent as the proposed project. These objectives include: provide a balanced approach to land use that accommodates future growth, protect community assets, meet affordability requirements, and protect environmental resources; provide a mix of residential housing types that will meet the needs and be affordable to various household sizes, unit types, and income levels; and provide for a mixed-income community by including deed-restricted affordable housing and providing a mix of residential housing types.

5.2.2 Impact Analysis

a. Air Quality

Alternative 2 would involve fewer residences and therefore a reduction in residents compared to the proposed project. Accordingly, Alternative 2 would not conflict with or obstruct implementation of the MBARD AQMP as it would not exceed growth assumptions made in the AQMP. Alternative 2 would involve the same amount of demolition (or removal) and grading as the proposed project. Although slightly less grading would be required as fewer residences would be constructed, more fine grading would be required to eliminate retaining walls that are necessary with the proposed project but would not be necessary under this alternative, which would result in an overall similar amount of grading. However, because this alternative would involve construction of 46 fewer residential units, construction-generated emissions and operational emissions would be slightly reduced compared to the proposed project. Using methodology described in Section 4.1, *Air Quality,* CalEEMod was used to estimate approximate emissions that would occur under this alternative, and according to modeling outputs, Alternative 2 would result in an approximate 20 percent decrease in reactive organic gas (ROG) emissions during construction. Emissions of other pollutants (NO_x, CO, PM_{10}, and $PM_{2.5}$) would be similar to the proposed project. During operation, Alternative 2 would result in an approximate 27 percent decrease in ROG, CO, $PM_{10,}$ and $PM_{2.5}$ emissions due to fewer vehicle trips associated with this alternative (Appendix F). Therefore, similar to the proposed project, Alternative 2 would not result in a cumulatively conservable net increase of any criteria pollutant for which the project region is in non-attainment, and impacts would be reduced.

Similar to the proposed project, Alternative 2 would potentially expose sensitive receptors to substantial pollutant concentrations in the form of toxic air contaminants (TACs) during construction. Mitigation Measure AQ-3 would still be required under this alternative, and impacts would be less than significant. As with the proposed project, construction-related odors would be short-term and temporary, and Alternative 2 would not result in other emissions that would adversely affect a substantial number of people.

Overall, impacts related to air quality would be reduced under Alternative 2 compared to the proposed project; however, impacts would remain less than significant with mitigation.

b. Biological Resources

Alternative 2 would disturb the same area as the proposed project, which would potentially impact special-status plant and animal species. Similar to the proposed project, Alternative 2 would require implementation of Mitigation Measures BIO-1(a) through BIO-1(f), which would reduce impacts related to special-status species to less than significant. As with the proposed project, Alternative 2 would not impact riparian or sensitive natural communities as the project site does not contain such features. Alternative 2 would also involve placement of rock slope protection into the swale on the northeast site boundary and would result in the direct filling of approximately 21 square feet of protected wetlands, just as under the proposed project. Alternative 2 would also require implementation of Mitigation Measures BIO-3(a) and BIO-3(b), which would reduce impacts to the swale to less than significant. Further, similar to the proposed project, Alternative 2 would not interfere with wildlife movement as no known regionally significant wildlife movement corridors or habitat linkages are known to occur on the project site, and Alternative 2 would not conflict with local policies or ordinances protecting biological resources.

Overall, impacts to biological resources would be similar to the proposed project under Alternative 2 and would be less than significant with mitigation.

c. Cultural Resources

Alternative 2 would involve demolition or removal of the existing barn and single-family residence located on the project site*,* neither of which meet the 45-year age threshold for historical resources. Therefore, there would be no impact to historical resources, similar to the proposed project. Grading and excavation that would occur under Alternative 2 could potentially unearth, adversely change, or damage previously unidentified archaeological resources. Mitigation Measure CUL-2 would be required under this alternative, and impacts would be less than significant with mitigation, similar to the proposed project.

d. Geology and Soils

Alternative 2 would be located on the same project site as the proposed project, and accordingly would be subject to the same seismic and soil-related hazards as the proposed project. However, Alternative 2 would involve construction of 46 fewer residences, and would therefore facilitate a smaller project site population compared to the proposed project. Therefore, the risk of loss, injury, or death involving rupture of a known earthquake fault, ground shaking, ground failure, seismic-related liquefaction, landslides, lateral spreading, and subsidence would be slightly reduced compared to the proposed project. Similar to the proposed project, Alternative 2 would incorporate the building exclusion zone shown in Figure 4.4-2 in Section 4.4, *Geology and Soils,* and would require implementation of Mitigation Measure GEO-2, which would reduce impacts related to seismicity and soil stability to less than significant. Alternative 2 would also be required to implement a Stormwater Pollution Prevention Plan compliant with the National Pollutant Discharge Elimination System to minimize impacts related to soil erosion or the loss of topsoil, and impacts would be less than significant. Similar to the proposed project, this alternative would receive wastewater services from the City of Hollister and would not require the use of septic tanks or alternative wastewater disposal systems. Accordingly, there would be no impact. Due to the presence of sediments with high paleontological sensitivity, Alternative 2 would require implementation of Mitigation Measure GEO-7 and impacts to paleontological resources would be less than significant.

Overall, Alternative 2 would result in reduced impacts to geology and soils compared to the proposed project, and impacts would be less than significant with mitigation.

e. Greenhouse Gas Emissions

Similar to the proposed project, Alternative 2 would generate temporary greenhouse gas (GHG) emissions during construction and long-term increases in GHG emissions associated with operation. As discussed in Section 4.5, *Greenhouse Gas Emissions,* the proposed project would be consistent with the local actions included in Appendix D of the 2022 Scoping Plan. Alternative 2 would generally be expected to meet most of the same local actions included in Appendix D as the proposed project. However, Alternative 2 would not meet the at least 20 percent affordable housing key project attribute like the proposed project would, as only 15 percent of units under Alternative 2 would be affordable units. Additionally, Alternative 2 would not meet the VMT reduction key project attribute since the project would exceed the impact threshold of 19.6 VMT per capita established in the County's SB 743 Implementation Policy by approximately 3.5 percent and no feasible mitigation is available to reduce the VMT. Any potential mitigation to reduce GHG emissions would require reducing VMT, which is unlikely to reduce VMT the amount needed, as discussed further under Section 5.2.2.g, *Transportation*. Therefore, Alternative 2 would not be consistent with the 2022 Scoping Plan, and impacts are presumed to be significant and unavoidable, greater than the proposed project.

f. Noise

Alternative 2 would involve demolition or removal of existing on-site structures, excavation and grading, and construction of 106 residences and up to 19 ADUs. Construction of Alternative 2 would involve similar construction equipment as the proposed project, which under a high-intensity construction scenario would not generate noise that would exceed established standards. Because of the reduced buildout, Alternative 2 would involve less construction equipment and/or a shorter construction period. As a result, impacts related to construction noise and ground-borne vibration would be reduced under Alternative 2 and would be less than significant.

Because Alternative 2 would generate fewer residents and associated vehicle trips, operational noise associated with mechanical equipment and traffic would decrease. Therefore, Alternative 2 would not generate noise or ground-borne vibration that would exceed established standards and impacts would be reduced compared to the proposed project.

Because Alternative 2 would be located on the same site as the proposed project, it would not be within two miles of an airport or an airport land use plan. Therefore, noise impacts related to airports would be less than significant under this alternative, as they are for the proposed project.

Overall, noise impacts would be reduced compared to the proposed project and impacts would be less than significant.

g. Transportation

Alternative 2 would involve construction of 106 residences at the project site, and would not include roadway or pedestrian improvements beyond those of the proposed project. Similar to the proposed project, this alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and impacts would be less than significant.

Similar to the proposed project, development under Alternative 2 would exhibit similar travel characteristics and have the same home-based VMT per capita as other residential uses within its Transportation Analysis Zone. This alternative implements an affordability scenario that meets the County affordability requirements. Because, unlike the proposed project, Alternative 2 does not provide additional low-income housing (beyond County requirements), it would exceed the impact threshold of 19.6 VMT per capita established in the County's SB 743 Implementation Policy by approximately 3.5 percent. Alternative 2 would be required to implement transportation demand management measures for residential uses to reduce project-generated VMT by at least 3.5 percent. However, transportation demand management measures rely on the availability of existing robust transit service, bicycle facilities, and pedestrian facilities, which do not exist in the project area (Appendix H). Therefore, it is unlikely that this mitigation would be adequate to reduce VMT the amount needed. Therefore, impacts are presumed to be significant and unavoidable, greater than the proposed project.

Alternative 2 would involve similar internal roadways and site access points as the proposed project, and all roadways would be constructed or improved to conform with the County's standard to provide a 60-foot right-of-way. Therefore, Alternative 2 would not substantially increase hazards associated with incompatible uses or vehicles on roadways, would provide adequate emergency access, and would have less than significant impacts.

Overall, while some transportation impacts of Alternative 2 would be slightly reduced compared to the proposed project, impacts related to VMT would be increased compared to the proposed project, and would be significant and unavoidable.

h. Tribal Cultural Resources

Alternative 2 would involve grading and excavation of the project site, similar to the proposed project. Though there are no known tribal cultural resources present within the project site, it is possible that ground disturbance during construction of Alternative 2 could encounter unknown tribal cultural resources. Mitigation Measure TCR-1 would be required under this alternative, which would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level. Impacts related to tribal cultural resources would be similar to the proposed project and would be less than significant with mitigation.

i. Utilities and Service Systems

Alternative 2 would involve the construction of 46 fewer residential units than the proposed project, and would thus reduce demand for water, wastewater, electric power, natural gas, or telecommunications facilities. As discussed in Section 4.9, *Utilities and Service Systems,* the proposed project would not require or result in the relocation or construction of new or expanded utility facilities beyond proposed improvements associated with the project, the environmental effects of which are analyzed throughout this EIR. Because Alternative 2 would involve construction of 46 fewer residential units than the proposed project, utility demand would be proportionately reduced under this alternative. Therefore, Alternative 2 would not require new or expanded utility facilities beyond improvements associated with this alternative, which would be similar to the proposed project but reduced in scale. Impacts would be less than significant.

As described in Section 4.9, *Utilities and Service Systems,* the proposed project would exceed water demand anticipated for the project site in the UWMP by approximately 14.7 acre-feet per year (AFY). Because this alternative would involve an approximately 25 percent reduction in the number of residences built, Alternative 2 would involve an approximately 25 percent reduction in water demand compared to the proposed project, or approximately 11.0 AFY beyond demand anticipated for the project site. Because it can be reasonably anticipated that sufficient water supply will be available to meet water demands of the proposed project (see Section 4.9, *Utilities and Service Systems*, Impact UTIL-2) it can also be reasonably anticipated that sufficient water supply will be available to meet demands of this alternative. Therefore, impacts related water supply would be reduced compared to the proposed project and impacts would be less than significant.

Alternative 2 would generate less wastewater than the proposed project, as it would involve fewer residences. As shown in Section 4.9, the proposed project would generate approximately 10,489 gallons of wastewater per day; since Alternative 2 would involve approximately 25 percent fewer residences, this alternative would result in the generation of 25 percent less wastewater, or approximately 7,867 gallons per day. This represents less than 0.4 percent of the remaining capacity of the Hollister Domestic Water Reclamation Facility. Therefore, impacts related to wastewater and wastewater treatment capacities would be reduced under this alternative. The proposed project is anticipated to generate 1.82 tons of solid waste per day; because Alternative 2 would involve approximately 25 percent fewer residences, this alternative would result in the generation of 25 percent less solid waste, or approximately 1.37 tons per day. This represents less than one percent of the John Smith Road Landfill's daily permitted capacity. Therefore, impact related to solid waste would be reduced compared to the proposed project and impacts would be less than significant.

5.3 Alternative 3: Higher Density

5.3.1 Description

Similar to the proposed project, this alternative would involve demolition or removal of the existing on-site residence, barn, septic system, and leach field. Alternative 3 would include subdivision of the project site into 212 residential lots. These lots would be developed with 212 single-family duet units, which is 41 more residential units than under the proposed project. A total of 15 percent of the residences (32 units) would be designated as affordable housing, per an affordable housing agreement between the applicant and the County. Due to increased density of residential units under this alternative, ADUs would not be offered as an optional feature to homebuyers.[1] The 41 additional residences would increase the site population by approximately 130 residents compared to the proposed project, for an overall site population of 674.

The intent of the additional residential units as compared to the proposed project is to provide additional housing closer to the maximum allowable density of the project site under the current zoning designation. The increase in total residential units would also increase the provision of affordable housing units to 32 units, based on County requirements. This alternative would involve a

[1] As stated in Section 2.5.3, *Accessory Dwelling Units*, the County's Zoning Code Chapter 25.27 and California Government Code Section 65852.2 allows for the construction of an ADU on any lot which is zoned for residential use and is connected to public water and wastewater service. While ADUs could be constructed by homeowners following buildout of Alternative 3, ADUs would not be offered by the developer as an option for potential homebuyers.

similar amount of grading and excavation as the proposed project, and the construction of internal roadways, sidewalks, and a park. The on-site park and open space area would be the same size and location as under the proposed project. Alternative 3 would also involve the same utility improvements as the proposed project, but infrastructure would be slightly larger in capacity to accommodate additional residences.

Alternative 3 would meet the project objectives, similar to the proposed project. These objectives include: provide a balanced approach to land use that accommodates future growth, protect community assets, meet affordability requirements, and protect environmental resources; provide a mix of residential housing types that will meet the needs and be affordable to various household sizes, unit types, and income levels; and provide for a mixed-income community by including deed-restricted affordable housing and providing a mix of residential housing types. This alternative would provide a mix of residential housing types and would provide for a mixed-income community by including deed-restricted affordable housing. Alternative 3 would also meet objectives related to the provision of on-street pedestrian facilities, public park facilities, and stormwater infiltration facilities.

5.3.2 Impact Analysis

a. Air Quality

Alternative 3 would involve the same amount of demolition or removal and grading as the proposed project; however, this alternative would require the use of additional construction equipment and/or a longer construction period compared to the proposed project as more residential units would be built. Similarly, this alternative would increase operational emissions, as this alternative would accommodate 130 more residents than the proposed project, for a total of 674 residents. The population growth projections used in MBARD’s 2012-2015 AQMP forecast that the population of San Benito County will increase by approximately 5,315 people between 2020 and 2030; therefore, while Alternative 3 would increase the population in San Benito County more than the proposed project, the population facilitated by this alternative still would not exceed MBARD projections. Therefore, Alternative 3 would be consistent with MBARD’s AQMP. Further, because the proposed project is far below maximum daily construction emission thresholds, construction of 41 additional units would not exceed these thresholds. According to CalEEMod modeling outputs (Appendix F), Alternative 3 would result in higher pollutant emissions, with an approximate 20 percent increase from the emissions predicted for the proposed project. These emissions would still be within MBARD thresholds. Impacts would be slightly increased compared to the proposed project but would remain less than significant.

Similar to the proposed project, Alternative 3 would potentially expose sensitive receptors to substantial pollutant concentrations in the form of TACs during construction. Mitigation Measure AQ-3 would still be required under this alternative, and impacts would be slightly increased due to additional construction (less than one percent increase). TAC emissions would not substantially increase under this alternative because construction would generally be similar to the proposed project. Further, while this alternative would involve 41 more residences than the proposed project, all residences included in Alternative 3 would be duet units; therefore, while the number of units increases, Alternative 3 would not have a considerable increase in emissions as compared to the proposed project, since the quantity of construction equipment and overall construction timeline would be comparable to the proposed project. Impacts would be less than significant. Additionally, construction-related odors would be short-term and temporary, and Alternative 3 would not result in other emissions that would adversely affect a substantial number of people.

Overall, impacts related to air quality would be slightly increased under Alternative 3 compared to the proposed project, but impacts would remain less than significant with mitigation.

b. Biological Resources

Despite the higher density, Alternative 3 would disturb the same area as the proposed project. Therefore, this alternative would result in similar impacts to special-status plant and animal species. Like the proposed project, Alternative 3 would require implementation of Mitigation Measures BIO-1(a) through BIO-1(f), which would reduce impacts related to special-status species to less than significant. As with the proposed project, Alternative 3 would not impact riparian or sensitive natural communities as the project site does not contain such features. Alternative 3 would also involve placement of rock slope protection into the swale on the northeast site boundary and would result in the direct filling of approximately 21 square feet of protected wetlands, just as under the proposed project. Alternative 3 would also require implementation of Mitigation Measures BIO-3(a) and BIO-3(b), which would reduce impacts to the swale to less than significant. Further, similar to the proposed project, Alternative 3 would not interfere with wildlife movement as no known regionally significant wildlife movement corridors or habitat linkages are known to occur in the project site, and Alternative 3 would not conflict with local policies or ordinances protecting biological resources.

Overall, impacts to biological resources would be similar to the proposed project under Alternative 3 and would be less than significant with mitigation.

c. Cultural Resources

Alternative 3 would involve demolition or removal of the existing barn and single-family residence located on the project site, neither of which meet the 45-year age threshold for historical resources. Therefore, there would be no impact to historical resources, similar to the proposed project. This alternative would involve grading and excavation of the same area as the proposed project, and these ground-disturbing activities could potentially unearth, adversely change, or damage previously unidentified archaeological resources. Mitigation Measure CUL-2 would be required under this alternative, and impacts would be less than significant with mitigation, similar to the proposed project.

d. Geology and Soils

Alternative 3 would be subject to the same seismic and soil-related hazards as the proposed project. Alternative 3 would involve construction of 41 additional units and would therefore facilitate a larger project site population compared to the proposed project. Therefore, the risk of loss, injury, or death involving rupture of a known earthquake fault, ground shaking, ground failure, seismic-related liquefaction, landslides, lateral spreading, and subsidence would be slightly increased compared to the proposed project. Similar to the proposed project, Alternative 3 would involve the building exclusion zone shown in Figure 4.4-2 in Section 4.4, *Geology and Soils,* and would include implementation of Mitigation Measure GEO-2, which would reduce impacts related to seismicity and soil stability to less than significant. Alternative 3 would also be required to implement an NPDES-compliant Stormwater Pollution Prevention Plan to minimize impacts related to soil erosion or the loss of topsoil, and impacts would be less than significant. Similar to the proposed project, this alternative would receive wastewater services from the City of Hollister and would not require the use of septic tanks or alternative wastewater disposal systems. Accordingly, there would be no impact. Due to the presence of sediments with high paleontological sensitivity, Alternative 3 would require implementation of Mitigation Measure GEO-7 and impacts to paleontological resources would be less than significant.

Overall, Alternative 3 would result in slightly increased impacts related to geology and soils compared to the proposed project, though impacts would remain less than significant with mitigation.

e. Greenhouse Gas Emissions

Similar to the proposed project, Alternative 2 would generate temporary GHG emissions during construction and long-term increases in GHG emissions associated with operation. As discussed in Section 4.5, *Greenhouse Gas Emissions,* the proposed project would be consistent with the local actions included in Appendix D of the 2022 Scoping Plan. Alternative 3 would generally be expected to meet most of the same location actions included in Appendix D as the proposed project. However, Alternative 2 would not meet the at least 20 percent affordable housing key project attribute like the proposed project would, as only 15 percent of units under Alternative 2 would be affordable units. Additionally, Alternative 2 would not meet the VMT reduction key project attribute since the project would exceed the impact threshold of 19.6 VMT per capita established in the County's SB 743 Implementation Policy by approximately 3.0 percent and as no feasible mitigation is available to reduce the VMT. Any potential mitigation to reduce GHG emissions would require reducing VMT, which is unlikely to reduce VMT the amount needed, as discussed further under Section 5.3.2.g, *Transportation*. Therefore, Alternative 3 would not be consistent with the 2022 Scoping Plan, and impacts are presumed to be significant and unavoidable, greater than the proposed project.

f. Noise

Alternative 3 would involve demolition or removal of existing on-site structures, excavation and grading, and construction of 212 duet residences. Construction of Alternative 3 would involve similar construction equipment to the proposed project, which would not generate noise that would exceed established standards. However, because of increased buildout, Alternative 3 would involve the use of additional construction equipment and/or a longer construction period. As a result, impacts related to construction noise and groundborne vibration would be slightly increased under Alternative 3. However, such impacts are anticipated to remain less than significant.

Additionally, because Alternative 3 would result in a site population of 674, approximately 130 more residents than the proposed project, operational noise associated with mechanical equipment and traffic would be increased as well. Using similar methodology as discussed in Section 4.6, *Noise,* the 41 additional HVAC units that would likely be installed under Alternative 3 would incrementally increase exterior noise levels. The proposed project would result in an estimated noise level of 38 dBA L_{eq} at the nearest off-site sensitive receptors west of the project site; Alternative 3 would result in an estimated noise level of 39 dBA L_{eq} at these receptors. Therefore, while mechanical noise would be increased, exterior noise generated under Alternative 3 would not exceed the 50 dBA L_{eq} standard established by Section 19.39.030 of the San Benito County Municipal Code. Therefore, impacts would remain less than significant.

Similar to the proposed project, Alternative 3 would not be within two miles of an airport or an airport land use plan. Therefore, noise impacts related to airports would be less than significant under this alternative, as they are for the proposed project. Overall, impacts related to noise would be greater compared to the proposed project and impacts would be less than significant.

g. Transportation

Alternative 3 would involve construction of 212 residences at the project site and would not include roadway, or pedestrian improvements beyond those of the proposed project. Similar to the proposed project, this alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and impacts would be less than significant.

Similar to the proposed project, development under Alternative 3 would exhibit similar travel characteristics and have the same home-based VMT per capita as other residential uses within its Transportation Analysis Zone. This alternative implements an affordability scenario that meets the County affordability requirements. Because, unlike the proposed project, Alternative 3 does not provide additional low-income housing (beyond County requirements), it would exceed the impact threshold of 19.6 VMT per capita established in the County's SB 743 Implementation Policy by approximately 3.0 percent. Alternative 3 would be required to implement transportation demand management measures for residential uses to reduce project-generated VMT by at least 3.0 percent. However, transportation demand management measures rely on the availability of existing robust transit service, bicycle facilities, and pedestrian facilities, which do not exist in the project area (Appendix H). Therefore, it is unlikely that this mitigation would be adequate to reduce VMT the amount needed. Therefore, impacts are presumed to be significant and unavoidable, greater than the proposed project.

Alternative 3 would involve similar site access points as the proposed project, and all internal roadways would be constructed or improved to conform with the County's standard to provide a 60-foot right-of-way. Therefore, Alternative 3 would not substantially increase hazards associated with incompatible uses or vehicles on roadways, would provide adequate emergency access, and would have less than significant impacts. Overall, transportation impacts of Alternative 3 are greater than the impacts of the proposed project, and impacts related to VMT would be significant and unavoidable.

h. Tribal Cultural Resources

Despite the higher density, Alternative 3 would disturb the same area as the proposed project. Though there are no known tribal cultural resources present within the project site, it is possible that ground disturbance during construction of Alternative 3 could encounter unknown tribal cultural resources. Mitigation Measure TCR-1 would be required under this alternative, which would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level. Impacts related to tribal cultural resources would be similar to the proposed project and would be less than significant with mitigation.

i. Utilities and Service Systems

Alternative 3 would involve the construction of 41 more residential units than the proposed project, and would result in increased demand for water, wastewater, electric power, natural gas, or telecommunications facilities. However, Alternative 3 would be located on the same site as the proposed project, which is within the Hollister Urban Area. Therefore, this alternative would not require new water supply facilities, beyond those associated with on-site project development. On-site improvements would be similar to those of the proposed project and would be slightly larger in size and capacity to serve the higher density development facilitated by this alternative. Impacts related to new or expanded water facilities would be less than significant, similar to the proposed project.

As with the proposed project, wastewater conveyance and treatment service for this alternative would be provided by the City of Hollister. As described in Section 4.9, *Utilities and Service Systems,* the proposed project would generate approximately 10,489 gallons of wastewater per day. Because development under Alternative 3 would be approximately 24 percent greater than the proposed project, this alternative would generate 24 percent more wastewater, or approximately 13,006 gallons per day. As shown in Table 4.9-2 of Section 4.9, this represents less than 0.6 percent of the remaining capacity of the Hollister Domestic Water Reclamation Facility. Therefore, impacts related to wastewater and wastewater treatment capacities would remain less than significant under this alternative.

As described in Section 4.9, *Utilities and Service Systems,* the proposed project would exceed water demand anticipated for the project site by approximately 14.7 AFY. Because this alternative would involve 41 more units than the proposed project, or a 24 percent increase in the number of units, this alternative would involve a 24 percent increase in water demand, or approximately 18.2 AFY beyond the demand anticipated for the project site. Similar to the proposed project, the water demand of Alternative 3 would represent less than 0.01 percent of the total increase in municipal and industrial pumping to the Hollister and San Juan sustainable groundwater management areas. Therefore, while sufficient water supply is available for buildout of Alternative 3, impacts related to water supply would be increased under this alternative. Alternative 3 would generate a greater amount of solid waste than the proposed project. The proposed project is anticipated to generated 1.82 tons of solid waste per day; because Alternative 3 would involve approximately 24 percent more residences, this alternative would result in the generation of 24 percent more solid waste, or approximately 2.3 tons per day in total. This represents less than one percent of the John Smith Road Landfill’s daily permitted capacity. Therefore, impacted related to solid waste would be reduced compared to the proposed project and impacts would be less than significant.

Overall, impacts related to wastewater, wastewater treatment capacities, solid waste capacities, and solid waste reduction would be less than significant, but greater than the proposed project.

5.4 Alternatives Considered but Rejected

The *CEQA Guidelines* state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination (*CEQA Guidelines* Section 15126.2[c]). The County considered an alternative that would involve assuming an increased number of ADUs (up to 25 more than the proposed project). However, this alternative was rejected as ADUs are allowed by right on any lot and would not represent an alternative distinctly different from the proposed project. The County also considered an alternative that would involve development of the project at an alternate site. However, this alternative was rejected because the project applicant does not own another property of comparable size or location.

5.5 Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative among the alternatives to the proposed project. The environmentally superior alternative must be an alternative that reduces some of the environmental impacts of the project, regardless of the financial costs associated. Identification of the environmentally superior alternative is an informational procedure and the alternative identified as the environmentally superior alternative may not be that which best meets the goals or needs of the proposed project.

Table 5-2 indicates whether each alternative's environmental impact is greater than, less than, or similar to that of the proposed project for each of the issue areas studied. Based on the alternatives analysis provided above, Alternative 1, the No Project Alternative, would be the environmentally superior alternative. Alternative 1 would avoid significant and unavoidable impacts related to transportation and VMT, and project-level significant but mitigable impacts related to ground disturbance would be eliminated, including biological and cultural resources, geology and soils, and tribal cultural resources. However, Alternative 1 would not meet any of the project objectives and would not fulfill the intent of the San Benito County General Plan to develop the project site with higher density land uses (up to 20 units per acre, per the Residential Mixed [RM] land use designation of the project site).

If the No Project Alternative is the environmentally superior alternative, CEQA requires that an environmentally superior alternative among the remaining alternatives be identified (*CEQA Guidelines* Section 15126.6[e]). Based on this consideration, Alternative 2 would be the environmentally superior alternative. Alternative 2 would result in similar but reduced impacts to air quality, geology and soils, GHG emissions, noise, and utilities and service systems due to decreased buildout and fewer residents. However, Alternative 2 would result in greater impacts to transportation, particularly as it relates to VMT. VMT impacts are anticipated to be significant and unavoidable under Alternative 2, compared to less than significant under the proposed project. Alternative 2 would meet project objectives by providing a mix of housing types while also respecting the environmental hazards and natural resources known to occur on the site, and by taking a balanced approach to land use that accommodates future growth while protecting environmental resources. Although Alternative 2 would also fulfill project objectives related to the provision of deed-restricted affordable housing, as well as the provision of park facilities, pedestrian facilities, and utility infrastructure, although infrastructure would be smaller in scale, and it would accomplish these objectives to a lesser extent than the project. Alternative 2 would not fulfill project objectives related to the provision of a mix of residential housing types to the same extent as the proposed project including: provide a balanced approach to land use that accommodates future growth, protect community assets, meet affordability requirements, and protect environmental resources; provide a mix of residential housing types that will meet the needs and be affordable to various household sizes, unit types, and income levels; and provide for a mixed-income community by including deed-restricted affordable housing and providing a mix of residential housing types. It should further be noted that Government Code Section 65589.5(d) prohibits local agencies from disapproving housing development projects for very low, low-, or moderate-income households, unless it makes substantial written findings.

Alternative 3 would result in greater impacts to air quality, geology and soils, GHG emissions, noise, transportation, and utilities and service systems due to the additional residences and residential population this alternative would facilitate. VMT impacts are anticipated to be significant and unavoidable under Alternative 3, compared to less than significant under the proposed project.

Therefore, Alternative 3 is not environmentally superior to the proposed project. Alternative 3 would meet project objectives, however, including those related the provision of a mix of housing types and deed-restricted affordable housing, high density development that is still appropriate for the surrounding area, and the provision of park facilities, pedestrian facilities, and utility infrastructure.

Table 5-2 Impact Comparison of Alternatives

Issue	Proposed Project Impact Classification	Alternative 1: No Project	Alternative 2: Reduced Density	Alternative 3: Higher Density
Air Quality	Less than Significant	<	<	>
Biological Resources	Less than Significant with Mitigation	<	=	=
Cultural Resources	Less than Significant with Mitigation	<	=	=
Geology and Soils	Less than Significant with Mitigation	<	<	>
Greenhouse Gas Emissions	Less than Significant	<	>	>
Noise	Less than Significant	<	<	>
Transportation	Less than Significant	<	>	>
Tribal Cultural Resources	Less than Significant with Mitigation	<	=	=
Utilities and Service Systems	Less than Significant	<	<	>
Overall Impact Comparison		**9 <** **0 =** **0 >**	**4 <** **4 =** **1 >**	**0 <** **3 =** **6 >**

Note: Comparison of impacts is based on the overall impact of the alternative on the resource or issue.

< Alternative impacts would be less than those of the proposed project

= Alternative would result in impacts similar to the proposed project

> Alternative impacts would be greater than those of the proposed project

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6 Other CEQA Required Discussions

This section discusses growth-inducing impacts, irreversible environmental impacts, and removal of obstacles to growth that would be caused by the proposed project.

6.1 Growth Inducement

Section 15126(d) of the *CEQA Guidelines* requires a discussion of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth-inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

6.1.1 Population Growth

As discussed under Population and Housing in Section 4.10, *Effects Found to be Less Than Significant,* the project would generate population growth as it would involve the subdivision of the project site into 141 residential lots and the construction of 171 dwelling units. As of January 2022, San Benito County had a population of 65,479 people with an average of 3.18 persons per household (California Department of Finance 2022). Assuming a maximum growth scenario where each residence contains an average of 3.18 residents and all residents relocate to San Benito County, the project would result in approximately 544 additional persons in the county.

The project would directly induce population growth by constructing new residences in San Benito County. However, the project would not result in substantial unplanned growth. The AMBAG Final 2022 Regional Growth Forecast projected that San Benito County would have a population of 69,324 by 2025. The addition of 544 people is within the projected increase in the county's population. Additionally, the project site is designated in the County's General Plan for the residential growth proposed by the project. Therefore, the project would not induce substantial unplanned growth, and would not result in impacts related to growth inducement.

6.1.2 Economic Growth

The project would generate temporary employment opportunities during construction. Because construction workers would be expected to be drawn from the existing regional work force, construction of the project would not be growth-inducing from a temporary employment standpoint. Additionally, construction would be relatively short-term and would be completed in phases over three years; therefore, it would be unlikely that temporary workers would move to the region permanently for construction jobs. Further, the project would not add long-term employment opportunities to the county as there are no commercial, office, or industrial uses proposed on site. Therefore, the proposed project would not be expected to induce substantial economic expansion to the extent that direct physical environmental effects would result.

6.1.3 Removal of Obstacles to Growth

The proposed project site is currently developed with a one-story residence and barn, with the remainder of the 33.4-acre site farmed for oat hay. The residence is connected to municipal water supply through Sunnyslope County Water District (SCWD). Old Ranch Road, a paved two-lane private road, provides access to adjacent rural residences and terminates at the existing residence on the project site. The project would involve construction of internal roadways to provide access to the proposed residences. The project would be designed to connect with the planned Fairview Corners residential development and Gavilan College immediately south of the project site; however, while this connection is helpful to Fairview Corners and Gavilan College (by providing a secondary means of access), those developments are not dependent on the addition of this road. As such, the proposed project itself would not induce construction of future development in off-site areas. Project site improvements would be intended to accommodate expected traffic volumes and provide access to each residence via internal roadways and provide access to planned adjacent residential development.

As discussed in Section 2, *Project Description,* project-generated wastewater would be treated by the City of Hollister through an agreement with SCWD under which the SCWD would serve as a wastewater collection system operator, with responsibility to maintain and repair sewer lines and facilities located outside the Hollister City limits, and would connect these collection lines to City facilities with ultimate treatment of wastewater in the City's tertiary treatment plant in conformance with the intent of the Memorandum of Understanding. On August 7, 2023, the City of Hollister City Council voted to have a contract prepared between the City and SCWD to provide sewer service to Gavilan College, this project (Lands of Lee), the Dividend Homes project, and the failing Cielo Vista sewer plant. The Hollister City Council further directed that the contract(s) be referred to the San Benito County Local Agency Formation Commission (LAFCO) for review.

The project includes installation of an on-site wastewater collection system that would connect to an off-site main located at the intersection of Fairview Road and Old Ranch Road. The on-site system would include service laterals, manholes, and underground pipes. The on-site system and off-site connections would be sized to serve the proposed project buildout only, with no excess capacity available to accommodate new connections from neighboring properties. The eastern portion of the site would drain via gravity to the east, where a lift station would pump the effluent through a force main to a high point at Old Ranch Road and proposed Street C. Wastewater would then gravity flow west to the connection at Fairview Road and Old Ranch Road. Figure 2-8 shows the location of proposed wastewater infrastructure on site.

Similarly, as described in Section 2.5.7, *Utilities*, the exact location, design, and capacity of the lift station is currently unknown, subject to SCWD's determination. This lift station may provide service for only the proposed project, or may provide service for the proposed project in combination with another approved adjacent development. In both cases, the station would be sized to provide adequate capacity for the proposed project only or for the proposed project and adjacent approved development, which has already undergone separate environmental review and approval. The lift station would not include excess capacity that could result in additional or unanticipated growth in the vicinity of the project site.

The project applicant would construct the required on-site and off-site facilities. SCWD would maintain the on-site system, including the on-site wastewater lift station, with the maintenance costs financed through the collection of monthly wastewater rates. SCWD would continue to maintain its system south of Old Ranch Road, and the City of Hollister would maintain its collection and treatment systems.

The extension of wastewater services along Old Ranch Road would be adjacent to four parcels that are not currently connected to a municipal wastewater system. These parcels are currently zoned Rural, which only allows for low-density residential development, and are each developed with one single-family residence. These parcels would require rezoning to be developed at higher densities, which would trigger additional project-specific CEQA review. Because these parcels are not zoned for higher density development, it would be speculative to presume that the extension of a wastewater main adjacent to such parcels would result in a high density development of those parcels (*CEQA Guidelines* Section 15064[d][3]). Additionally, the wastewater main extension would be sized to accommodate wastewater conveyance capacity only from the proposed project, and would not be over-sized such that capacity is available to adjacent unconnected parcels.

As described previously, improvements to City of Hollister facilities would expand the capacity of the associated wastewater system, but only to the extent necessary to serve the project. These improvements would not result in excess capacity that could accommodate unplanned growth within the City of Hollister's service boundary. These improvements are not intended to facilitate growth beyond the project site, and similarly, water and stormwater facilities on the project site are sized to accommodate demands from the proposed development only, with no unused excess capacity. Therefore, project implementation would not remove an obstacle to growth.

6.2 Irreversible Environmental Effects

The *CEQA Guidelines* require that EIRs contain a discussion of significant irreversible environmental changes. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

The proposed project would involve the development of 141 residences in San Benito County, and the construction of ADUs on 30 of the proposed lots. The project would also involve construction of internal roadways, a public park, and utility infrastructure. Construction and operation of the project would involve an irreversible commitment of construction materials and non-renewable energy resources. The project would involve the use of building materials and energy, some of which are non-renewable resources, to construct the proposed residences, internal roadways, and other related infrastructure. Consumption of these resources would occur with any development in the region and are not unique to the proposed project.

The project would also irreversibly increase local demand for non-renewable energy resources such as petroleum products and natural gas. However, increasingly efficient building design would offset this demand to some degree by reducing energy demands of the project. Project design would be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*) and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California, and the Green Building Standards Code requires solar access, natural ventilation, and stormwater capture. Consequently, the project would not use unusual amounts of energy or construction materials and impacts related to consumption of non-renewable and slowly renewable resources would be less than significant. Consumption of these resources would occur with any development in the region and is not unique to the proposed project.

The project would also require a commitment of law enforcement, fire protection, water supply, wastewater treatment, and solid waste disposal services. However, as discussed under Public Services in Section 4.10, *Effects Found to be Less Than Significant,* and Section 4.9, *Utilities and Service Systems*, impacts to these service systems would be less than significant.

CEQA requires decision makers to balance the benefits of a proposed project against its significant and unavoidable environmental risks, if any are present, in determining whether to approve a project. That determination—when significant and unavoidable environmental impacts are present—is referred to by CEQA as a "Statement of Overriding Considerations." The analysis contained in this EIR concludes that the proposed project would not result in any significant and unavoidable impacts, and therefore the adoption by the County of a Statement of Overriding Considerations is not required.

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5 Alternatives

No references in this section.

6 Other CEQA Related Discussions

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7.2 List of Preparers

This EIR was prepared by the County of San Benito with the assistance of Rincon Consultants, Inc. Consultant staff involved in the preparation of the EIR are listed below.

RINCON CONSULTANTS, INC.

Megan Jones, MPP, Principal
Aileen Mahoney, Project Manager
Annaliese Miller, Senior Environmental Planner
Aubrey Mescher, Senior Environmental Planner
William Vosti, Senior Environmental Planner
Gianna Meschi, Associate Environmental Planner
Kayleigh Limbach, Associate Environmental Planner
Aaron Rojas Jr., Associate Environmental Planner
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Samantha Kehr, Senior Biologist
Andrew Pulcheon, Principal Archaeologist
Hannah Haas, Senior Archaeologist
Leanna Flaherty, Archaeologist
David Daitch, PhD, Principal Paleontologist
Andrew McGrath, PhD, Associate Paleontologist

Allysen Valencia, GIS Analyst
Isabelle Radis, GIS Analyst
Luis Apolinar, Publishing Specialist

Appendix A

Notice of Preparation and Comment Letters Received

NOTICE OF PREPARATION

NOTICE IS HEREBY GIVEN that San Benito County will serve as the Lead Agency, consistent with Section 15020 and 15021 of the California Environmental Quality Act (CEQA) Guidelines, in preparing an Environmental Impact Report (EIR) for the proposed **Lee Subdivision Project** (the "proposed project"). The County is requesting your input on the scope and content of the environmental issues and alternatives to be evaluated in the EIR. Responsible agencies may need to use the EIR to be prepared by the County when considering permits or other approvals for the project, and trustee agencies should plan to review and comment on the EIR with respect to trust resources within their jurisdiction.

PROJECT LOCATION: The project site is located at 291 Old Ranch Road, which connects to Fairview Road approximately 0.5 mile north of Airline Highway/State Route (SR) 25, in unincorporated San Benito County (APN 025-320-004). The approximately 27.45-acre site contains unused grassland, an existing roadway, and one existing single-family residence. The site is bordered by rural single-family residences to the north and west, and agricultural/open space to the east. The site is designated Residential Mixed (RM) under the 2035 General Plan and is zoned Rural (R). Figure 1 shows the location of the project site within San Benito County and Figure 2 shows an aerial view of the project site.

PUBLIC REVIEW PERIOD: This NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b). The 30-day public comment period during which San Benito County will receive comments on the NOP for the EIR begins February 22, 2022 and ends on March 24, 2022.

PROJECT DESCRIPTION: The project would involve the demolition of the existing on-site residence (constructed in the late 1980s), subdivision with subsequent development of 141 residential lots, a public park and open space, utilities infrastructure, internal public streets, and improvements to Old Ranch Road. As shown in Figure 3, the project includes 121 single-family detached units and 20 attached duet units. A total of 15 percent of the residences will be affordable, and the applicant will enter into an affordable housing agreement with the County. Up to 25 accessory dwelling units (ADUs) will also be offered as an optional feature to home buyers. The project would require a zone change to Residential Multiple (RM) combined with a Planned Unit Development (PUD) overlay zone to expand the flexibility allowed in the development standards. Sunnyslope County Water District (SCWD) would provide water service to the project, and either SCWD or the City of Hollister would provide wastewater treatment services for the project.

PUBLIC AGENCY APPROVALS: The proposed project and related discretionary actions would require adoption by the County of San Benito Board of Supervisors (BOS). The Planning Commission and other decision-making bodies would review the proposed project and make recommendations to the BOS.

PROBABLE ENVIRONMENTAL EFFECTS: The EIR will address the potential physical environmental effects of the proposed project for each of the environmental topics outlined in the CEQA Guidelines, Appendix G. The EIR will also address the cumulative impacts resulting from other past, present and reasonably foreseeable future projects. As of the date of this NOP and based on currently available information, it is anticipated that the proposed project may have potentially significant impacts in connection with Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Noise, Transportation, Tribal Cultural Resources, and Utilities and Service Systems.

COMMENTING ON THE SCOPE OF THE EIR. The County welcomes agency and public input regarding environmental factors potentially affected (listed above) and project alternatives to be considered for evaluation. All written comments will be considered and must be submitted by Wednesday, March 24, 2022.

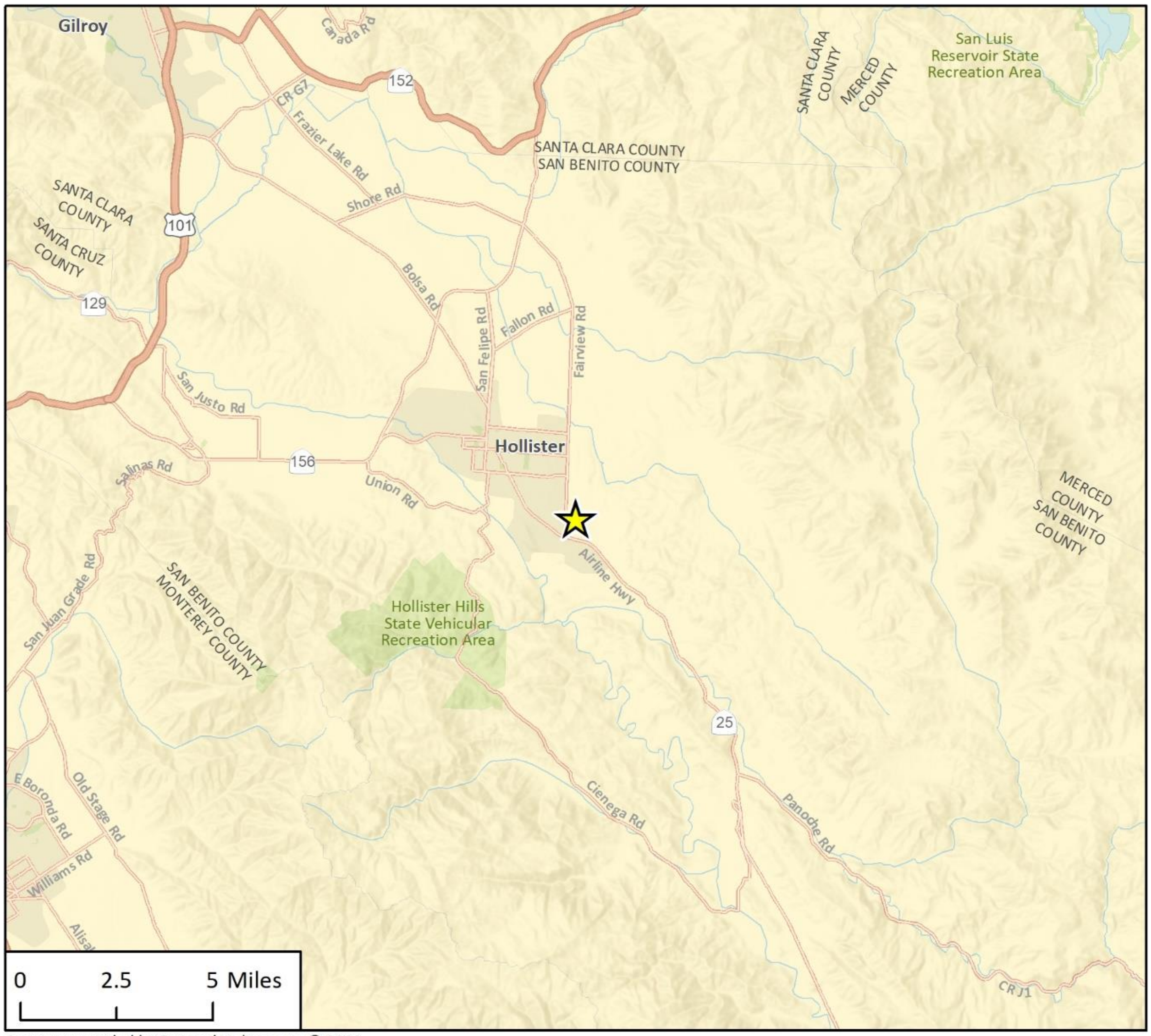
Please direct your written comments to:

San Benito County
Resource Management Agency
Attn: Arielle Goodspeed, Senior Planner
2301 Technology Parkway
Hollister, California 95023
agoodspeed@cosb.us

ATTACHMENTS

Figure 1	Regional Location
Figure 2	Project Location
Figure 3	Project Site Plan

Figure 1 Regional Location



Imagery provided by Esri and its licensors © 2022.

Project Location

N

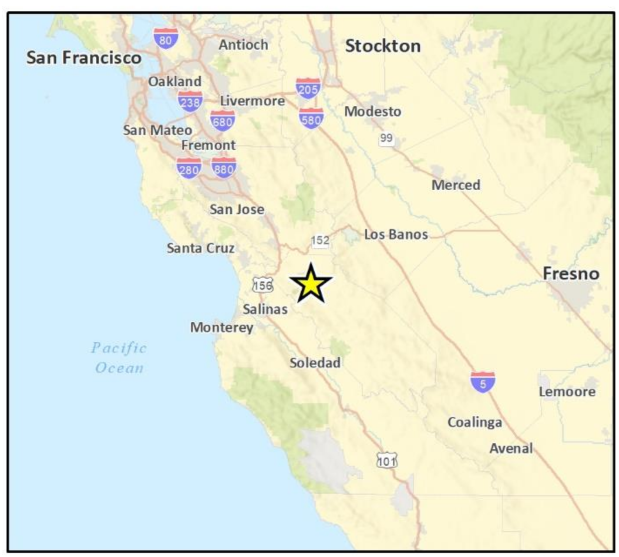
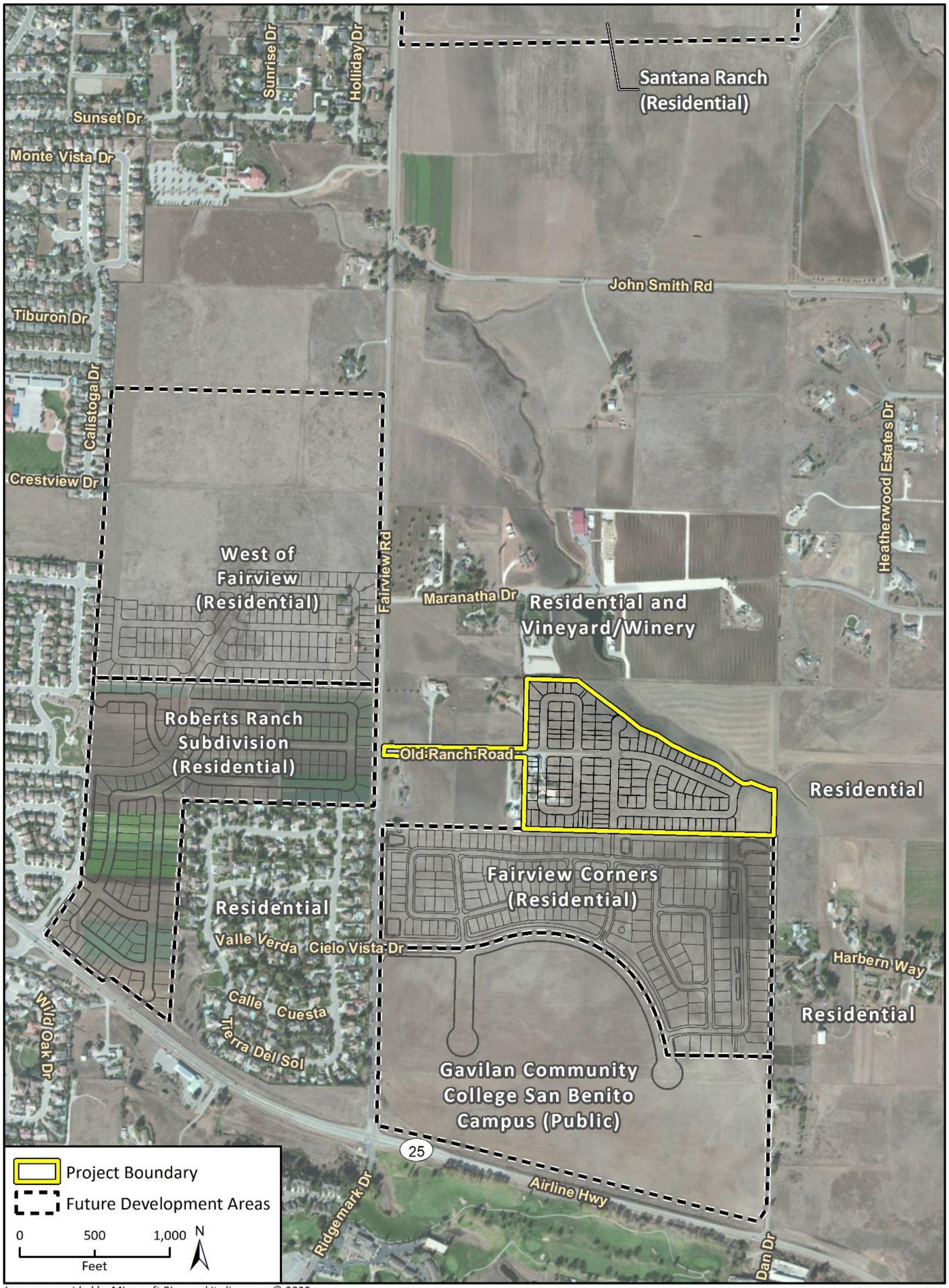


Fig 1 Regional Location

Figure 2 Project Location



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Additional information provided by San Benito General Plan, 2021.

Figure 3 Project Site Plan

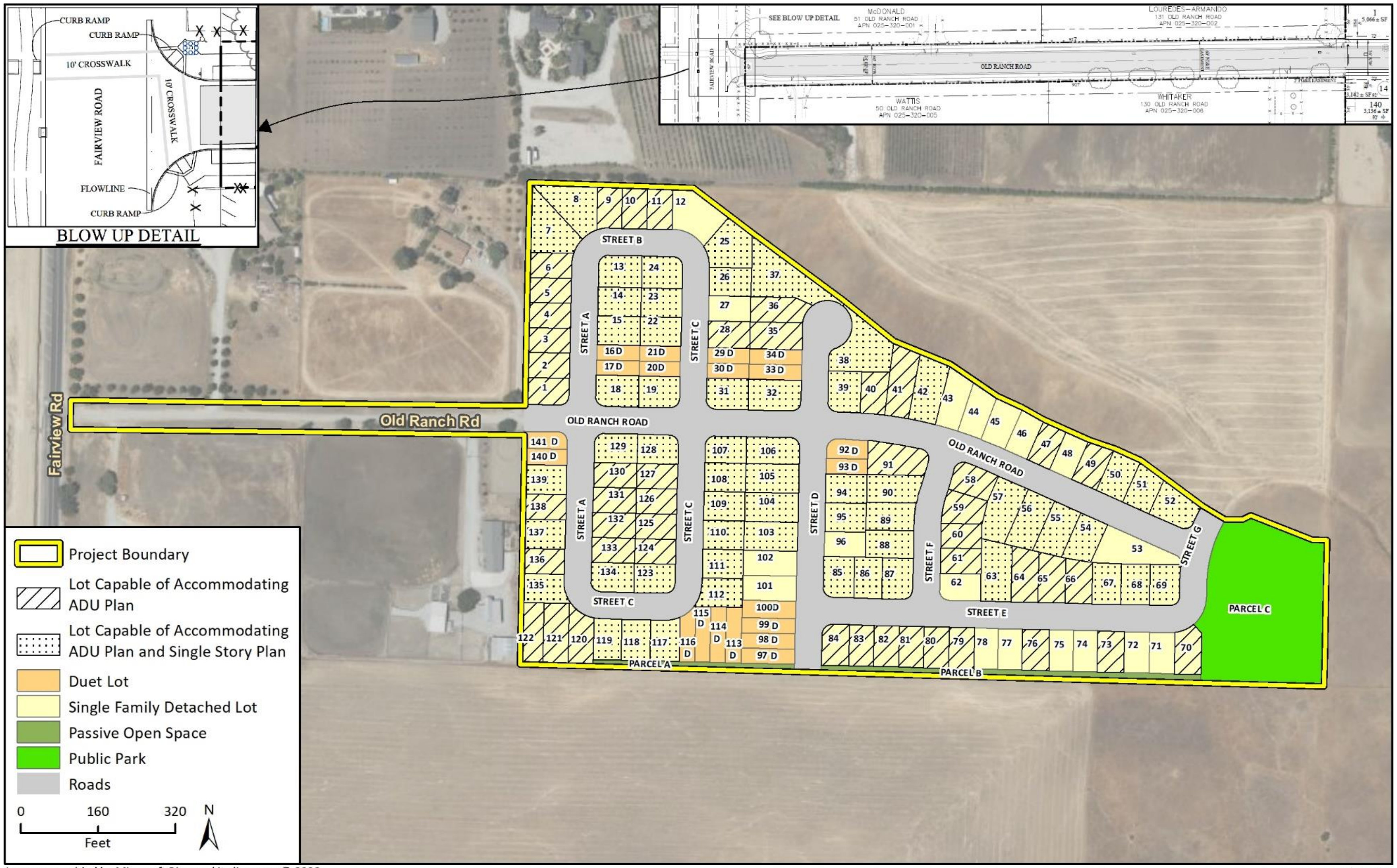

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Fig 2-3 Proposed Site Plan

LOCAL AGENCY FORMATION COMMISSION
SAN BENITO COUNTY

2301 Technology Parkway
Hollister, CA 95023
Phone: (831) 637-5313

DATE: March 4, 2022

TO: Arielle Goodspeed, Principal Planner
San Benito County RMA

FROM: Bill Nicholson, Executive Officer

RE: Notice of Preparation Response on the Lands of Lee Tentative Map

Thank you for including San Benito LAFCO in the early consultation process and Notice of Preparation (NOP) for the "Lands of Lee" tentative subdivision map project. The environmental review concerns identified in this memo should be considered along with the earlier LAFCO review and policy issues identified in my letter addressed to you and the County RMA Office dated November 13, 2020. Based on the NOP, the project currently consists of a proposed 141-unit residential subdivision and related public facilities to be located on 27.4 acres located on the east side of Fairview Road which is designated "Residential Mixed" in the County General Plan.

In LAFCO's role as a "responsible agency" under CEQA, the Environmental Impact Report will be used by the Commission in its role to consider approval of an out-of-agency boundary sewer connection from the City of Hollister in compliance with Government Code section 56133(b). As indicated in the November 2020 correspondence, the consideration of this sewer service extension will also require an expansion of the City's Sphere of Influence (SOI) to include the project site, and documentation from the City to comply with the requirement that the city service is being provided "in anticipation of a future annexation." Therefore, the project description should include the SOI amendment as part of the proposal. While it is outside the County's planning authority, the property should also be designated for some level of residential use consistent with the proposed development under the City of Hollister's General Plan. Typically, a city SOI boundary is based on the anticipated service area and future annexation goal of the respective City's General Plan. However, this is a procedural issue and this memo will focus on the CEQA considerations important to LAFCO.

In terms of wastewater and LAFCO, the EIR should recognize LAFCO among the entitlements from other federal, state and regional agencies for its action required for wastewater services provision to the project. Correspondingly, the EIR should identify the City of Hollister as the approval authority of the sewer extension, its design and long-term maintenance. LAFCO and the City would also rely on the EIR for actions on the associated SOI expansion.

Among LAFCO's purposes enumerated in the State Government Code are to encourage orderly growth and development through the determination of logical agency boundaries, the efficient delivery of public services by those local agencies which can best accommodate and provide necessary government services, and housing for families of all income levels, in the most efficient manner feasible. These goals are to be balanced with "…sometimes competing state interests of discouraging urban sprawl, preserving open-space and prime agricultural lands, and efficiently extending government services." (Government Code section 56001)

Based on these stated purposes of LAFCO, the environmental areas we will be concerned with include the identification of significant impacts to natural and open-space resources, the efficient delivery of public services to the development, and ensuring there is adequate capacity for those services. I understand the site does not contain any prime agricultural land. While LAFCO is restricted from directly considering the land uses proposed, we do acknowledge the project involves a proposed 15% affordable housing component, and possible future ADUs may be added to provide additional housing.

These same topic areas will be involved in the Commission's consideration of the City sphere of influence expansion. The EIR should identify and take into consideration the five factors LAFCO is to consider and adopt determinations for their action which are listed in Government Code section 56425(e) which also includes identification of "the existence of any social or economic communities of interest in the area…" which would include the issues whether the site should be annexed into the City rather than be developed in the County, or whether the Sunnyslope County Water District is a more logical and efficient alternative provider for sewer services.

While the property is already within the Sunnyslope County Water District boundary, LAFCO approval of the delivery of District sewer service to the property may still be required. While the initial assumption was that the District has historically acted as a water and sewer district, investigation into historic annexation files, including this property and the nearby Fairview Corners and Cielo Vista projects, has revealed that the District only offered to provide water service to the territory. I am still researching this issue and need to consult with LAFCO Counsel and the Sunnyslope District General Manager. I will have a determination regarding the possible LAFCO role in the near future - well before the Draft EIR would be completed.

Let me know if you want to discuss further or have questions about these comments. I can be reached at: (209) 769-0472, or by email at BNicholson@cosb.us

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DR. SHAWN TENNENBAUM
SUPERINTENDENT

March 16, 2022

VIA EMAIL

Arielle Goodspeed
Senior Planner
County of San Benito
Resource Management Agency
2301 Technology Parkway
Hollister, CA 95023
Email: agoodspeed@cosb.us

RE: Notice of Preparation (NOP) of Environmental Impact Report (EIR) for the **Lee Subdivision Project**

Dear Ms. Goodspeed:

On behalf of the San Benito High School District ("District"), we are responding to the County of San Benito's recent issuance of a Notice of Preparation ("NOP") of Environmental Impact Report ("EIR") for the Lee Subdivision Project ("Lee Project"). The Lee Project calls for the development of 141 residential lots, with the potential for future home buyers to build 25 additional accessory dwelling units on their parcels.

As the primary provider of public secondary education within the County of San Benito ("County"), we continue to be very involved in the County's consideration of the environmental consequences of its future plans and policy objectives. This correspondence follows other similar letters from the District, as well as recent presentations made to County officials, regarding the ongoing and cumulative negative impacts of residential growth, including the Lee Project, on school facility capacity, as well as traffic circulation and safety conditions around San Benito High School that worsen as the community grows and all students travel to a single high school from homes across the County. We note that despite our ongoing communications with the County, the NOP fails to note even in the summary of "Possible Environmental Effects" any anticipated effect on education and public services. Yet without the means to construct a second high school in the next 5-7 years, the impact of the Lee Project will be significant and adverse.

Significant Adverse Impact of Lee Project

The cumulative impact on our schools of unmitigated growth is *considerable*, *significant*, and *adverse*, and the EIR for the Lee Project must squarely acknowledge and address these problems for decision makers and the public. Further, in light of the significant impact of planned growth or increasing residential density on our District, the EIR must propose mitigation measures to lessen or avoid those impacts.

The District looks forward to consulting with the County as needed during EIR development to ensure that its analysis of the Lee Project reflects current facts. Some key facts to be considered include:

School Capacity and Development Impacts

- Per the District's current estimates, peak student generation is estimated to be 0.35 high school students per residential dwelling unit.[1] For the Lee Project as revised (121 single family homes and an additional 20 "duet units" and a potential for an additional 25 accessory dwelling units), this will generate approximately 65 students.

- Currently, San Benito High School, which serves over 90% of all traditional public high school students in the County, has capacity for approximately 3,437 students. Enrollment at the school currently stands at 3,423 students. Current projections show enrollment growth of 237 students over the next two years from existing development and development projects underway, *not including the Lee Project or other single and multi-developments projects seeking entitlements through the City of Hollister ("City") or the County*. Thus, the EIR analysis should reflect a negative capacity at the high school by the time the Lee Project is constructed. The analysis of the impact of the Lee Project on the District must consider the cumulative impact of residential growth on school facility capacity, traffic volume, circulation and safety at the high school.

- The District anticipates an additional 1,900-3,130 additional students over the next 20 years from residential development, based on the City of Hollister 2020 Land Use and Market Demand Study and information provided by the County. That kind of growth may require not just a second high school, but a third high school. The District currently owns land located on Best Road, south of the City of Hollister, which is under consideration for development of a new high school. However, 2020 construction cost estimates put the price tag of even a small new high school beyond $123 million. Development impact fees are estimated to cover approximately 11% of this cost. The District has no other significant source of funding to support the construction of a new school.

---

[1]/The District has provided copies of the School Facility Needs Analysis and Justification Study (August, 2021) and the District Facility Master Plan (June, 2020) to the County, which document these figures. If you need additional copies or information, please let us know.

- Serious equity concerns are raised if the County assumes that the existing community should fund a new high school needed to serve new development, especially when their communities lack infrastructure improvements afforded to new development. Developers, with the encouragement of local land use agencies, commonly contribute additional funds for school construction in California or agree to place developments into community facility districts for school construction to ensure that future residents shoulder the cost of new schools. The community has already approved $102.5 million of school bonds to modernize and expand San Benito High School, and we do not believe there will be voter sentiment to pass more bonds to pay for a new high school to serve students from future new development. In addition, even if local voters are willing to support future bond measures, the District has reached its statutory limit of $102.5 million at this time.

Traffic and Safety Impacts

- Traffic circulation and congestion in the areas surrounding San Benito High School have reached dangerous and hazardous levels as the high school population outgrows the high school site in Hollister. Students and families drive from all areas of the County to attend school in Hollister, and road and vehicle infrastructure does not exist to handle the volume of traffic in the area.

The cumulative impact on the District over time from development plans in the region is *staggering*. Our mutual constituents should not be led to believe that schools are not at risk from new development or that the payment of school impact fees will fully fund the additional schools needed.

Mitigation Approaches and Options

With regard to past development reviews and approvals, the County has taken the position that mitigation of project impacts on school facility capacity is limited to the imposition of school impact fees on project developers. What the County may not realize is that since the failure of Proposition 13 (the last state school bond measures) in March, 2020, the law regarding school impact fees being full mitigation of development impacts under the California Environmental Quality Act has shifted. Upon the failure of Proposition 13, Government Code §65997 became immediately effective and replaced Government Code §65996. Government Code §65996 limited the options for mandatory mitigation of school facility impacts by counties and cities. Government Code §65997 provides additional, permissible options for cities and counties to mitigate environmental effects of projects on the adequacy of school facilities, including, without limitation, the ability to condition approval of a project on participation in a Mello-Roos community facilities district ("CFD") (See Gov. Code, §65997(a)(6).). The use of CFDs does not impose additional fees on developers; in fact, it can reduce their financial burden by allowing school fees and additional mitigation amounts to be paid from a tax on future homes for the development of school facilities to serve those homes.

Further, bonds issued by a CFD will not be subject to the limitation on the District's general obligation bonding capacity.

As the County moves through its analysis of the environmental impact of the Lee Project on the District, we are requesting that it (1) evaluate the CFD option as a mitigation measure to address the significant impact of the Lee Project on school facility capacity; and (2) impose other mitigation measures that are needed to address traffic congestion and circulation around the high school.

Recently, the District has worked with the City to include amendments to its General Plan which acknowledge the seriousness of the impact of development on school capacity and begin to create measures that support the development of school facilities as the region grows, and to address traffic safety measures. We would likewise value the opportunity to work with the County to ensure that appropriate and lawful mitigation measures and expectations of developers are put in place regarding the Lee Project and others like it.

Thank you for the opportunity to comment on the NOP for the Lee Project. This letter should not be construed as a complete statement of the impact of the Lee Project on San Benito High School District but rather an overview of our concerns and interests at this time. Please keep us informed as the development of the EIR progresses.

Very Truly Yours,

Shawn Tennenbaum, Ed.D.
Superintendent

CC: John Corrigan, SBHSD Board President
Board of Trustees

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
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West Sacramento,
California 95691
(916) 373-3710
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NAHC.ca.gov

February 22, 2022

Governor's Office of Planning & Research

Feb 25 2022

STATE CLEARING HOUSE

Arielle Godspeed
San Benito County
2301 Technology Parkway
Hollister, CA 95023

Re: 2022020429, Lee Subdivision Project, San Benito County

Dear Ms. Godspeed:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of <u>portions</u> of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project**.**
- **b.** Recommended mitigation measures**.**
- **c.** Significant effects**.** (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

> **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
>
> **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- **a.** Avoidance and preservation of the resources in place, including, but not limited to:
  - **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
  - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - **i.** Protecting the cultural character and integrity of the resource.
  - **ii.** Protecting the traditional use of the resource.
  - **iii.** Protecting the confidentiality of the resource.
- **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- **d.** Protecting the resource. (Pub. Resource Code §21084.3 (b)).
- **e.** Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
- **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

> **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
>
> **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
>
> **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

a. If part or all of the APE has been previously surveyed for cultural resources.
b. If any known cultural resources have already been recorded on or adjacent to the APE.
c. If the probability is low, moderate, or high that cultural resources are located in the APE.
d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

March 21, 2022

SBt/25/47.622
SCH#2022020429

Arielle Goodspeed
Senior Planner
San Benito County
Resource Management Agency
2301 Technology Parkway
Hollister, CA 95023

Dear Ms. Goodspeed:

COMMENTS FOR THE NOTICE OF PREPARATION (NOP) OF THE PLN200051 LEE SUBDIVISION PROJECT, SAN BENITO COUNTY, CA

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the PLN200051 Lee Subdivision Project which proposes 141 residential lots, a public park and open space, utilities infrastructure, internal public streets, and improvements to Old Ranch Road. Caltrans offers the following comments in response to the NOP:

1. Caltrans supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel and development. Projects that support smart growth principles which include improvements to pedestrian, bicycle, and transit infrastructure (or other key Transportation Demand Strategies) are supported by Caltrans and are consistent with our mission, vision, and goals.

2. As a result of Senate Bill (SB) 743, Caltrans replaced vehicle level of service (LOS) with vehicle miles traveled (VMT) as the primary metric for identifying transportation impacts from local development. Additionally, the Caltrans Transportation Impact Study Guide (TISG) replaces the Guide for the

Preparation of Traffic Impact Studies (Caltrans, 2002) and is for use with local land use projects. The focus now will be on how projects are expected to influence the overall amount of automobile use instead of traffic congestion as a significant impact.

3. Employing VMT as the metric of transportation impact Statewide will help to promote Green House Gas (GHG) emission reductions consistent with SB 375 and can be achieved through influencing on-the-ground development. Implementation of this change will rely, in part, on local land use decisions to reduce GHG emissions associated with the transportation sector, both at the project level, and in long-term plans (including general plans, climate action plans, specific plans, and transportation plans) and supporting Sustainable Community Strategies developed under SB 375. In addition to any site-specific access or safety concerns with the project, it is likely that the Caltrans correspondence will focus attention on meeting overall VMT reducing goals.

4. Due to COVID-19, Caltrans policy on collecting traffic data has changed until further notice. Traffic analysis conducted for all projects on the State Highway System (SHS) are now required to use traffic data collected before March 13, 2020 to avoid abnormal traffic patterns. Traffic analysis and data usage will need to meet Caltrans standards of sound engineering justification and source documentation of historical traffic data. Additional information can be found at https://dot.ca.gov/programs/traffic-operations.

Thank you for the opportunity to review and comment on the proposed project. If you have any questions, or need further clarification on items discussed above, please contact me at (805) 835-6543 or christopher.bjornstad@dot.ca.gov.

Sincerely,

Christopher Bjornstad

Chris Bjornstad
Associate Transportation Planner
District 5 Land Development Review

San Benito County March 6, 2022

Resource Management Agency

Attn: Arielle Goodspeed, Senior Planner

2301 Technology Parkway

Hollister, CA 95023

RE: Lee Proposed Subdivision Project 291 Old Ranch Road, Hollister CA

Senior Planner Goodspeed,

I am responding to the Notice of Preparation for the Proposed Lee Subdivision project to share my concerns. The Planning Department continues to create ongoing issues when allowing more development of the west side of Fairview Road. Developers use millions of gallons of water to control dust during construction that creates a shortage of water for agricultural use. I find it very difficult to watch the water trucks across the road dump water on the roads during construction of 3 large developments while my Blue Valve Water has been locked off due to the water shortage, and yet your office is considering another project in the immediate area.

The College Project on Fairview and Airline is still pending, and upon completion will create even more traffic on Fairview Road and Airline Highway without significant infrastructure to widen roads. The average speed on Fairview is becoming 70mph and with regular serious injury accidents what precautions are being taken. The newly added traffic signals have not slowed any traffic. When exiting from Old Ranch Road onto Fairview Road is a hazard with overgrown trees blocking the driver's vision from speeding traffic coming from Airline Highway onto Fairview Road. The continuous noise from nail guns all day long from the development across the road are bad enough.

Allowing this project to develop 141 housing lots would only impede on the solitude of the 5 family residences as well as other residents nearby. A projection of 2 vehicles per home x 141 homes would at a minimum have 282 vehicles traveling a single road into the highspeed traffic of Fairview Road. The water use on its own should postpone any application for new development.

What happened to developing the east side before the west side? The farming and livestock lands are being surrounded by housing developments who will eventually complain about the livestock.

I myself have show horses and agricultural acreage and do not wish to have a housing development on my fence line endangering my livestock and my peaceful living area.

Thank you for your consideration,

Mary J. Whitaker Anderson
130 Old Ranch Road

Hollister, CA 95023

Appendix B

Biological Resources Report

H. T. HARVEY & ASSOCIATES

Ecological Consultants

50 years of field notes, exploration, and excellence

Lee Property
Biological Resources Report

Project # 4181-02

Prepared for:

Mr. Bill Lee
291 Old Ranch Road
Hollister, CA 95023

Prepared by:

H. T. Harvey & Associates

September 10, 2020

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Section 1. Project Summary

This report describes the biological resources present in the area of a proposed housing development project on the Lee Property, as well as the potential biological impacts of the project and measures necessary to reduce these impacts to less-than-significant levels under the California Environmental Quality Act (CEQA). This assessment is based upon the project plans provided to H. T. Harvey & Associates by Ross Doyle of Ruggeri-Jensen-Azar on July 20, 2020.

1.1 Project Location and Description

The approximately 26.8-acre (ac) project site is located on the 39.4-ac Lee Property (Study Area) in unincorporated northern San Benito County just east of the City of Hollister (Figure 1). Most of the property (36.1 ac) is actively farmed with oat hay ("disked hayfield" on Figure 2). Additionally, there is a single-family residence, a large barn, and a paved section of Old Ranch Road (combined 3.2 ac) in the western portion of the Study Area ("developed" on Figure 2). The surrounding area is a mixture of active farmland and rural-residential development. Elevations in the Study Area range from approximately 460 to 540 feet (Google Earth 2020).

The proposed project consists of a residential development of 134 single-family detached dwelling units on lots of various sizes, transportation and utilities infrastructure, a storm water detention basin, and a storm water outfall structure into an intermittent swale on the western 22.2 ac of the Study Area.

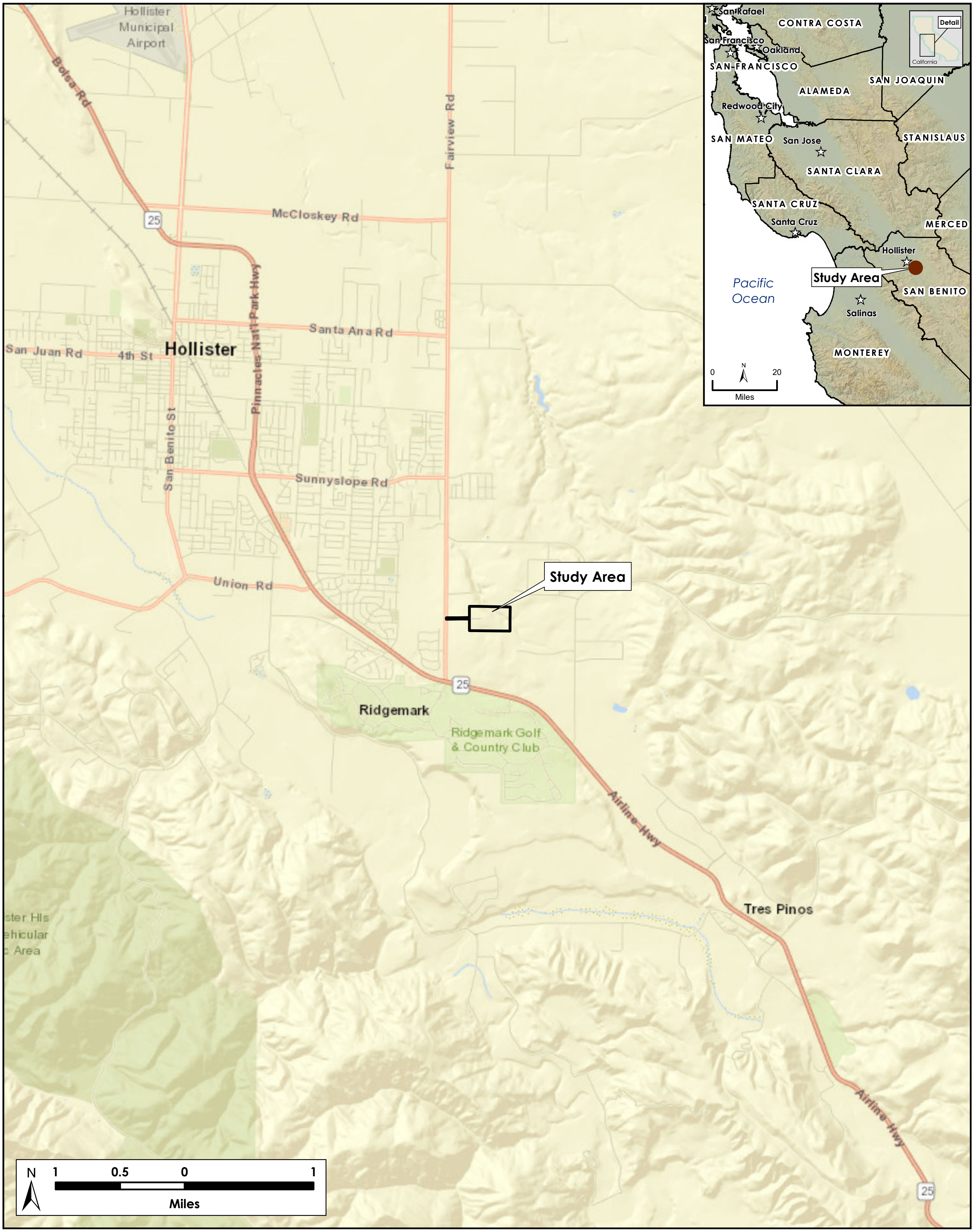

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Figure 1. Vicinity Map
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Figure 2. Habitat Map

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Section 2. Methods

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed project plans and the project description provided by Ross Doyle of Ruggeri-Jensen-Azar on July 20, 2020; aerial photos (Google Earth 2020); and the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB 2020) to assess the potential distribution of special-status plants and animals and sensitive habitats in the project vicinity[1]. In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the *Tres Pinos, California* U.S. Geological Survey (USGS) 7.5-minute quadrangle and the surrounding eight quadrangles (*Cherry Peak, Hollister, Mariposa Peak, Mt. Harlan, Paicines, Quien Sabe Valley, San Felipe,* and *Three Sisters*) (CNPS 2020). Quadrangle-level results are not maintained for CRPR 3 and 4 species, so we also conducted a search of the CNPS records for these species occurring in San Benito County (CNPS 2020).

During a preliminary review of biological resources in the Study Area, conducted on May 9, 2018, H. T. Harvey & Associates Senior wildlife ecologist Matthew Timmer, M.S. and plant and wetland ecologist David Gallagher, M.S., surveyed the Study Area. In addition, principal plant ecologist Kelly Hardwicke, Ph.D., evaluated the intermittent drainage swale on April 25, 2019, and a reconnaissance-level field survey of the Study Area, including the project site, was conducted by H. T. Harvey & Associates senior plant ecologist Mark Bibbo, M.S., and senior herpetologist Jeff Wilkinson, Ph.D., on February 21, 2020. The purpose of these surveys was to evaluate existing biological resources on the site and to provide a project-specific impact assessment for the development of the site as described above. Specifically, the survey was conducted to (1) assess existing biotic habitats and plant and animal communities on the project site, (2) assess the site for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional and sensitive habitats (such as waters of the U.S./state), although a formal wetland delineation was not conducted.

[1] For the purposes of this report, the project vicinity is defined as the area within a 5-mile radius of the project site.

Section 3. Regulatory Setting

Biological resources on the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal Regulations

3.1.1 Clean Water Act

Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (CWA). Waters of the U.S. include other waters, such as intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, territorial seas, and wetlands (33 CFR, Part 328). Wetlands are generally identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) using an approach that relies on identification of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology indicators.

The CWA functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, USACE jurisdiction extends to the OHW mark, which is defined in Title 33, Code of Federal Regulations, Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may not be subject to USACE jurisdiction under the recently adopted Navigable Waters Protection Rule (NWPR). Similarly, ephemeral streams with no connection to groundwater and any wetlands adjacent to such features may be disclaimed by the USACE under the NWPR. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 Code of Federal Regulations Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide." If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark or high tide line to the outer edges of the wetlands.

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

<u>Project Applicability</u>: An intermittent drainage (described in Section 4.1 below as an "Intermittent Swale") transects the Study Area in the northeast corner. This drainage feature is included in the USFWS National Wetland Inventory (NWI) maps as an unnamed, seasonally flooded, intermittent stream that is a tributary to Santa Ana Creek traversing the Study Area (USFWS 2020) and is shown on the *Tres Pinos, California* U.S.

Geological Survey (USGS) 7.5-minute quadrangle as a dashed blue line, indicating an intermittent stream. Therefore this feature is likely to be considered a "waters of the United States" by USACE, and any direct or indirect impact to this feature would require a permit from this agency under CWA Section 404.

3.1.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or *take*, which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." *Take* can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as *take* even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: No federally listed or candidate plant species occur on the project site or in adjacent areas that could be substantially impacted by proposed activities under the project. Individuals of the federally threatened California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) are known, and individuals of the federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*) have been historically known, from the vicinity of the project site. Due to regular disking, the upland habitat on the project site is of marginal quality for use by any of these species, though there is some potential for small numbers of California red-legged frogs and California tiger salamanders to disperse across the project site, and possibly to take refuge in the very few small mammal burrows present along the perimeter of the site.

3.1.3 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

In its June 14, 2018 memorandum, the USFWS clarified that the destruction of an active nest "while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents" is not prohibited by the MBTA. On February 3, 2020, the USFWS published a proposed rule to codify the scope of the MBTA as it applies to activities resulting in the injury or death of migratory birds (85 FR 5915-5926); the USFWS is currently considering comments on the proposed rule.

Project Applicability: All native bird species that occur on the project site are protected under the MBTA.

3.2 State Regulations

3.2.1 Porter-Cologne Water Quality Control Act

The 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 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 U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs claim jurisdiction over 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. 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 a 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. Under the 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.

Project Applicability: In the project area, waters of the state would include all potential waters of the U.S., namely the intermittent drainage swale in the northeast corner of the Study Area.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, 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 CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in *take* of individuals (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 California Fish and Game Code. The CDFW, however, has interpreted *take* to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No suitable habitat for any state-listed plant species occurs on the project site, and thus no state-listed plants are reasonably expected to occur on the project site. Individuals of the state listed threatened California tiger salamander are known, and individuals of the state listed threatened San Joaquin kit fox have been historically known, from the vicinity of the project site. Due to regular disking, the upland habitat on the project site is of marginal quality for use by either of these species, though there is some potential for small numbers of California tiger salamanders to disperse across the project site, and possibly to take refuge in the very few small mammal burrows present along the perimeter of the site.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the CNPS Inventory of Rare and Endangered Plants. The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.
- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts on plants that are listed by the CNPS on CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2020). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2020).

<u>Project Applicability</u>: All potential impacts on biological resources will be considered during CEQA review of the project by San Benito County. In this Biological Resources Report, we have evaluated the existing conditions, potential impacts, and mitigation measures that, in our opinion, are necessary to reduce impacts on biological resources to less-than-significant levels to facilitate the County's CEQA review. Project impacts are discussed in Section 5 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code 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 the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under Code 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."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered *take* by the CDFW.

Project Applicability: CDFW jurisdiction under Section 1602 of the California Fish and Game Code extends up to the ordinary high water mark of the intermittent drainage. There is no riparian vegetation associated with this drainage feature. Impacts on the swale would require a LSAA. Most native bird, mammal, and other wildlife species that occur on the project site area and in the immediate vicinity are protected by the California Fish and Game Code.

3.2.5 State Water Resources Control Board Storm Water Regulation

Construction Phase. Construction projects in California causing land disturbances that are equal to 1 ac or greater must comply with State requirements to control the discharge of storm water pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of Best Management Practices (BMPs) to protect water quality until the site is stabilized.

Standard permit conditions under the Construction General Permit requires that the applicant utilize various measures including: on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Additionally, the Construction General Permit does not extend coverage to projects if storm water discharge-related activities are likely to jeopardize the continued existence, or result in take of any federally-listed endangered or threatened species.

Post Construction Phase. In San Benito County, projects must also comply with the California RWQCB, California Coast Region General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (GP WDRs) (Water Board Order No. 2013-001-DWQ). This permit requires that all projects implement Best Management Practices and incorporate Low Impact Development practices into the design that prevents storm water runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

Project Applicability. The project will comply with the requirements of the NPDES permit; thus, construction phase activities would not result in detrimental water quality effects upon biological/regulated resources. Additionally, the project must comply with the GP WDRs for design of appropriate storm water treatment facilities and incorporate feasible Low Impact Development practices.

3.3 Local Regulations

3.3.1 San Benito County Oak Woodland and Tree Ordinances

San Benito County has two ordinances which are aimed at protecting trees. The Interim Woodland Management ordinance requires a permit for tree removal when 90-100% of the allowable amount is slated for removal within 10 years, or slopes are greater than 30%. Clearcutting and grading to remove woodlands is prohibited. Permit conditions may include a revegetation plan and a performance bond. The Open Space and Conservation Element of the General Plan has additional language promoting regeneration of oak woodland through habitat conservation planning, interagency coordination, and development review including clustering. Secondly, Section 25.29.210 of the County Code of Ordinances defines the San Benito County Permanent Tree Protection ordinance, which establishes regulations necessary to ensure that the county will continue to realize the benefits provided by trees in the residential areas of the county, and to preserve mature trees. The ordinance states that no person shall trench, grade or fill within the dripline of any tree or destroy, kill, remove, or seriously harm, any tree, as defined, in the designated "protected zone" of the unincorporated area of San Benito County, on any property, whether public or private, without a permit. The ordinance applies to designated trees under certain circumstances on all lands zoned Single Family Residential (R-l) or Residential Multiple District (RM) in the unincorporated areas of the county.

Project Applicability: The project parcel does not contain woodland as defined in the County's Interim Woodland Management ordinance, so this ordinance does not apply. In addition, the project parcel is zoned Rural, so the San Benito County Permanent Tree Protection does not apply.

Section 4. Existing Biological Conditions

Most of the Study Area (36.1 ac) is actively farmed with oat hay ("disked hayfield" on Figure 2). This farming activity includes multiple sessions of regular disking and mowing throughout the year and active removal of rodent burrows throughout the property. Additionally, there is a single-family residence, a large barn, and a paved section of Old Ranch Road (combined 3.2 ac) in the western portion of the Study Area ("developed" on Figure 2). The surrounding area is a mixture of active farmland and rural-residential development. Elevations in the Study Area range from approximately 460 to 540 feet (Google Earth 2020). The site topography is relatively flat with low rolling slopes in the western and southern portions of the Study Area, but with a well-defined valley, dropping approximately 60 to 70 feet in elevation in the northeastern part of the Study Area. This valley contains an intermittent swale, which is a continuation of an intermittent drainage that enters the site along the eastern edge of the Study Area, flows in a northwest direction, and exits the site into an adjacent property to the north.

There are two soil series with three soil types within the Study Area: San Benito clay loam, 9 to15 percent slopes, San Benito clay loam, 15 to 30 percent slopes, and Rincon silty clay loam, 2 to 9 percent slopes (NRCS 2020). Both soil series are non-saline to very slightly saline and well drained. Neither soil series are considered hydric by the NRCS in San Benito County (NRCS 2020).

4.1 General Habitat Conditions and Wildlife Use

The reconnaissance-level field survey identified three general biotic habitat/land use types: disked hayfield, comprising 36.1 ac of the Study Area; developed, comprising 3.2 ac in the western portion of the Study Area: and an intermittent swale in the northeastern part of the Study Area. These habitats are described in detail below and are shown in Figure 2. The proposed project impact area, overlaid on the existing habitats, is included as Figure 3.

4.1.1 Disked Hayfield

Photo 1: Disked hayfield on the site.

Vegetation. The majority of the Study Area is active farmland dominated by planted oats (*Avena* sp.), that is mowed and disked annually (Photo 1). Other ruderal species occur intermixed with the oats, including black mustard (*Brassica nigra*), wheat (*Triticum aestivum*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), and prickly lettuce (*Lactuca serriola*). The vegetation and species composition is relatively consistent throughout the site. In the center of the Study Area where the site slopes down into a

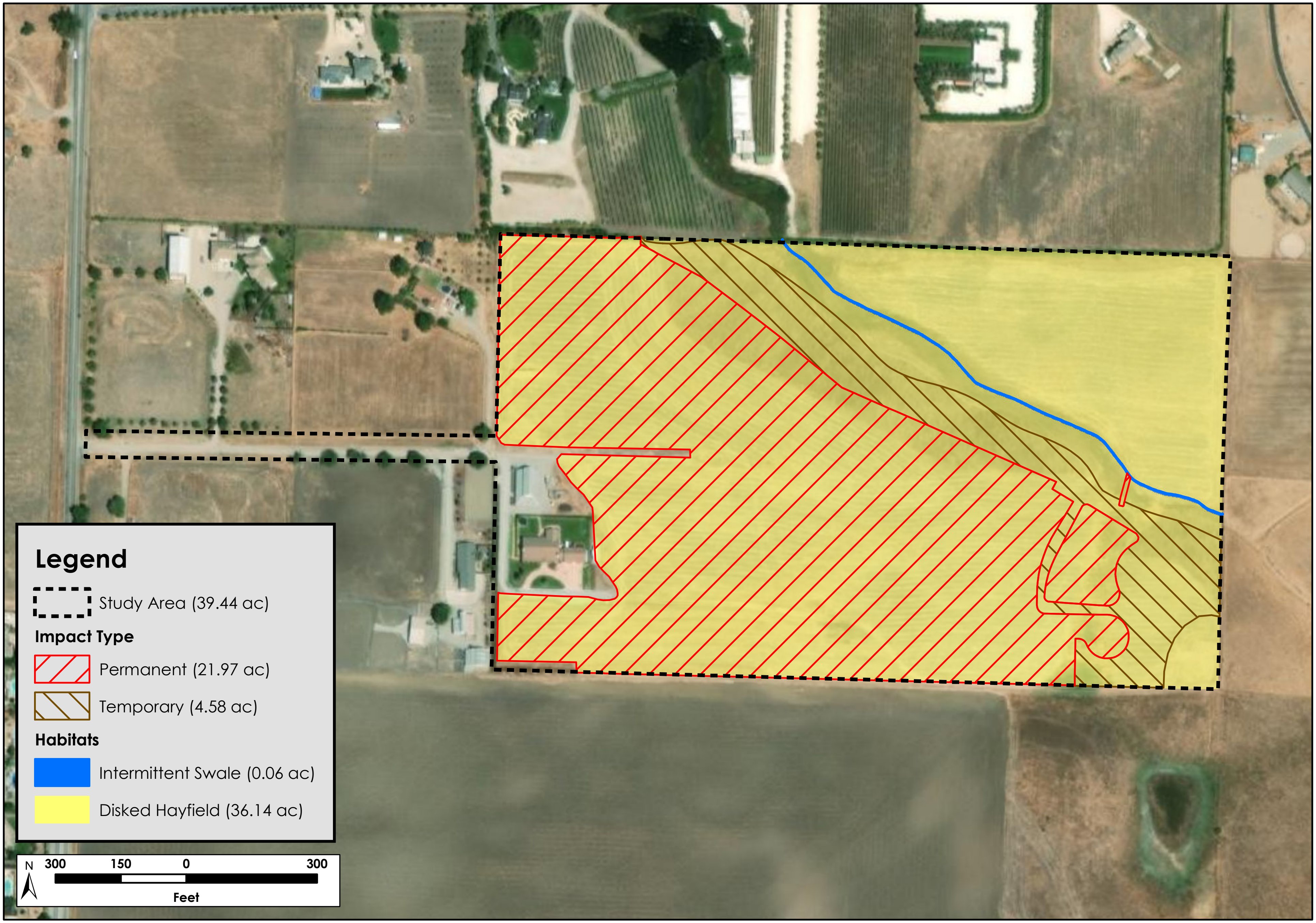

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Figure 3. Impact Map
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gradual valley is a steeper area that is disked but not planted with hay due to the steepness of the slope. However, the species composition in this location is largely the same as the surrounding hayfield. The intermittent swale runs through the northeast portion of the disked hayfield.

Wildlife. Due to the active disking, the disked hayfield in the Study Area provides relatively low-quality habitat for wildlife species. The wildlife most often associated with this habitat type are those that are tolerant of periodic human disturbances, including introduced species such as the European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), and house sparrow (*Passer domesticus*), as well as mammals such as the house mouse (*Mus musculus*). Several common native species also use this habitat, including the savannah sparrow (*Passerculus sandwichensis*), killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), red-winged blackbird (*Agelaius phoeniceus*), and Brewer's blackbird (*Euphagus cyanocephalus*), along with native raptors such as the American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*). Black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), California towhee (*Melozone crissalis*), and white-crowned (*Zonotrichia leucophrys*) and golden-crowned sparrows (*Zonotrichia atricapilla*) may forage along the edges of this habitat. With the exception of the killdeer, few, if any birds are likely to nest in the disked hayfield. Barn swallows (*Hirundo rustica*) likely forage aerially over the disked field.

A very small number of Botta's pocket gopher (*Thomomys bottae*) burrows were observed along the perimeter of the Study Area but not within the disked portion of the Study Area during the reconnaissance survey.

4.1.1 Intermittent Swale

Vegetation. A broad swale traverses the northeast corner of the Study Area in a low valley in that corner of the Study Area (Photo 2). During site visits by H. T. Harvey and Associates ecologists in May 2018, April 2019, and February 2020, the drainage feature lacked defined bed and bank morphology due to disking and agricultural activity, and indications of recent flow were not observed. In addition, there is no change in vegetation in the swale (i.e., the plant species composition in the bottom of the swale is identical to the surrounding disked hayfield as described above). The drainage, however, is included in the USFWS National Wetland Inventory (NWI) maps as an unnamed, seasonally flooded, intermittent stream that is a tributary to Santa Ana Creek traversing the Study Area (USFWS 2020). Intermittent streams have a seasonal connection to groundwater and generally contain surface water for extended periods (especially during the wet season) but lack surface water by the end of the wet season in most

Photo 2: Intermittent swale in the northwest corner of the Study Area. View from the north upstream to the south.

years. Although flows were not observed in 2018 – 2020, the 2020 field survey was conducted after a year of very low precipitation, and historical aerial imagery shows evidence of a defined channel traversing the property (NETR 2020, Google Earth 2020, UCSB 2020) prior to recent agricultural activities that have muted the topography in this area.

During the field survey in 2020, there was no evidence of a bed or banks defined by ordinary flows, and no evidence of incision. It is likely that flows in the swale are sheet flows following large storm events, which have not occurred in the winter of 2019-2020 (there was no evidence of flows following storm events in December 2019 and January 2020 which may have had large enough rainfall to generate flows). Upstream of the drainage, to the south of the Study Area, the drainage channel is more well-defined, with an approximately 2 foot wide channel bed and incision consistent with an ordinary high water mark, as well as saturated soils noted in this reach in April 2019 following a wetter spring. At the downstream end of the swale, and to the north of the property on the adjacent property, the swale joins with a man-made pond, which appears to be perennially inundated, and has a fringe of perennial emergent freshwater marsh vegetation around it.

No wetland vegetation was observed within the swale, and at soil pits dug at four locations in the middle of the swale and along its length, no indicators of hydric soils (such as dark chromas or redoximorphic concentrations) were observed. Finally, there were no indicators of long-term ponding or saturation observed along the length of the swale. Therefore, this feature is best characterized as a drainage/swale rather than a jurisdictional wetland.

Wildlife. As with the disked hayfield, the intermittent swale provides relatively low-quality wildlife habitat. Nevertheless, many of the same species that are expected to occur in the disked hayfield may also use the intermittent swale, including white-crowned and golden-crowned sparrows, house finches, European starlings, red-winged and Brewer's blackbirds, and both Say's and black phoebes. Red-tailed hawks and American kestrels are also expected to hunt small mammals and other prey that occurs in the intermittent swale, and barn swallows likely forage above it. Animals associated with wetland or aquatic habitats are completely absent from this feature due to the short duration of any surface flow and lack of pools.

4.1.2 Developed

Vegetation. The developed habitat type consists of the residence along the western edge of the property, the surrounding landscaping, and the paved driveway from Fairview Avenue to the residence. The vegetation in this location consists of typical ornamental trees, shrubs, and groundcovers used for landscaping, such as Italian cypress (*Cupressus sempervirens*), redwoods (*sequoia sempervirens*), oleander (*Nerium oleander*), English ivy (*Hedera helix*) and turf grass. Ruderal species (i.e., vegetation associated with regularly or recently disturbed areas), consisting of similar species occurring in the disked hayfield, and including species such as bindweed (*Convolvulus arvensis*), stinkwort (*Dittrichia gravelons*), and puncture vine (*Tribulus terrestris*) are present along the margins of the roads and at the interfaces of the fields and the residence. A line of six Callery pears (*Pyrus calleryana*) are planted as a hedgerow along the paved driveway from Fairview Avenue. These trees are approximately 25 feet tall with a diameter-at-breast height of approximately 14 to 16 inches.

Wildlife. As with the disked hayfield, the developed area provides relatively low-quality wildlife habitat. Nevertheless, many of the same species that are expected to occur elsewhere in the Study Area are also likely to use habitat in the developed area, including white-crowned and golden-crowned sparrows, house finches, European starlings, red-winged and Brewer's blackbirds, and both Say's and black phoebes. Some of these species, such as barn swallows, house finches, European starlings, and both black and Say's phoebe, may nest on or adjacent to buildings. Trees in the developed area provide suitable nesting habitat for Anna's hummingbirds (*Anna calypte*), house finches, starlings, and Brewer's blackbirds, among others. In addition, a focused survey of the exterior of the buildings and the trees in the developed area detected no large cavities that might provide suitable bat roosting habitat.

4.2 Special-Status Species

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species". For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3 above.

For purposes of this analysis, "special-status" plants are considered plant species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

4.2.1 Special-Status Plant Species

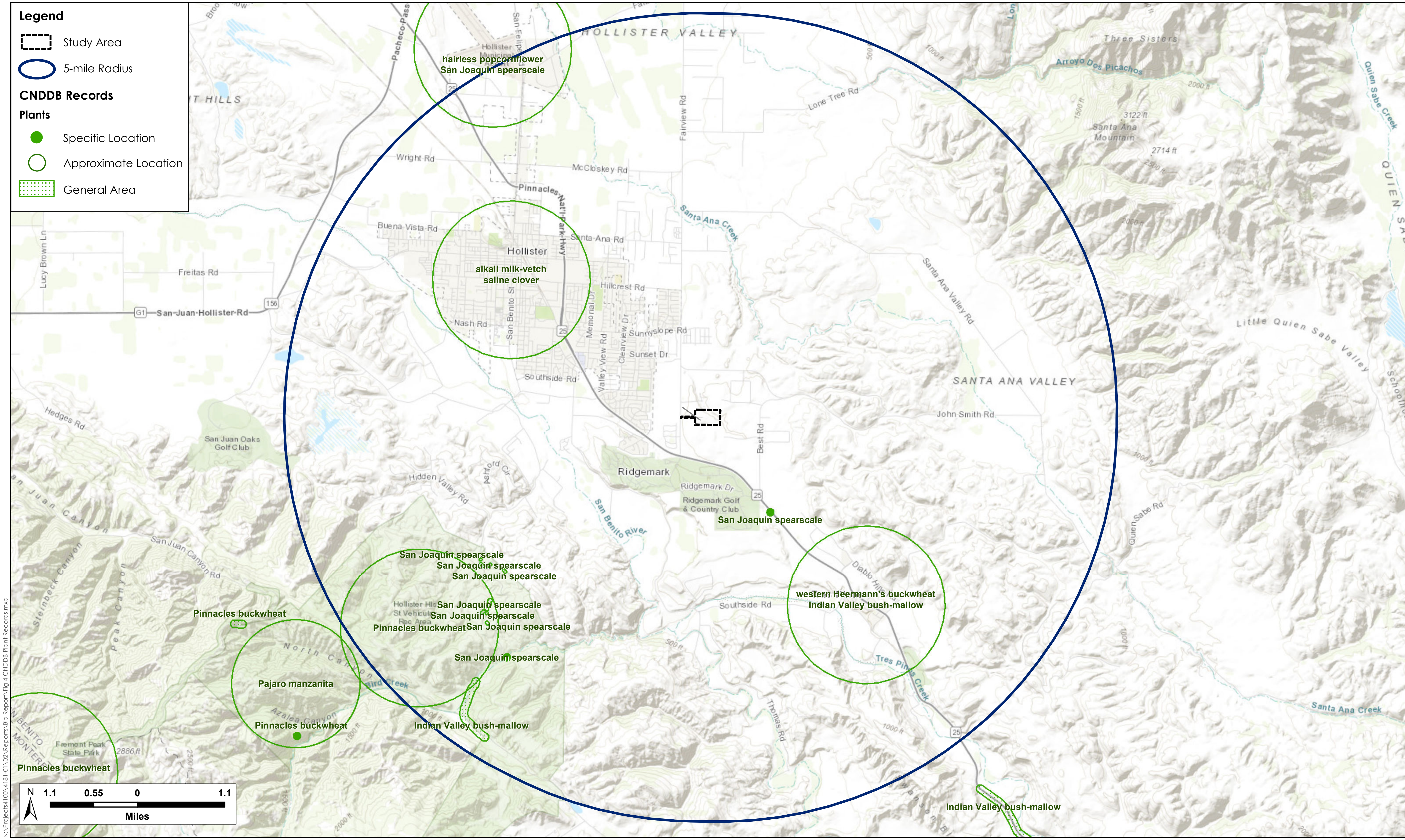
As described in the *Methods* section above, information concerning threatened, endangered, or other special-status species that could occur on the project site was collected from several sources and reviewed by H. T. Harvey & Associates biologists. The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the list of species potentially occurring on the site. Figures 4 and 5 are maps of the CNDDB's special-status plant and animal species records in the general vicinity of the project site. These generalized maps are valuable on a historical basis, as they show areas where special-status species occur or have occurred previously, but they do not necessarily represent current conditions or indicate where species are absent.

Special-Status Plants. A list of 67 special-status plant species thought to have some potential for occurrence within the property was compiled using the CNPS rare plant inventory (CNPS 2020) and CNDDB records (CNDDB 2020). Analysis of the documented habitat requirements and occurrence records of these plants, and our plant ecologist's knowledge of sensitive species considered, allowed us to reject 66 of the 67 species as not having a reasonable potential to occur within the Study Area for at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range in the Study Area; (4) the species is presumed extirpated; and/or (5) the site is too disturbed to be expected to support the species. As the Study Area is largely composed of continually manipulated agricultural land (i.e., agricultural field land cover), as well as areas with little habitat value (developed land cover), the property does not have the capacity to support most special-status plants. One rare plant species, San Joaquin spearscale (*Extriplex joaquiniana*, CNPS Rare Plant Rank 1B.2), occurs within close proximity to the Study Area, approximately 1.2 miles to the southeast (Figure 4). This species has been detected in actively disked and cultivated fields, indicating it can persist in the presence of intensive agricultural disturbance. However, the soils in the Study Area, which are from the Rincon and San Benito series, are neutral to only mildly alkaline. San Joaquin spearscale requires mesic, alkaline or even saline, and often heavy clay soils, so the species is not expected to be present in the Study Area due to unsuitable edaphic conditions on the site.

4.2.2 Special-Status Animal Species

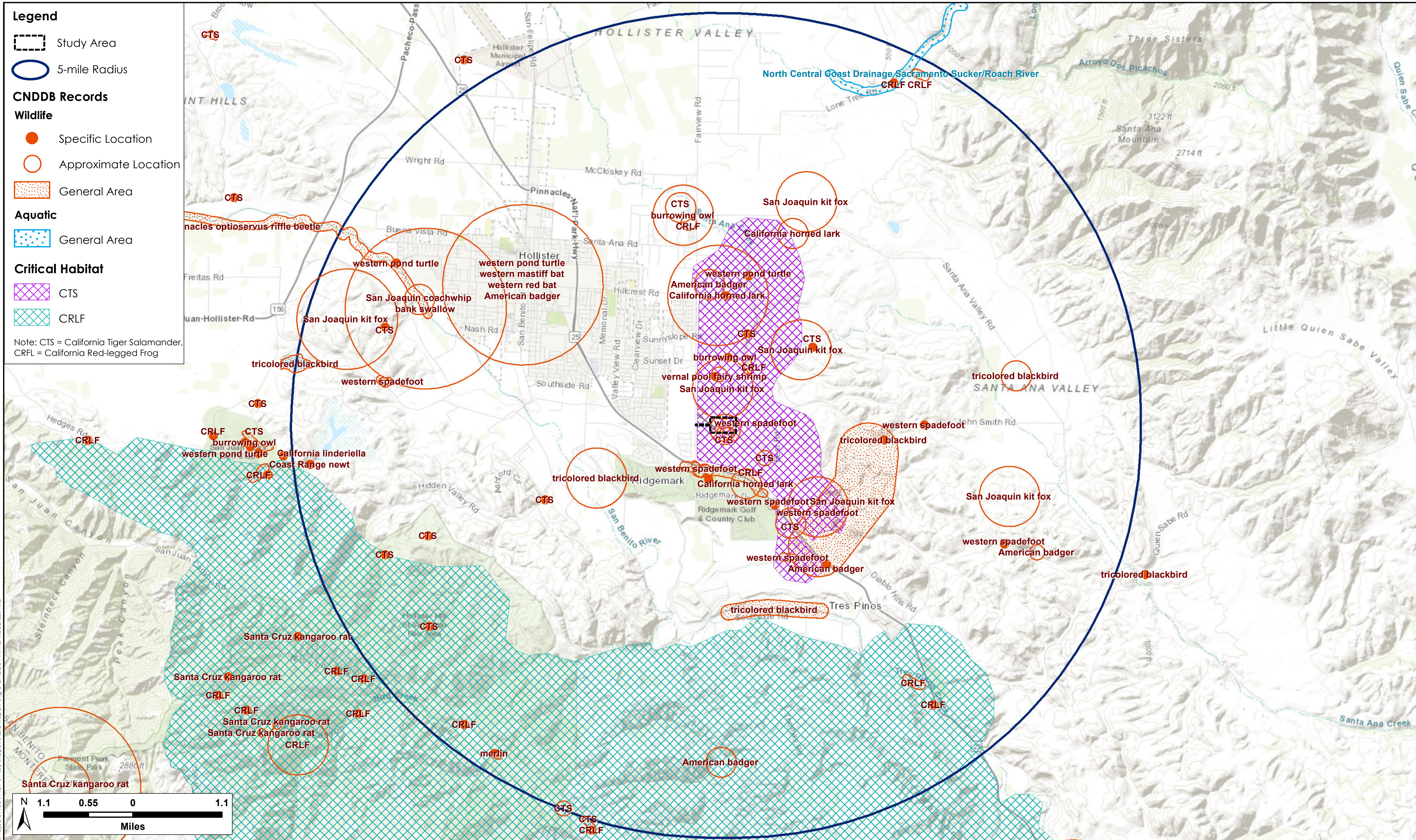
Special-Status Animals. Our background review, as described in the *Methods* section above, identified a number of special-status animal species as potentially occurring in the project vicinity. However, the majority of these species were determined to be absent from, or unlikely present in, the Study Area. Species considered for occurrence but considered absent or unlikely present, as well as the reasons for these determinations are presented in Table 1.

Eight special-status animal species with the potential to occur on or immediately adjacent to the Study Area and thus to be potentially impacted by project implementation are the California red-legged frog, California tiger salamander, San Joaquin kit fox, tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius*



H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 4. CNDDB-Mapped Records of Special-Status Plants
Lee Property Biological Resources Report (4181-02)
September 2020



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Ecological Consultants

Figure 5. CNDDB-Mapped Records of Special-Status Animals
Lee Property Biological Resources Report (4181-02)
September 2020

Table 1. Special-Status Animals Considered for Potential Occurrence

Name	Status[1]	General Habitat Description	Potential for Occurrence in the Study Area[2]
Federal or State Endangered, Threatened, or Candidate Species			
California red-legged frog (*Rana draytonii*)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	**Possible.** Habitat on-site is marginal for dispersal, and foraging and breeding habitat is absent from the site. Closest known occurrences are in ponds at Ridgemark Golf & Country Club 0.5 mile south, and semi-perennial ponds approximately 0.6 mile northeast, of site. Ostensibly suitable breeding habitat present at irrigation pond on Leal Vineyard property immediately adjacent to site. Quality of this habitat is dependent on the abundance of predatory fish and bullfrogs. May occasionally disperse onto site, especially during wet season.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands.	**Present.** Habitat on-site is marginal for dispersal and foraging, though small numbers of individuals may disperse across the site, and it is possible that some use the very few pocket gopher burrows that are present along the perimeter of the site (though absent from the site interior) as upland refugia. Potential breeding, dispersal, and refugial habitat exists adjacent to the site as well. The species was detected breeding in a seasonal pond onsite (though this pond is no longer present) and adjacent to the site in 2000. Other pools adjacent to site provide potential breeding habitat. The project site is located within designated critical habitat.
Tricolored blackbird (*Agelaius tricolor*)	ST	Nests in freshwater tule (*Schoenoplectus acutus*) and cattail (*Typha* spp.) marshes; currently breeds in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, and occasionally in early-successional riparian habitat.	**Possible (as Nonbreeder).** No suitable breeding habitat is present on site, although several locations within 5 miles of the site have hosted breeding colonies within the past five years. Most breeding colonies in the vicinity have been in fallow fields or planted grain fields with mustards, though the emergent vegetation around the adjacent pond at the Leal Vineyard could possibly support a small colony. This species may forage on the project site.
Foothill yellow-legged frog (*Rana boylii*)	ST	Streams, usually with relatively little riparian vegetation and a cobble substrate.	**Absent.** No known occurrence within 5 miles of site. No suitable habitat present; presumed absent.

Name	Status[1]	General Habitat Description	Potential for Occurrence in the Study Area[2]
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST	Flat or gently sloping grasslands on the margins of the San Joaquin Valley and adjacent valleys.	**Unlikely.** Species present in greater Hollister area in very low numbers, and most records are historical. Six known occurrences within 5 miles of site. Low probability of occurrence on-site due to disturbance of hayfields, though the species could occasionally disperse through the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Ephemeral freshwater and vernal pools in the Central Valley and the San Francisco Bay Area.	**Absent.** One known occurrence approximately 0.5 mile north of site. No suitable habitat present; presumed absent.
California Species of Special Concern			
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Unlikely.** Five known occurrences within 5 miles of site. Low probability of occurrence on-site due to disturbance of hayfields, and the species is not expected to den on the site, though it species could occasionally disperse through the site.
Coast horned lizard (*Phrynosoma coronatum frontale*)	CSSC	Sandy soils, usually in dry creek channels or coastal dunes.	**Absent.** No known occurrences within 5 miles of site. No suitable habitat present; presumed absent.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	**Unlikely.** No suitable roost sites present; could potentially forage on-site.
San Joaquin whipsnake (*Masticophis flagellum ruddocki*)	CSSC	In sparse grasslands and saltbush scrub communities with little or no trees, require presence of mammal burrows for refuge, temperature regulation, and possibly egg-laying.	**Unlikely.** One known occurrence within 5 miles of site. Disking on site has eliminated most of the small mammal burrows on-site. If the species occurs on the site at all, it could occasionally attempt to disperse across or forage on site, although no California ground squirrel (*Otospermophilus beecheyi*) burrows that might be used as refugia are present on the site itself.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	**Unlikely.** No suitable roost sites present; could potentially forage over the site.
Southwestern pond turtle (*Actinemys marmorata*)	CSSC	Permanent or nearly permanent water in a variety of habitats.	**Possible.** Three known occurrences within 5 miles of site. Ostensibly suitable aquatic habitat present at irrigation pond on Leal Vineyard property immediately adjacent to site. May occasionally disperse onto the site. Could potentially nest in uplands in the Study Area adjacent to the pond.

Name	Status[1]	General Habitat Description	Potential for Occurrence in the Study Area[2]
Western spadefoot (*Spea hammondii*)	CSSC	Grasslands and occasionally valley-foothill hardwood woodlands; vernal pools or similar ephemeral pools required for breeding.	**Present.** Habitat on-site is marginal for dispersal, and foraging, Potential breeding, dispersal, and aestivation habitat exists adjacent to the site. The species was detected breeding in seasonal pond onsite (though this pond is no longer present) and in a pond adjacent to the site in 2000.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Grasslands, scrub habitats, riparian areas, other open woodlands, ruderal habitats, and developed areas including golf courses and agricultural fields.	**Likely.** Although there is ostensibly suitable nesting habitat for this species in the Study Area, it is more likely that the species would only forage within the Study Area, and nest outside the Study Area. Within the Study Area, the species may forage along the edges of the disked hayfield, using the fence posts as foraging perches. Nevertheless, we cannot rule out the possibility that one pair of loggerhead shrikes may nest in the Study Area (e.g., in ornamental vegetation in the developed area).
Burrowing owl (*Athene cunicularia*)	CSSC	Flat or gently sloping open grassland or sparse shrubland ecosystems with ground squirrel burrows.	**Possible.** The Study Area does not contain suitable nesting or roosting habitat for the burrowing owl. However, it is possible (albeit unlikely) that this species may roost or even nest in burrows on properties adjacent to the Study Area and forage in fields in the Study Area.
California Fully Protected Species			
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	**Possible.** The Study Area does not contain suitable nesting habitat or high-quality foraging habitat for this species, although the possibility of an eagle occasionally foraging in the Study Area cannot be ruled out.
White-tailed kite (*Elanus leucurus*)	SP	Nests in trees and forages in extensive grasslands or marshes.	**Possible.** The Study Area does not contain suitable nesting habitat for this species, although the possibility of a white-tailed kite occasionally foraging in the Study Area cannot be ruled out.

[1] Special-status Species Code Designations:

FE = Federally listed Endangered
FT = Federally listed Threatened
SE = State listed Endangered
ST = State listed Threatened
CSSC = California Species of Special Concern

[2] Definitions regarding potential occurrence:

Present = Species or sign of its presence has been observed on the site, or there are records of the species' occurrence on the site.

Possible = Species was not observed during the reconnaissance surveys, but suitable habitat is present (habitat type, soils, and elevation), and the species is known to occur in the project vicinity.

Unlikely = On-site habitat is marginal, or the site is slightly outside the species' local distribution, and species was not seen during the reconnaissance surveys.

Absent = Suitable habitat is not present, or the project site is outside the species' local distribution.

ludovicianus), burrowing owl (*Athene cunicularia*), southwestern pond turtle [*Emys pallida* (= *Actinemys pallida*)], and western spadefoot (*Spea hammondi*). These eight species are discussed in detail below.

4.2.3 Federal and State Endangered and Threatened Species

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. California red-legged frogs inhabit perennial freshwater pools, streams, and ponds throughout the Central California Coast Range as well as isolated portions of the western slopes of the Sierra Nevada (Fellers 2005). Their preferred breeding habitat consists of deep perennial pools with emergent vegetation for attaching egg clusters (Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Thomson et al. 2016). Nonbreeding frogs may be found adjacent to streams and ponds in grasslands and woodlands, and may travel up to 2 miles from their breeding locations across a variety of upland habitats (Bulger et al. 2003, Fellers and Kleeman 2007).

The historical distribution of California red-legged frogs extended from the city of Redding in the Central Valley and Point Reyes National Seashore along the coast, south to Baja California, Mexico. The species' current distribution includes isolated locations in the Sierra Nevada and the San Francisco Bay area, and along the central coast (USFWS 2002). The California red-legged frog was listed as threatened in June 1996 (USFWS 1996) based largely on a significant range reduction and continued threats to surviving populations (Miller 1994). Revised critical habitat was designated in March 2010 (USFWS 2010). No critical habitat for this species overlaps the property, but critical habitat Unit SNB-3 (San Benito) is located approximately 2.4 miles south of the property (Figure 5; USFWS 2010).

The closest known occurrences of the California red-legged frog are in ponds 0.5 mile to the south at the Ridgemark Golf & Country Club (last recorded here in 2005) and semi-perennial pond(s) located approximately 0.6 mile to the northeast of the Study Area (Figure 5).

No suitable breeding habitat for California red-legged frogs is present within the Study Area. Similarly, no suitable upland refugia are present in the Study Area due to the absence of ground squirrel burrows from the Study Area (although ground squirrel burrows are present immediately outside the site). Ostensibly suitable breeding habitat for the California red-legged frog is present at the irrigation pond on the Leal Vineyard property immediately north of the Study Area. The quality of this habitat for breeding red-legged frogs is dependent on the abundance of predatory fish and bullfrogs (*Lithobates catesbeianus*) and amount of disturbance (addition of chemicals and/or mechanical operations for irrigation) in the pond. The irrigation pond on the Leal Vineyard property was searched with binoculars for individuals of California red-legged frogs during the reconnaissance-level field survey of the Study Area on February 21, 2020 and none were observed. However, due to their cryptic nature and nocturnal activity it is difficult to detect individuals of the California red-legged frog using this method, and a more intensive survey effort would be required to determine their presence or absence (USFWS 2005b). Given the number of ponds in the vicinity of the Study Area, adult frogs could disperse across the agricultural field in the Study Area as they move to and from breeding sites, and post-metamorphic juveniles could disperse to or across the Study Area as they move from natal ponds seeking upland refugial habitat. However, the regular manipulation of the agricultural fields in the Study Area (i.e., disking, planting, fertilizing) creates a general lack of cover and refugial habitat, and these fields are therefore considered low-quality dispersal habitat for this species. Therefore, it is possible for California red-legged frogs to occur in the Study Area, but most likely only occasionally and in small numbers as dispersants.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened. The California tiger salamander was federally listed as threatened in August 2004 (USFWS 2004), and critical habitat was designated in August 2005 (USFWS 2005a). The property is located within Unit 15a (Ana Creek Unit) of designated critical habitat for the California tiger salamander (Figure 5). The range of the California tiger salamander is restricted to the Central Valley and the South Coast Range of California from Butte County south to Santa Barbara County. Tiger salamanders have disappeared from a significant portion of their range due to habitat loss from agriculture and urbanization and the introduction of non-native aquatic predators.

The species' preferred breeding habitat consists of temporary (minimum of 3 to 4 months), ponded environments (e.g., vernal pools, ephemeral pools, or human-made ponds) surrounded by uplands that support small mammal burrows. They will also utilize permanent ponds if aquatic predators, such as fish, are not present. Such ponds provide breeding and larval habitat, while burrows of small mammals such as California ground squirrels and valley pocket gophers (*Thomomys bottae*) in upland habitats provide refugia for juvenile and adult salamanders during the dry season. Salamanders typically disperse from their breeding ponds into the surrounding upland habitat and between breeding ponds out to at least 1.3 miles (Trenham et al. 2001, Trenham and Shaffer 2005, Orloff 2011).

The California tiger salamander was recorded breeding in a former pond in the Study Area (which is no longer present) and a pond on the adjacent property approximately 250 feet to the south in 1997 and 2000 (CNDDB 2020 occurrence #412; Figure 5). Breeding habitat was still present in the Study Area as recently as 2006 (LOA 2016), though it appears that disking for agriculture has leveled out that area, and it no longer ponds.

No suitable breeding habitat for California tiger salamanders is currently present in the Study Area, and in its current state, upland refugia in the form of pocket gopher burrows are very limited because of regular disking and active removal of burrows. However, analysis of aerial photos shows suitable breeding habitat (i.e., seasonal wetlands) is still present at the aforementioned seasonal pond to the south of the Study Area and approximately 0.2 mile to the east of the Study Area during wet years (i.e., 2017). It is also possible that the perennial pond on the Leal Vineyard property immediately to the north of the Study Area could be used by breeding California tiger salamanders, although the quality of this habitat for breeding California tiger salamanders is dependent on the abundance of predatory fish and bullfrogs and amount of disturbance (addition of chemicals and/or mechanical operations for irrigation) in the pond. In addition, other seasonal or perennial ponds within dispersal distance (i.e., 1.3 miles) of the Study Area may provide suitable breeding habitat for the California tiger salamander. Therefore, we cannot discount the possibility that adult salamanders could disperse across the Study Area as they move to and from nearby breeding ponds, and post-metamorphic juveniles could disperse to or across the Study Area as they move away from natal ponds seeking upland refugial habitat. However, due to the manipulation of the agricultural fields in the Study Area (i.e., disking, planting, fertilizing), which creates a general lack of cover and refugial habitat, these fields are considered low-quality dispersal habitat for this species. Therefore, we do not expect California tiger salamanders to occur in large numbers in the Study Area because of the agricultural practices, current lack of breeding habitat, and paucity of upland refugial habitat in the Study Area. If individuals use the upland refugia in the Study Area, they would be limited to the very few small mammal burrows at the periphery of the Study Area. The USFWS has mapped a critical habitat unit for the California tiger salamander in a region that includes the Study Area (see Figure 5).

San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing Status: Threatened. The San Joaquin kit fox was listed as endangered under FESA in 1967 (USFWS 1967) and was listed as threatened under CESA in 1971. San Joaquin kit foxes were infrequently sighted in San Benito County and southern Santa Clara County in the early 1970s. Morrell (1975) reported four sightings prior to 1972, and seven sightings between 1972 and 1975 in this region. These reports include nine sightings in San Benito County near Hollister and two sightings in Santa Clara County between Pacheco Pass and San Felipe Lake. The CNDDB (2020) reports historical (i.e., prior to 1975) occurrences of San Joaquin kit foxes from approximately 0.3 mile to the north, 1.2 miles to the northeast, and 1.5 miles to the southeast (Figure 2) of the property. No signs of kit foxes (such as suitable dens) were observed during our May 2018, nor during the February 21, 2020 site visit. Moreover, the species' preferred habitat, low-lying grasslands with minimal topography, is not present in the Study Area. In addition, extensive surveys of the Hollister area over the past 35 years have yielded only a very few detections (H. T. Harvey & Associates 1997), and it is unlikely that kit foxes remain in the Hollister area in any numbers; thus, we consider the likelihood of kit foxes occurring in the Study Area to be extremely low. However, because kit foxes occurred in the vicinity historically and individuals have been detected both to the northeast and southeast of the Study Area, we cannot rule out the possibility of individual kit foxes occurring in the Study Area. If a kit fox were to occur, it would likely be dispersing through the Study Area and is not expected to take up residence (e.g., den) or linger.

Tricolored Blackbird (*Agelaius tricolor*). Federal Listing Status: None; State Listing Status: Threatened. The tricolored blackbird primarily occurs within California, with more than 99% of the species' population occurring in California's Central Valley and the surrounding foothills. The tricolored blackbird was listed as threatened under CESA on April 19, 2018 and is protected under both the MBTA and California Fish and Game Code. Historically, populations of this colonial blackbird occurred along the California coast and inland in central and southern California. The primary causes of the decline of tricolored blackbird populations are the (1) loss and fragmentation of habitat through conversion from rangeland and grain crops to other agricultural crops and urban development and (2) annual losses of thousands of nests and nesting habitat through agricultural harvest activities (Beedy et al. 2014, Center for Biological Diversity 2015). The conversion of grasslands and grain crops to urban or other agricultural uses eliminates nesting habitat and insect food supplies (DeHaven 2000, Meese 2013). Other potential threats to the tricolored blackbird include pesticides (Hosea 1986) and environmental contamination (Beedy and Hayworth 1992).

Tricolored blackbirds form breeding colonies of up to thousands of birds. Breeding at these colonies occurs from mid-March through mid-July, with departure typically occurring from late June through August (Hamilton 2004). Historically, breeding tricolored blackbirds primarily inhabited freshwater tule (*Schoenoplectus acutus*) and cattail (*Typha* spp.) marshes, with small numbers of breeding colonies occurring in willows (*Salix* spp.), California blackberries (*Rubus ursinus*), and other dense forbs (Neff 1937). In the first half of the 20th century, much of this freshwater marsh habitat was drained and converted to urban and agricultural uses. By the 1970s, only a little more than half of breeding colonies occurred in freshwater marshes (Beedy et al. 2014). Tricolored blackbirds now utilize a diverse assortment of marsh, upland, and agricultural areas. Colonies occur in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, and occasionally in early-successional riparian habitat. Thus, many thousands of tricolored blackbird nests may be lost during agricultural activities.

In the vicinity of the Study Area, tricolored blackbirds have most often been recorded nesting in emergent vegetation (e.g., cattails [*Typha* sp.]) within and around ponds, large patches of thistle and Himalayan blackberry (*Rubus armeniacus*), and fields of mixed mustard (*Brassica* sp.) and grain crops. The nearest recorded occurrences of recent nesting colonies of tricolored blackbirds are from John Smith Road approximately 1.7 miles to the east of the Study Area, where they nested as recently as 2020, and Santa Ana Valley Road approximately 3.4 miles east-northeast of the Study Area, where the largest tricolored blackbird colony in the state in 2015 was recorded (CNDDB 2020) (Figure 2).

Tricolored blackbirds forage opportunistically on a variety of insects, grains, and invertebrates. Insects taken include beetles, weevils, grasshoppers, caterpillars, and flies (Crase and DeHaven 1977, Skorupa et al. 1980). A variety of wild and crop grains are also consumed (Beedy et al. 2014). During the breeding season, tricolored blackbirds typically forage within 0.93 mile from their nest, but may venture up to 3.73 miles to find food, and exceptionally up to 8 miles one way (Crase and DeHaven 1977, Hamilton 2004, Beedy et al. 2018). Because of their colonial breeding habitats, foraging habitats near colonies is critical to successful breeding. This species will forage in almost any open habitat that contains concentrated food sources, including grasslands, irrigated pasture, grain fields, shallow wetlands, and planted fields (e.g., alfalfa and sunflowers), stored grains, and the air above wetland colonies when aquatic insects are hatching.

No tricolored blackbirds were observed in the vicinity of the Study Area during our May 9, 2018 site visit, nor during the February 21, 2020, reconnaissance survey. Moreover, no suitable nesting habitat for tricolored blackbirds is currently present in the Study Area; in other words, none of the three habitats identified during our reconnaissance survey – disked hayfield, intermittent swale, or the developed portion of the site – contains habitat suitable for nesting tricolored blackbirds. Although some of the vegetation often used by nesting tricolored blackbirds, such as mustard, are present in the Study Area, the density and structural complexity required by tricolored blackbirds for nesting is not present in the Study Area, and the vegetation is too short. However, large patches of cattails at the pond on the Leal Vineyard property north of the Study Area provide ostensibly suitable nesting habitat for tricolored blackbirds. Individuals may forage in the Study Area.

4.2.4 California Species of Special Concern

Southwestern Pond Turtle [*Emys pallida* (= *Actinemys pallida*)]. Federal Listing Status: None; State Listing Status: Species of Special Concern. The southwestern pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California and northern Baja, Mexico. Adult southwestern pond turtles occur in a variety of aquatic habitats, including streams and ponds. Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component, and southwestern pond turtles do not occur commonly along high-gradient streams. Breeding occurs in late spring or early summer (typically May-June). Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas. Breeding habitat is typically found within 600 feet of aquatic habitat, but if no suitable breeding habitat can be found close by, adults may travel overland considerable distances to breed (Thomson et al. 2016). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey.

In San Benito County, all perennial creeks, many intermittent creeks, and most ponds that are not completely isolated by development have some potential to support the southwestern pond turtle. However, the cumulative stressors of urbanization, including release of non-native turtles, predation and harassment by pets and non-native mammals, capture by humans, degradation of water quality, loss of upland nesting habitat because of development, and the construction of barriers between creeks and nesting areas have reduced southwestern pond turtle populations, and few areas exist where the species can be considered common. In particular, the scarcity of suitable expanses of nesting habitat makes the maintenance of viable populations unlikely along reaches of some creeks in the County.

Southwestern pond turtles have been observed in the vicinity of the Study Area (Figure 5), including a recorded observation from the Dry Creek Reservoir tributary to Santa Ana Creek, approximately 1.75 miles to the north of the Study Area (CNDDB 2020). The perennial pond on the Leal Vineyard property immediately to the north of the Study Area provides suitable aquatic habitat for this species. Thus, it is possible that southwestern pond turtles could be present in this pond and disperse through the Study Area, and individuals could potentially nest in uplands in the Study Area adjacent to the pond. However, because the Study Area is currently under regular agricultural cultivation, suitable nesting habitat in the Study Area is limited to the edges of the Study Area that are not disked. Also, during the reconnaissance-level field survey of the Study Area on February 21, 2020, the perennial pond on the Leal Vineyard property was searched for southwestern pond turtles with binoculars from the Study Area but none were observed. It is possible that an individual may have been present but not observed; however, if multiple individuals were present they should have been observable. Therefore, it is likely that the southwestern pond turtle is absent from the perennial pond on the Leal Vineyard property, and if it is present, then it occurs in very low numbers, with limited potential to nest on the project site.

Western Spadefoot (*Spea hammondi*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western spadefoot is a toad that inhabits grassland habitats of central California and the southern California coast. It requires temporary pools of water, lacking predators such as fish, bullfrogs, or crayfish, for breeding but has also been observed breeding in more permanent ponds if they also lack these predators (Thomson et al. 2016). Breeding usually occurs in late winter. With the exception of the breeding season and foraging excursions during rain events, western spadefoots spend most of their life aestivating in burrows. Burrows are typically self-excavated using the keratinous "spades" of the spadefoot's hind feet; however, burrows of small mammals are sometimes utilized.

Western spadefoots were historically documented breeding in a seasonal pond in the Study Area and a pond just south of the Study Area (occurrence #194 in CNDDB 2020, LOA 2016). However, it appears that disking for agriculture has leveled out the area in which the on-site pond was present, and it no longer ponds. This species has also been observed in other areas in the vicinity of the Study Area, including a detention pond located at the Ridgemark Golf & Country Club, approximately 0.5 mile south of the Study Area (Figure 5; CNDDB 2020). In addition, other seasonal ponds in the vicinity of the Study Area may provide suitable aquatic breeding habitat for this species. Thus, it is possible that western spadefoots could disperse into the Study Area. However, due to the absence of suitable breeding habitat in the Study Area itself, this species is expected to occur only in low numbers. Also, due to the manipulation of the agricultural field sin the Study Area (i.e., disking, planting, fertilizing), which may create a general lack of refugial habitat, these fields are considered low-quality upland habitat, and suitable aestivation is limited to the periphery of the Study Area where disking does not occur.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The burrowing owl is a California species of special concern and is protected under both the MBTA and the California Fish and Game Code. The burrowing owl is a small, terrestrial owl that resides in flat or gently sloping open grassland or sparse shrubland ecosystems. Preferred habitats are annual and perennial grasslands. Burrowing owls are found in close association with California ground squirrels, which provide nesting and refuge burrows, and maintain areas of short vegetation height, which provide foraging habitat and allow for visual detection of avian predators.

The CNDDB reports occurrences of burrowing owls from two locations in the vicinity of the Study Area. These recorded occurrences are located approximately 0.75 mile and 2.5 miles to the north of the Study Area (Figure 5; CNDDB 2020). Similarly, there are several eBird records of burrowing owls located along John Smith Road, including at least one photographed record of an active nest with young from August 2018, approximately 0.75 mile north-northeast of the Study Area (Cornell Lab of Ornithology 2020). However, no burrowing owls or sign of burrowing owls were observed during our May 9, 2018 site visit nor during the February 21, 2020 reconnaissance survey, and suitable habitat is absent from most of the Study Area because of the absence of burrows throughout most of the Study Area. No California ground squirrel burrows or other burrows suitable for use by nesting or roosting burrowing owls were observed in the Study Area itself (even along the perimeter where a few gopher burrows were noted) during the reconnaissance survey. However, suitable nesting habitat (i.e., ground squirrel burrows) and foraging habitat is present within ruderal grassland habitats immediately to the south and east of the Study Area. We cannot rule out the possibility of the occasional burrowing owl pair nesting or roosting in burrows in properties adjacent to the Study Area and foraging within fields on the site.

Loggerhead Shrike (*Lanius ludovicianus*). Federal status: None; State status: Species of Special Concern (Nesting). The loggerhead shrike is distributed throughout much of California, except in higher-elevation and heavily forested areas including the Coast Ranges, the Sierra Nevada, the southern Cascades, the Klamath and Siskiyou ranges, and the highest parts of the Transverse Ranges (Humple 2008). While the species range in California has remained stable over time, populations have declined steadily (Cade and Woods 1997). Loggerhead shrikes establish breeding territories in open habitats with relatively short vegetation that allows for visibility of prey; they can be found in grasslands, scrub habitats, riparian areas, other open woodlands, ruderal habitats, and developed areas including golf courses and agricultural fields (Yosef 1996). They require the presence of structures for impaling their prey; these most often take the form of thorny or sharp-stemmed shrubs, or barbed wire (Humple 2008). Ideal breeding habitat for loggerhead shrikes comprises short grass habitat with many perches, shrubs, or trees for nesting, and sharp branches or barbed wire fences for impaling prey. Shrikes nest earlier than most other passerines, especially in the west where populations are sedentary. The breeding season may begin as early as late February, and lasts through July (Yosef 1996). Nests are typically established in shrubs and low trees including sagebrush, willow, and mesquite, though brush piles may also be used when shrubs are not available. Loss and degradation of breeding habitat, as well as possible negative impacts of pesticides, are considered the major contributors to the population declines exhibited by this species (Cade and Woods 1997).

This species nests in open habitats including open grassland, ruderal, or agricultural habitat, with scattered brush and trees that provide perches and nesting sites (SAS 2001, Bousman 2007). In San Benito County, the loggerhead shrike is still a regular breeder in suitable habitat, and there are numerous recent records of this species occurring within 5 miles of the Study Area during the breeding season. The closest record is approximately 700 feet north of the intersection of the Study Area with Fairview Road; most records are from along John Smith Road and from along Best Road, located approximately 0.54 mile and 0.47 mile from the Study Area, respectively (Cornell Lab of Ornithology 2020). Although there is ostensibly suitable nesting habitat for this species in ornamental trees in the developed portion of the Study Area, and we cannot rule out the possibility that one pair of loggerhead shrikes will nest in the Study Area, it is more likely that the species would only forage within the Study Area, and nest outside the Study Area. Within the Study Area, the species may forage along the edges of the disked hayfield, using the fence posts as foraging perches.

4.3 Sensitive Natural Communities, Vegetation Alliances, and Habitats in the Project Area

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2020). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable.

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2020). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2020).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

4.3.1 Sensitive Vegetation Alliances, CDFW Sensitive Habitats, CDFW Riparian Habitat

The project site does not contain any sensitive vegetation alliances. Due to the lack of incision or defined banks within the swale on the farmed site, CDFW jurisdictional riparian habitat would be limited to the mapped extent of the drainage on Figure 2.

4.3.2 Waters of the U.S./State

The intermittent swale in the northeast corner of the Study Area would likely be considered waters of the U.S. under the CWA and waters of the State under the Porter-Cologne Water Quality Control Act. No other jurisdictional waters of the U.S. or State are present on the project site.

Section 5. Biological Impacts and Mitigation Measures

5.1 Overview

The CEQA and the State CEQA Guidelines provide guidance in evaluating impacts of projects on biological resources and determining which impacts will be significant. The Act defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under State CEQA Guidelines section 15065, a project's effects on biotic resources are deemed significant where the project would:

A. "substantially reduce the habitat of a fish or wildlife species"

B. "cause a fish or wildlife population to drop below self-sustaining levels"

C. "threaten to eliminate a plant or animal community"

D. "reduce the number or restrict the range of a rare or endangered plant or animal"

In addition to the section 15065 criteria that trigger mandatory findings of significance, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would**:**

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 U.S. Fish and Wildlife Service"

C. "have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act"

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

F. "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

5.2 Impacts on Special-Status Species: 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 (Less than Significant with Mitigation)

5.2.1 Impacts on the California Tiger Salamander and Western Spadefoot (Less than Significant with Mitigation)

Because both the California tiger salamander and western spadefoot are known to have bred in a former pond on the southeastern portion of the Study Area and in a pond on the adjacent property south of the southeastern border of the Study Area and have similar habitat requirements, they are discussed together. Though the former pond in the Study Area is no longer present, the pond on the adjacent property south of the southeastern border of the Study Area is still present, and thus both California tiger salamanders and western spadefoots may breed in this pond and disperse into the Study Area from this breeding pond. Also, there is a possibility that both species breed in the perennial pond on the Leal Vineyard property immediately to the north of the Study Area. Therefore, under current conditions, the Study Area provides potential dispersal habitat for California tiger salamanders and western spadefoots. However, because the majority of the Study Area is under active agriculture with removal of rodent burrows, most of the site lacks the small mammal burrows that would provide refugia for these species. A few burrows are, however, present along the periphery of the Study Area, and can provide suitable refugia for California tiger salamanders and western spadefoots.

Because the Study Area provides upland dispersal habitat, and California tiger salamanders and western spadefoots could disperse through the project site, construction activities associated with the project could result in the direct loss and indirect disturbance of California tiger salamanders and western spadefoots and their habitats. The project could impact individual tiger salamanders and western spadefoots as a result of:

- direct mortality during construction as a result of trampling by construction personnel or equipment;
- increased mortality due to roadkill caused by the construction and vehicular use in and around the vicinity of the project;
- direct mortality from the collapse of underground burrows, resulting from soil compaction; and
- direct mortality or loss of suitable habitat resulting from the loss of dispersal habitat and refugia.

The project could result in permanent impacts to 21.97 ac of the disked hayfield habitat that may serve as dispersal or limited upland refugial habitat for both species, as this habitat would be permanently lost due to the construction of pavement, homes, and other hardscape (Figure 3). The constructed pavement, homes, and other hardscape would also impede dispersal between potential and known breeding ponds for these species (e.g., the perennial pond on the Leal Vineyard property immediately to the north of the Study Area and the pond on the adjacent property south of the southeastern border of the Study Area or ponds further south associated with the Ridgemark Golf & Country Club). All of this permanent impact acreage is within designated California tiger salamander critical habitat.

Approximately 4.58 ac of potential California tiger salamander and western spadefoot habitat will be temporarily impacted by grading (cut/fill) activities as part of the project (Figure 3). These areas are expected to provide habitat of similar quality to existing conditions shortly after the completion of construction. All of this temporary impact acreage is within designated California tiger salamander critical habitat.

Potential California tiger salamander and/or western spadefoot breeding habitat in the perennial pond on the Leal Vineyard property may be indirectly impacted by the project's construction activities through increased runoff from the construction activity into the swale that enters the pond. The breeding pond on the adjacent property south of the southeastern border of the Study Area is not expected to receive runoff or have its hydrology affected by the project, as it is upslope from the project.

Because of the regional rarity of these species, project-related impacts on individual California tiger salamanders and western spadefoots would be considered significant under CEQA. In addition, due to the regional and range-wide rarity of the California tiger salamander, the loss of potential upland dispersal and refugial habitat for this species would be significant and would necessitate compensatory mitigation. In our opinion, the loss of western spadefoot habitat is not a significant impact due to the much more widespread nature of this species, compared to the California tiger salamander (the loss of habitat from this project would represent a much smaller proportion of range-wide habitat available to the spadefoot). Therefore, no compensatory mitigation for impacts to western spadefoot habitat is necessary, in our opinion.

Implementation of Mitigation Measures 1A and 1B will reduce impacts on these species to less-than-significant levels. If mitigation measures required by the USFWS and/or CDFW as conditions of incidental take authorization for the California tiger salamander differ from those below, the USFWS/CDFW-required measures would take precedence over those below.

Mitigation Measure 1A. Impact Avoidance and Minimization Measures. The following avoidance and minimization measures (AMMs) will be implemented for the California tiger salamander, western spadefoot, California red-legged frog, and southwestern pond turtle.

- **AMM 1.** Prior to any ground disturbing activities, the applicant will submit to the USFWS and CDFW for review and approval the qualifications of proposed biologists/biological monitor(s). A qualified biologist/biological monitor means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the sensitive and listed species.

- **AMM 2.** Preconstruction surveys for sensitive and listed species will be performed prior to groundbreaking activities. Surveys will be conducted by USFWS and CDFW-approved biologists. If individuals of sensitive or listed species are found, work will not begin until they are moved out of the work area to a USFWS/CDFW approved relocation site (see AMM 17).

- **AMM 3.** The USFWS and CDFW-approved biological monitor will remain on-site during initial ground disturbing activities and all construction activities in or adjacent to habitat for sensitive and listed species (i.e., the biologist will be present until the entire construction area has been surrounded by wildlife exclusion fencing, as discussed in AMM 6, and clearing and grubbing of the site has been completed). The approved biological monitor(s) will be given the authority to stop any work that may result in the take of sensitive and listed species. If the biological monitor(s) exercises this authority, the USFWS will be notified by telephone and electronic mail within one working day. The biological monitor will be the contact for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped individual. After the biological monitor no longer needs to be on the site daily, construction personnel will be vigilant for any individuals of these special-status species. If an individual is found, all work that could harm the individual will stop, and the construction crew will contact the biologist to relocate the animal out of harm's way.

- **AMM 4.** Contracts with contractors, construction management firms, and subcontractors will obligate all contractors to comply with these AMMs.

- **AMM 5.** Prior to construction, a construction employee education program will be conducted in reference to all potential sensitive and listed species on site. At minimum, the program will consist of a brief presentation by a USFWS and CDFW-approved biologist knowledgeable in the biology of the potentially occurring special-status species and legislative protection to explain concerns to contractors, their employees, and any personnel involved in the project. The program will include: a description of the species and their habitat needs; any reports of occurrences in the project area; an explanation of the status of each species, environmental laws and protections; and a list of measures (AMMs) being taken to reduce effects on these species during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all sensitive and listed species in the work area(s) will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. A list of employees who attend the training sessions will be maintained by the applicant. Contractor training will be incorporated into construction contracts and will be a component of weekly project meetings. Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the sensitive and listed species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. The applicant and contractor will be responsible for ensuring that crewmembers comply with the guidelines.

- **AMM 6.** Silt fencing or wildlife exclusion fencing will be used to prevent sensitive and listed species from entering the project site. Exclusion fencing will be at least 3 feet high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface. The fence will be pulled taut at each support to prevent folds or snags. Fencing shall be installed and maintained in good condition during all construction activities. Such fencing shall be inspected and maintained daily until completion of the project. The fencing will be removed only when all construction equipment is removed from the site.

- **AMM 7.** The following will not be allowed at or near work sites for covered activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets.
- **AMM 8.** Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- **AMM 9.** Vehicles will not exceed a speed limit of 15 miles per hour on unpaved roads within natural land-cover types, or during off-road travel.
- **AMM 10.** Vehicles or equipment will not be refueled within 100 feet of the swale unless a bermed and lined refueling area is constructed.
- **AMM 11.** Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
- **AMM 12.** To discourage the introduction and establishment of invasive plant species, seed mixtures/straw used within natural vegetation will be either rice straw or weed-free straw.
- **AMM 13.** Pipes, culverts, and similar materials greater than 4 inches in diameter will be stored so as to prevent sensitive and listed wildlife species from using these as temporary refuges, and these materials will be thoroughly inspected each morning for the presence of animals prior to being buries, capped, or otherwise used or moved in any way. If a sensitive or listed species is discovered inside a pipe, that section of pipe will not be moved until the individual has been relocated. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the sensitive or listed species has escaped.
- **AMM 14.** Stockpiling of material will occur such that direct effects on sensitive or listed species are avoided.
- **AMM 15.** Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no sensitive or listed species are trapped. Earthen escape ramps will be installed at intervals prescribed by a qualified biologist.
- **AMM 16.** To prevent the accidental entrapment of sensitive and listed species during construction, all excavated holes or trenches deeper than 6 inches will be covered at the end of each work day with plywood or similar materials, or a ramp will be provided at the end of the work day to allow trapped animals an escape method. Prior to the filling of trenches or holes, these areas will be thoroughly inspected for sensitive and listed species by the biological monitor. In the event of a trapped animal is observed, construction will cease until the individual has been relocated to an appropriate location by a USFWS and CDFW-approved biologist.

- **AMM 17.** The applicant will prepare a listed species translocation plan for the project to be reviewed and approved by the USFWS and CDFW prior to project implementation. The plan will include trapping and translocation methods, translocation site, and post translocation monitoring.
- **AMM 18.** Only USFWS and CDFW-approved biologists will conduct surveys and move sensitive and listed species.
- **AMM 19.** All trash and debris within the work area will be placed in containers with secure lids before the end of each workday in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. Containers will be emptied as necessary to prevent trash overflow onto the site and all rubbish will be disposed of at an appropriate off-site location.
- **AMM 20.** All construction activities must cease one half hour before sunset and should not begin prior to one half hour after sunrise. There will be no nighttime construction.
- **AMM 21.** Grading and construction will be limited to the dry season, typically mid-April-October.
- **AMM 22.** Erosion control measures will be implemented to reduce sedimentation in wetland habitat when activities are the source of potential erosion problems. Plastic monofilament netting (erosion control matting) or similar material containing netting shall not be used at the project site to avoid the potential for entanglement of animals. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
- **AMM 23.** Temporary impact areas shall be revegetated with an appropriate assemblage of native upland vegetation suitable for the area.

Mitigation Measure 1B. Compensatory Mitigation for California Tiger Salamander Habitat. Compensatory mitigation for the permanent direct loss of California tiger salamander habitat will be provided. Due to the relatively low quality of upland dispersal habitat (i.e., regularly disked hay field with very few rodent burrows to provide underground refugia) currently in the Study Area, compensatory mitigation will be provided at a 2:1 ratio (on an acreage basis) for permanent impacts. Compensatory mitigation will be provided via purchase of credits in a USFWS and CDFW-approved conservation bank, if one exists, or project-specific mitigation via preservation and management of suitable habitat for the species, at an appropriate off-site location within the range of the species.

Prior to the initiation of construction, the project proponent will purchase credits from a mitigation bank approved by the applicable resource agencies and/or prepare a Habitat Mitigation and Management plan (HMMP) describing the proposed mitigation. The HMMP will be prepared by a qualified ecologist and will include the following:

- summary of habitat impacts

- location of the habitat mitigation area (which must be within the range of the California tiger salamander) and description of habitats in the mitigation area (which must include habitat elements suitable for the California tiger salamander, such as upland grassland with rodent burrows for underground refugia)
- summary of information on the occurrence and distribution of the California tiger salamander and its breeding pond on and/or in the immediate vicinity of the mitigation site
- description of any measures that will be implemented to enhance the mitigation area (e.g., management of non-native vegetation)
- measures that will be implemented to manage the mitigation site and maintain suitable habitat for the California tiger salamander
- a funding plan to fund maintenance, management, monitoring, and reporting in perpetuity
- a monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). At a minimum, success criteria will include maintenance of upland habitat on the mitigation site.
- contingency measures and adaptive management measures to be implemented if necessary

5.2.2 Impacts on the California Red-legged Frog and the Southwestern Pond Turtle (Less than Significant with Mitigation)

Neither the California red-legged frog nor the southwestern pond turtle is known to occur in the Study Area, but potential foraging habitat for these species (and breeding habitat for the frog) is present in the perennial pond on the Leal Vineyard property immediately north of the Study Area. If either species is present in this pond, they could use the agricultural field in the Study Area to disperse overland, and southwestern pond turtles could nest in uplands in the Study Area adjacent to the pond. Therefore, under current conditions, the Study Area provides potential dispersal habitat for California red-legged frogs and southwestern pond turtles, and potential nesting habitat for southwestern pond turtles. However, because the majority of the Study Area is under active agriculture, suitable nesting habitat for pond turtles is limited to the periphery of the Study Area that does not receive regular disking, and dispersal habitat is of low quality due to the absence of refugia or cover in the agricultural fields.

Because the Study Area provides upland dispersal habitat for both species and limited nesting habitat for southwestern pond turtles, and California red-legged frogs and southwestern pond turtles could disperse through the project site, construction activities associated with the project could result in the direct loss and indirect disturbance of California red-legged frogs and southwestern pond turtles and their habitats. The project could impact individual California red-legged frogs and southwestern pond turtles as a result of:

- direct mortality during construction as a result of trampling by construction personnel or equipment;
- increased mortality due to roadkill caused by the construction and vehicular use in and around the vicinity of the project;

- direct mortality of eggs or young of southwestern pond turtles from the collapse of underground nests, resulting from soil compaction.

The project could result in permanent impacts to 21.97 ac of the disked hayfield habitat that may serve as dispersal habitat for both species, as this habitat would be permanently lost due to the construction of pavement, homes, and other hardscape (Figure 3). The constructed pavement, homes, and other hardscape would also become an impediment to dispersal between potential and known breeding ponds for the California red-legged frog and potential foraging ponds for the southwestern pond turtle (e.g., the perennial pond on the Leal Vineyard property immediately to the north of the Study Area and the ponds associated with the Ridgemark Golf & Country Club south of the property). Approximately 4.58 ac of potential California red-legged frog and southwestern pond turtle dispersal habitat will be temporarily impacted by grading (cut/fill) activities as part of the project (Figure 3). These areas are expected to provide habitat of similar quality to existing conditions shortly after the completion of construction.

Because of the regional rarity of these species, project-related impacts on individual California red-legged frog and/or southwestern pond turtle or their habitat would be considered significant under CEQA. Implementation of Mitigation Measure 1A described above for the California tiger salamander and western spadefoot would also minimize impacts to individual California red-legged frogs and southwestern pond turtles to a less-than-significant level.

Due to the possibility of individuals of the California red-legged frog breeding in the perennial pond on the Leal Vineyard property, and post-metamorphic frogs dispersing through the project site, the loss of upland dispersal habitat for the California red-legged frog would also be a significant impact, and implementation of Mitigation Measure 1B described above for the California tiger salamander will also serve as compensatory mitigation for the California red-legged frog (though the mitigation lands will need to be suitable for both the California tiger salamander and California red-legged frog). If mitigation measures required by the USFWS as conditions of incidental take authorization for the California red-legged frog differ from Mitigation Measures 1A and 1B, the USFWS-required measures would take precedence.

Due to the absence of observations of southwestern pond turtles in the perennial pond on the Leal Vineyard property, very limited amount of potential nesting habitat on the periphery of the Study Area adjacent to the perennial pond on the Leal Vineyard property, and limited use of the project's upland habitats for dispersal by turtles, it is our opinion that the loss of habitat for the southwestern pond turtle is a less-than-significant impact, and no compensatory habitat mitigation for impacts to this species is necessary.

5.2.3 Impacts on the San Joaquin Kit Fox (Less than Significant with Mitigation)

Suitable habitat for the federally endangered, state-threatened San Joaquin kit fox, low-lying grasslands with minimal topography, is not present in the Study Area. Although individuals historically occurred in the vicinity of the project site, there are few records within the past 35 years. Moreover, no San Joaquin kit fox burrows, scat, or prints were observed during either of the two site visits. In the rare event that an individual kit fox might occur in the Study Area, it is expected to occur only as a dispersing individual, and is not expected to linger. Therefore, there is a very low probability of this species occurring on the project site.

The project would not result in the loss of any habitat for the San Joaquin kit fox that is actually expected to be occupied. However, in the rare event that an individual disperses through the project site during project activities, it would potentially be at risk for injury or mortality due to equipment and vehicle traffic, a potentially significant impact due to the species' regional rarity. The project would not impede dispersal because the area occupied by the project site represents a small fraction of the locally available habitat that may be used by dispersing foxes, and there is substantial similar open habitat surrounding the project site that a dispersing fox, if one were present, could choose as a route.

Nevertheless, due to the rarity of the San Joaquin kit fox, any project impacts on individuals that may occur during project construction would be considered significant under CEQA. Therefore, Mitigation Measure 2A will be implemented to avoid impacts on individuals during construction. Although the loss of habitat for this species resulting from the project would be a less-than-significant impact, in our opinion, Mitigation Measure 2B will be implemented per County requirements to offset loss of potential habitat for this species.

Mitigation Measure 2A. Impact Avoidance and Minimization Measures. The following AMMs, derived from the *Standardized Recommendations for Protection of the San Joaquin Kit Fox prior to or during Ground Disturbance* (USFWS 1999), will be implemented during construction to avoid impacts to individual San Joaquin kit foxes.

- **AMM 24.** A preconstruction survey of the project site for San Joaquin kit foxes and their dens will be conducted by a qualified biologist prior to the start of construction activities.
- **AMM 25.** If potential dens are present, their disturbance and destruction will be avoided, if feasible. If potential dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with the USFWS and CDFW. If unoccupied, the qualified biologist will collapse these dens by hand in accordance with USFWS procedures (USFWS 1999).
- **AMM 26.** For dens that can be avoided, exclusion zones will be implemented following USFWS procedures (USFWS 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards.
  - Potential Den— A total of 4–5 flagged stakes will be placed 50 ft from the den entrance to identify the den location.
  - Known Den— Orange construction barrier fencing will be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until all construction-related disturbances have been terminated. At that time, all fencing will be removed to avoid attracting subsequent attention to the den. If a known den is detected, no

project activities will be performed within 100 ft of the den, and the USFWS will be contacted immediately.

  - Natal or Pupping Den— The USFWS will be contacted immediately if a natal or pupping den is discovered at or within 200 ft from the boundary of the construction area.

- **AMM 27.** Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active.

Mitigation Measure 2B. Compliance with San Benito County Ordinance 541. San Benito County Ordinance 541 requires the payment of mitigation fees for the development of open space in the Hollister area that is considered to be San Joaquin kit fox habitat. The project site is within the area for which fee payment is required. These fees will be used to finance a Habitat Conservation Plan under FESA.

5.2.4 Impacts on the Tricolored Blackbird (Less than Significant with Mitigation)

Suitable nesting habitat for the state threatened tricolored blackbird is not present in the Study Area. However, suitable foraging habitat for the tricolored blackbird is present within the project vicinity, and individuals may forage in the Study Area. In addition, potentially suitable nesting habitat is present in emergent vegetation surrounding the pond at the Leal Vineyards, approximately 250 ft from the project site. Therefore, there is a reasonable probability of this species occurring in the Study Area at least as a forager, and it may nest near the site.

The project would result in permanent impacts to 21.97 ac and temporary impacts to 4.58 ac of disked hayfield habitat that may serve as foraging habitat for tricolored blackbirds. Given the local and regional abundance of suitable foraging habitat for tricolored blackbirds, the loss of foraging habitat will not represent a significant impact to the species.

The project would not result in the loss of any nesting habitat or direct destruction of active nests, eggs, or young, because nesting habitat for the species is absent from the project site. Adult blackbirds would not be at risk of injury or mortality during construction activities, should they be foraging on site, as they are capable of moving out of the way of vehicles and equipment by walking away or flying. However, should the species nest close to construction activities, disturbance associated with construction could cause adults to abandon their nests, eggs, and young. Due to the species' regional rarity, such impacts would be significant. Implementation of Mitigation Measure 3 will reduce such impacts to less-than-significant levels.

Mitigation Measure 3. Avoidance of Impacts to Nesting Colony. A preconstruction survey of the project site, as well as a 250-ft buffer, for nesting tricolored blackbirds will be conducted by a qualified biologist prior to the start of construction activities. Should an active nesting colony be discovered, the biologist will establish a 250-ft buffer from the edge of the colony, to avoid any potential impacts to the nesting colony. No construction activity will occur within the 250-ft buffer while the colony is active.

5.2.4 Impacts on Burrowing Owls (Less than Significant)

Suitable nesting habitat for the burrowing owl, a California species of special concern, consists of flat or gently sloping open grassland or sparse shrubland ecosystems with burrows (typically those created by California ground squirrels) for nesting and cover. This habitat is absent from the Study Area, and thus we do not expect owls to occur regularly, if at all. However, ground squirrel burrows providing potential nesting and roosting sites are present in adjacent areas, and the project will result in the loss of potential foraging habitat for burrowing owls that might be nesting or roosting in the vicinity of the Study Area.

Because owls are currently absent from the project site, and the project site provides habitat that is of very low quality, impacts to burrowing owl habitat will be less-than-significant, in our opinion, and no compensatory habitat mitigation for this species is necessary.

However, because potential roosting and nesting habitat is present on adjacent properties, we cannot rule out the possibility that a pair of owls may nest on an adjacent property, or, more likely, that a single owl may take up residence in a burrow on an adjacent property. If a nest is present on an adjacent property but close enough to the project site, project activities could potentially impact the behavior of adult owls enough to result in disturbance of the nest, and possibly nest failure. Due to the regional rarity of the burrowing owl, impacts to individual burrowing owls and active nests would be significant. Implementation of Mitigation Measure 4 would reduce project impacts on the burrowing owl to a less-than-significant level.

Mitigation Measure 4. Burrowing Owl Impact Avoidance and Minimization Measures. The following avoidance and minimization measures (AMMs) will be implemented for the burrowing owl.

- **AMM 28.** Preconstruction surveys for burrowing owls shall be conducted in conformance with CDFW protocols. The initial site visit shall be conducted no more than 14 days prior to the start of any ground-disturbing activity such as clearing and grubbing, excavation, or grading, or any similar activity. If during the initial survey any ground squirrel burrows or other burrows that may be used as nesting or roosting sites by burrowing owls are detected, but no burrowing owls are observed, a second survey shall be conducted within 48 hours of the start of construction to determine whether any burrowing owls are present. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if burrowing owls are located on or immediately adjacent to impact areas the following measures shall be implemented.

- **AMM 29.** If burrowing owls are present during the nonbreeding season (generally 1 September to 31 January), a 160-foot buffer zone, within which no new project-related activity would be permissible, shall be maintained around the occupied burrow(s) if feasible, though a reduced buffer is acceptable during the non-breeding season as long as construction avoids direct impacts to the burrow(s) used by the owls. During the breeding season (generally 1 February to 31 August), a 250-foot buffer, within which no new project-related activity would be permissible, shall be maintained between project activities and occupied burrows. If owls are present at burrows on the site after 1 February, it will be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. This protected area shall remain in effect until 31 August, or based upon monitoring evidence, until the young owls are foraging independently.

- **AMM 30.** If ground-disturbing activities would directly impact occupied burrows, the owls occupying burrows to be disturbed shall be passively relocated during the non-nesting season. Relocation shall occur by a qualified biologist using one-way doors. No burrowing owls shall be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young owls have already fledged late in the season).

5.2.5 Impacts on Loggerhead Shrikes (Less than Significant)

Ostensibly suitable habitat for the loggerhead shrike, a California species of special concern, is present in the Study Area. Although this species could nest in the Study Area, it is more likely that the species would only forage within the Study Area, and nest outside the Study Area. Within the Study Area, the species may forage along the edges of the disked hayfield, using the fence posts as foraging perches. Nevertheless, we cannot rule out the possibility that one pair of loggerhead shrikes may nest in the Study Area.

Project construction activities may affect loggerhead shrike nesting and foraging habitat and could possibly impact active nests, including eggs or nestlings. Construction activities, particularly shrub removal, could result in the permanent loss of nesting habitat. However, because of the relatively small amount of nesting habitat that would be affected relative to the extent of suitable habitat in the region, impacts on habitat for the loggerhead shrike would not rise to the CEQA standard of having a *substantial* adverse effect. Moreover, although we cannot rule out the possibility of one pair of shrikes nesting on site, it is more likely that shrikes will only occur on site as foraging individuals.

Adult loggerhead shrikes are not expected to be killed or injured due to project activities because they could easily fly from the work site prior to such effects occurring. However, eggs or young in nests may be killed or injured as a result of destruction by construction personnel or equipment, or removal of vegetation containing nests. Further, nesting may be disrupted to the extent that nests would fail because of disturbance that was too frequent or too severe. In addition, project activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individuals causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. These types of impacts are expected to occur primarily while construction or maintenance activities are ongoing. Increases in human concentration, including ongoing trail use, and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site.

However, based on our site observations, the areal extent of the Study Area, and known breeding densities of this species, no more than one pair of loggerhead shrikes are expected to nest on or adjacent to the Study Area, if it is present at all. Therefore, the loss of individuals potentially resulting from project development would represent a very small fraction of the regional population of this species and would not rise to the CEQA standard of having a substantial adverse effect. Nevertheless, all native bird species, including the loggerhead shrike are protected from direct take by federal and state statutes (see Impact 5.5 below).

5.3 Impacts on Sensitive Communities: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (No Impact)

No wooded riparian or other sensitive communities are present within the project site. Impacts on the intermittent drainage are discussed below under Section 5.4, and riparian banks do not extend landward of this feature. The drainage within the project site does not have any associated wetlands or other sensitive natural communities. Therefore, the project would not result in impacts on sensitive communities.

5.4 Impacts on Jurisdictional Waters: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than Significant)

As described in Section 4, a narrow agriculturally affected drainage traverses the Study Area in its northeast corner. While dry at the time of surveys conducted in February 2020 and April 2019, this feature is apparent on historical aerial photographs of the area (NETR 2020, Google Earth 2020, UCSB 2020) and is included in the USFWS National Wetland Inventory (NWI) maps as an unnamed, seasonally flooded, intermittent stream that is a tributary to Santa Ana Creek downstream and to the north of the Study Area. For these reasons, and based on the observations in the field of its hydrologic connectivity to the drainages on properties to the north (downstream) and east (upstream) it is our opinion that the drainage feature is likely to be considered “waters of the United States” by USACE, “waters of the state” by RWQCB, and a “stream” subject to CDFW jurisdiction under Section 1602 of the California Fish and Game Code. The footprint of the proposed development (as seen on Figure 3) avoids the drainage swale and provides a 50-foot buffer of any grading activities from the centerline of the drainage, which is on average 2 feet wide. One element of the project, however, that will directly impact the drainage is the construction of an outfall from the proposed storm water detention basin in the southeastern portion of the Study Area. While the exact details of the outfall are not available at this point it is known that is will discharge directly into the drainage from the storm water detention basin and will be approximately 10.5 feet wide. Therefore the direct impact to the intermittent drainage would be a total of 21 square feet, permanently impacting 10.5 linear feet of the drainage, and temporary impacts related to installation of approximately another 21 square feet. Construction of the outfall in the drainage will require permit approval from the three aforementioned agencies. The outfall would be located near the upstream end of the drainage on the site and therefore all water captured by project hardscape will be treated before being discharged to the drainage, preventing any dewatering of this feature.

No wetland vegetation was observed within the drainage during surveys of the feature conducted in 2019 and 2020. There were no indicators of long term ponding or saturation observed along the length of the drainage. Due to its narrow width, infrequent flows, and lack of wetland vegetation, the intermittent drainage provides relatively low-quality wildlife habitat. The lack of aquatic habitat within the drainage precludes its use by amphibians. Wildlife usage of the drainage is expected to be similar to that of the surrounding disked hayfield.

Construction projects in California causing land disturbances that are equal to 1.0 ac or greater must comply with State requirements to control the discharge of storm water pollutants under the State Water Board NPDES/Construction General Permit. Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the NPDES/Construction General Permit require that the applicant utilize various measures including: on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Compliance with the Construction General Permit will require the protection of the intermittent swale to avoid potential sedimentation impacts. Additionally, in many Bay Area counties, including San Benito County, projects must also comply with the RWQCB, California Coast Region General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (GP WDRs) (Water Board Order No. 2013-001-DWQ). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevents storm water runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors. Compliance with both of these permits would prevent water quality impacts due to project implementation.

Compliance with USACE Section 404, RWQCB Section 401 and CDFW LSAA permit conditions, along with requirements to control the discharge of storm water pollutants during and following construction under the NPDES Construction General Permit and the RWQCB required Storm Water Pollution Prevention Plan (SWPPP) would reduce the project's potential impact on the jurisdictional waters to a less-than-significant level. The permanent impact of 21 square feet for creation of the outfall within the intermittent drainage would not rise to the CEQA standard of having a substantial adverse effect on jurisdictional waters. Implementation of Mitigation Measure 5 would reduce this impact to a less-than-significant level.

Mitigation Measure 5. Intermittent Drainage Impact Avoidance and Minimization Measures. Construction access within the drainage will be avoided during the wet season, from October 1 through May 1. Additionally, all temporary impacts to the intermittent drainage from construction of the outfall will be restored in place using a native seed mix. The temporary impact area will be monitored annually for two years to ensure recovery of the vegetation and to demonstrate the outfall location has been adequately stabilized, with success criteria being 75% of pre-project absolute vegetation cover and no more than 5% cover of species listed as highly invasive by Cal-IPC.

5.5 Impacts on Wildlife Movement: 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)

5.5.1 Impacts on Wildlife Movement (Less than Significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

There are no known or expected regional/landscape-level wildlife corridors that utilize the Study Area. Because the proposed development is adjacent to dense urban-suburban land uses to the west, in the Hollister area, overland wildlife movement from the west to the proposed development is limited. The proposed development will disconnect most of the upland habitat south of the project site from that to the north, as the proposed development extends from the southwest corner of the Study Area eastward along approximately 80% of the southern border, effectively resulting in the loss of the ability of wildlife (i.e., California tiger salamander) to disperse across this portion of the Study Area. The pond south of the southeast corner of the Study Area will be separated from the perennial pond on the Leal Vineyard property by the proposed development, requiring amphibians (such as California tiger salamanders and western spadefoots) to navigate around the eastern extent of the development to move between the ponds. However, the intermittent swale and area in the Study Area northeast of the swale will be left undeveloped, which will allow movement between these ponds and ponds to the east of the Study Area. Because this Study Area is currently under active agriculture, it is not considered an movement pathway for species such as the California tiger salamander, California red-legged frog, western spadefoot, or southwestern pond turtle because of its low-quality as dispersal habitat. It lacks suitable cover and refugia to facilitate dispersal and/or migration to and from potential breeding and foraging ponds, and agricultural manipulation of the habitat (i.e., disking, planting, fertilizing) for agricultural practices may injure or kill individuals of these species attempting to disperse across the Study Area. Therefore, at best currently only a very few individuals of these species are expected to attempt to use the upland habitat in the Study Area for movement. In addition, the Study Area is at the western edge of a large expanse of mostly undeveloped (interspersed with sparsely developed) habitat further to the east, and therefore, wildlife would still be able to generally move north to the south through this larger expanse of habitat east of the Study Area. For all these reasons, impacts of the project on wildlife movement will be less than significant.

5.5.2 Impacts on Nesting Birds (Less than Significant)

Construction disturbance during the avian breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. Due to the absence of sensitive habitats in the

Study Area, the habitats in the Study Area support only regionally common, urban-adapted breeding birds and support only a very small proportion of these species' regional populations. These birds are habituated to disturbance related to the surrounding residential area. Therefore, project impacts on nesting and foraging birds and special-status species that use the site, due to habitat impacts or disturbance of nesting birds, would not rise to the CEQA standard of having a substantial adverse effect, and these impacts would not constitute a significant impact on these species or their habitats under CEQA. However, all native bird species are protected from direct take by federal and state statutes (see Sections 3.1.3 and 3.2.4). Therefore, we recommend that the following measures (which are recommended but are not considered obligatory CEQA mitigation measures) be implemented to ensure that project activities comply with the MBTA and California Fish and Game Code:

- If feasible, project activities will be scheduled to avoid the avian nesting season. If such activities are scheduled to take place outside the nesting season, all impacts on nesting birds, including raptors, protected under the MBTA and California Fish and Game Code, would be avoided. The nesting season for most birds in San Benito County typically extends from February 1 through August 31, although in most years, a majority of birds have finished nesting by August 1.

- If project activities will not be initiated until after the start of the nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed by the project may be removed prior to the start of the nesting season (e.g., prior to 1 February) to reduce the potential for initiation of nests. If it is not feasible to schedule vegetation removal during the nonbreeding season, or where vegetation cannot be removed (e.g., in areas immediately adjacent to the site), then preconstruction surveys for nesting birds will be conducted as described below.

- If it is not possible to schedule the start of project activities between September 1 and February 1, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. These surveys will be conducted no more than one week prior to the initiation of project activities. During this survey, a qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and structures) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of non-raptors. Surveys for nesting golden eagles will extend out to 1 mile from the project site (to the extent that such areas are accessible).

- If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to work areas to be disturbed by these activities, the biologist, in consultation with CDFW, will determine the extent of a disturbance-free buffer zone to be established around the nest to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Typical buffers are 1 mile for golden eagles, 250 feet for burrowing owls, 300 feet for other raptors, and 50-100 feet for non-raptors. Because the majority of the site is already subject to disturbance by agricultural activities, the buffer zone around a nest will be determined on a case-by-case basis. In general, activities prohibited within such a buffer while a nest is active will be limited to construction-related activities (i.e., activities that were not ongoing when the nest was constructed) involving significantly greater noise, human presence, or vibrations than were present prior to nest initiation.

- If necessary to avoid impacts to active nests (i.e., nests containing eggs or young), nest starts (incomplete nests with no eggs or young) may be removed on a regular basis (e.g., every second or third day), starting in late January or early February to prevent active nests from becoming established.

5.6 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

Existing trees in the Study Area are limited to a small number of landscape trees associated with the existing residence in the Study Area. Most of these tree are likely to remain, since the existing property is remaining. Removal of trees within the project site is likely to be limited to some number of small Callery pears lining the existing driveway from Fairview Avenue. These trees are approximately 25 feet tall with a diameter-at-breast height of approximately 14 to 16 inches. Due to their small height and limited canopy, and wide spacing along a frequently used road, they do not provide high quality habitat for wildlife.

The project parcel does not contain woodland as defined in the San Benito County's Interim Woodland Management ordinance, so this ordinance does not apply. In addition, the project parcel is zoned Rural, so the San Benito County Permanent Tree Protection does not apply. Removal of the ornamental trees along the driveway would not be in conflict with any County ordinances protecting trees. Therefore, potential impacts related to conflict with local policies or ordinances regarding protected trees would be less than significant.

5.7 Impact due to Conflicts with an Adopted Habitat Conservation Plan: 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)

The project site is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not conflict with any such documents.

5.8 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities in San Benito County will result in impacts on the same habitat types and species that would be affected by the proposed project. The project, in combination with other projects in the area and other activities that impact the species that are affected by this project, could contribute to cumulative effects on special-status species. Other projects in the area include development projects that could adversely affect these species.

The cumulative impact on biological resources resulting from implementation of the proposed project in combination with other projects in the region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources would occur.

However, the proposed project would implement a number of mitigation measures to reduce impacts on both common and special-status species, as described above. Thus, provided that this project successfully incorporates the mitigation measures described in this biological resources report, the project will not contribute to substantial cumulative effects on biological resources.

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Appendix C

Cultural Resources Assessment

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March 14, 2022
Project No: 20-10681

Charles Hazelbaker, Senior Forward Planning Manager
KB Home South Bay Inc.
5000 Executive Parkway, Suite 175
(Bishop Ranch 8)
San Ramon, California 94583
Submitted via email: chazelbaker@kbhome.com

Subject: Cultural Resources Assessment for the Lee Subdivision Project, Hollister, San Benito County, California

Dear Mr. Hazelbaker:

This letter report presents the findings of a cultural resources assessment completed for the Lee Subdivision Project (proposed project) located at 291 Old Ranch Road, Hollister, in San Benito County, California. KB Home South Bay Inc. retained Rincon Consultants, Inc. (Rincon) to support the proposed project's compliance with the California Environmental Quality Act (CEQA). This letter report documents the results of the tasks performed by Rincon, including a cultural resources records search, archival and background research, and a field survey. All work was completed in accordance with CEQA and applicable local regulations. County of San Benito is the lead agency under CEQA.

Rincon understands that the project also must adhere to Section 106 of the National Historic Preservation Act (NHPA) of 1966 as the project requires a Clean Water Act Section 404 permit. The United States Army Corp of Engineers (USACE) is the federal lead agency for the project. This report discusses the CEQA requirements only. The Section 106 requirements are discussed in a separate report (Montgomery et al. 2022).

Project Site and Description

The project site is located at 291 Old Ranch Road in Hollister, California. Specifically, the proposed project encompasses portions of Section 12 of Township 13 South, Range 5 East, and Section 7 of Township 13 South, Range 6 East on the *Tres Pino*, *California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Attachment 1: Figure 1). The project site is located approximately 0.5-mile north of Highway 25 in Hollister California, at an approximate elevation of 146 to 162 meters (480 to 530 feet) above mean sea level. The project site is surrounded to the west by residential development with various residential and agricultural use to the east, northwest, north, and south (Attachment 1: Figure 2).

The following project description was provided by KB Home South Bay Inc.in January 2022. The proposed project would result in the demolition of the existing modern on-site residence, barn, septic system, and leach field, to allow for the subdivision of 141 residential lots. These lots would be developed with 121 one- and two-story single-family detached units and 20 single-family duet units. A total of 15 percent of the residences (21 units) would be designated as affordable housing, per an affordable housing agreement between the applicant and the County. It is anticipated that 25 accessory dwelling units (ADU) would also be offered as an optional feature to homebuyers; however, 103 of the proposed lots could accommodate a site plan that includes an ADU. The project includes public land dedications for street rights-of-way and a public park. Construction of internal streets and the proposed park would be undertaken by the project applicant, with the County of San Benito responsible for maintenance of these features through a community facilities district.

Methods

Background and Archival Research

Rincon completed background and archival research in support of this assessment in February 2022. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the project site and its context:

- San Benito County Assessor's Office
- Historical aerial photographs accessed via NETR Online
- Historical aerial photographs obtained from Environmental Resources Data, Inc.
- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historical USGS topographic maps
- City of Hollister Building Permits

California Historical Resources Information System Records Search

On January 27, 2022, Rincon conducted a California Historical Resources Information System (CHRIS) records search from the Northwest Information Center (NWIC) (Attachment 2). The NWIC is the official state repository for cultural resources records and reports for the county in which the proposed project falls. The purpose of the records search was to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.5-mile radius surrounding it. Rincon also reviewed the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historical Landmarks list, and the Built Environment Resources Directory (BERD), as well as its predecessor the California State Historic Property Data (HPD) File. Additionally, Rincon reviewed the Archaeological Determination of Eligibility (ADOE) list.

Sacred Lands File Search

Rincon contacted the Native American Heritage Commission (NAHC) on January 17, 2022, to request a search of the Sacred Lands File (SLF), as well as a contact list of Native Americans culturally affiliated with the project site vicinity (Attachment 3).

Field Survey

Rincon Archaeologist Courtney Montgomery, MA, conducted a pedestrian survey of the project site on February 7, 2022 using transect intervals spaced 15 meters and oriented generally from east to west.

Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld Global Positioning Satellite (GPS) unit and a georeferenced map of the project site. Site characteristics and survey conditions were documented using field records and a digital camera. Copies of the survey notes and digital photographs are maintained at our Rincon Monterey office.

Findings

Known Cultural Resources Studies

The CHRIS records search and background research identified 23 cultural resources studies within 0.5-mile of the project site (Attachment 2). Of these studies, one (S-028943), discussed in further detail below, overlaps approximately 3 percent of the project site.

Study S-028943

Colin Busby of Basin Research Associates, Inc. prepared study S-028943, *Cultural Resources Review, Northern San Benito County Groundwater Management Plan, Program Environmental Impact Report (EIR), California (letter report),* in 2003. The project consisted of the adoption and implementation of groundwater management plans throughout the San Benito County Water District service area and was subject to Section 106 of the NHPA as the project required a Clean Water Act Section 404 permit from the USACE. For the project. Basin Research Associates, Inc. conducted background and archival research, a records search from the NWIC, consultation with the Bureau of Land Management, and pedestrian surveys of various service areas. The study identified two prehistoric archaeological resources and two prehistoric trails within the study area, as well as 19 historic-period resources. Mitigation measures including archaeological monitoring, construction personnel training, flagging and/or fencing of resources for avoidance and protection, and requirements for identification and evaluation of resources during unanticipated discoveries were recommended for the project (Busby 2003). No cultural resources were identified in the current project site. The study encompassed 0.75 acres of the westernmost portion of the current project site along Old Ranch Road.

Known Cultural Resources

The CHRIS records search and background research identified one cultural resource within 0.5 mile of the project site. Resources recorded in the search radius are listed in Table 1 below. No resources are recorded within or adjacent to the project site.

Table 1 Known Cultural Resources

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Site
P-35-000316	CA-SBN-221H	Historic-Period Structure	Highway 25	1999 (J. Berg, L. Leach-Palm, and S. Mikesell)	Unevaluated	Outside

Source: NWIC 2022

Aerial Imagery and Historical Topographic Maps Review

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project site. Historical topographic maps from 1919 to 1950 depict the project site as undeveloped, south of a dirt road, west of a major unidentified road, north of the Southern Pacific Railroad line, and west of a stream (USGS 2022; NETR Online 2022). Topographic maps from 1955 1986 continue to depict the project site as undeveloped; however, Fairview Road to the west of the project site is identified, as well as structures to the west, just off Fairview Road (USGS 2022; NETR Online 2022). Aerial imagery from 1953 to 1971 confirm the topographic map depictions, with land plowing and disking in various years (NETR Online 2022). Imagery from 1981 to 2005 depicts a residence within the center of the current project site, the current barn within the project site, Old Ranch Road, and four other residential structures east of the project site (NETR Online 2022). Starting in 2009, aerial imagery shows that the residence within the central area of the project site is no longer standing; however, a residence south of the existing barn is depicted, along with plowing and disking. By the 2012 through 2018 topographic map updates, Old Ranch Road is depicted (USGS 2022; NETR online 2022). Aerial imagery from 2010 to 2018 depicts the project site in its current condition (NETR Online 2022).

Sacred Land File Search

On February 3, 2022, the NAHC responded to Rincon's SLF request, stating that the results of the SLF search were negative. See Attachment 3 for the NAHC response, including Tribal contacts list(s). As part of the Section 106 efforts for the project, Rincon conducted outreach to the five tribes listed on the NAHC list, the results of which can be found in the Section 106 Cultural Resources Assessment. As part of the outreach efforts, Rincon received the following two responses (Montgomery et al. 2022):

- On February 18, 2022, Chairperson Valentin Lopez of the Amah Mutsun Tribal Band responded via phone, stating that he has no comment regarding the project; however, a discovery is made, he would like to be notified to have a Native American monitor from the tribe onsite.
- On February 18, 2022, Chairperson Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista responded via phone, stating that she would like to be notified immediately if any remains are discovered, that all persons participating in digging have cultural resources sensitivity training, and that archaeological and Native American monitors be present during ground disturbing activities.

Survey Results

The following section summarizes the results of all background research and fieldwork as they pertain to archaeological resources that may qualify as historical resources and/or unique archaeological resources.

No archaeological resources were identified during the field survey. Ground visibility was poor to fair (0 to 30 percent) throughout the southeastern most portion of the project site, and good (61 to 75 percent) throughout the other areas of the project site. Ground visibility throughout the project site was obscured due to tall grasses and weeds. Figure 3 in Attachment 1 depicts ground visibility throughout the project site. Soils within the project site consisted of dark grayish brown sandy, silty, clay and alluvial loam, consistent with the soil findings for the project site (Montgomery et al. 2022). Bovid (cow) bones consisting of an intact phalanx and a fragmented vertebra were identified during the survey (Attachment 1: Photograph 1). The bones were not historic in age and did not show signs of human modification. Plowing and tilling was evident throughout the entirety of the project site (Attachment 1: Photograph 2). Additionally, there are two roads within the project site. The first, a paved road, trends east-west throughout the central portion of the project site to a transformer box (Attachment 1: Photograph 3). The second is a two-track dirt road which trends southeast-northwest off the concrete road to the southeasternmost corner of the project site (Attachment 1: Photograph 4). Photograph 5 in Attachment 1 depicts site visibility conditions.

Conclusions and Recommendations

The impact analysis included here is organized based on the cultural resources thresholds included in CEQA Guidelines Appendix G: Environmental Checklist Form:

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, we have chosen to limit analysis under Threshold A to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B.

Historical Built Environment Resources

The field survey and background research did not identify any built-environment resources that may be considered historical resources under CEQA within the project site. The project therefore does not have the potential to impact built environment historical resources and Rincon recommends a finding of ***no impact to historical resources*** pursuant to CEQA.

Historical and Unique Archaeological Resources

This assessment did not identify any archaeological resources or archaeological deposits in the project site during the pedestrian survey. The SLF for the project was returned with negative results and no cultural resources were identified by the CHRIS records search. Chairperson Valentin Lopez of the Amah Mutsun Tribal Band and Chairperson Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista responded to Rincon's outreach efforts requesting to be notified of any cultural resources finds for the project. Chairperson Zwierlein further requested that crews receive cultural resources sensitivity training as well as archaeological and Native American monitoring for the project. Although Chairperson Zwierlein requested archaeological and Native American monitoring for the project, no prehistoric or historic archaeological sites have been previously recorded within the project site or the 0.5-mile radius surrounding it. Furthermore, Rincon's pedestrian survey did not identify any cultural resources within the project site and revealed a high level of disturbance within the project site. The lack of surface evidence of archaeological materials does not preclude their subsurface existence. However, the absence of substantial prehistoric or historic-period archaeological remains within the immediate vicinity, along with the existing level of disturbance in the project site, suggest there is a low potential for encountering intact subsurface archaeological deposits. Rincon presents the following recommended mitigation measures for a worker environmental awareness program and unanticipated discoveries during construction. With adherence to these measures, Rincon recommends a finding of ***less than significant impact with mitigation for archaeological resources*** under CEQA.

Recommended Mitigation

Unanticipated Discovery of Cultural Resources

In the unlikely event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work in the immediate area should be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology (National Park Service 1983) should be contacted immediately to evaluate the find. If the find is prehistoric, then a Native American representative should also be contacted to participate in the evaluation of the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the proposed project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources.

Human Remains

No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of less than significant impact to human remains under CEQA.

Should you have any questions concerning this study, please do not hesitate to contact the undersigned at (805) 201-9621 or lflaherty@rinconconsultants.com.

Sincerely,
Rincon Consultants, Inc.

Courtney Montgomery, MA
Archaeologist/Assistant Project Manager

Leanna Flaherty, MA, RPA
Project Manager/Archaeologist

Hannah Haas, MA, RPA
Cultural Resources Program Manager/Senior Archaeologist

Andrew Pulcheon, MA, RPA, AICP, CEP
Principal

Attachments

Attachment 1 Figures

Attachment 2 Northwest Information Center Records Search Results

Attachment 3 Sacred Lands File Search Results and Native American Outreach

References

Busby, Colin

2003 Cultural Resources Review, Northern San Benito County Groundwater Management Plan, Program Environmental Impact Report (EIR), California (letter report). Report on file at the Northwest Information Center, Sonoma State University.

Montgomery, Courtney, Leanna Flaherty, Hannah Haas, and Andrew Pulcheon

2022 Lee Subdivision Project Cultural Resources Assessment, San Benito County, California. Rincon Consultants Project No. 20-10682. Report on file at the Northwest Information Center, Sonoma State University.

NETR Online

2022 *Historic* Aerials. https://www.historicaerials.com/viewer, Accessed February 2022.

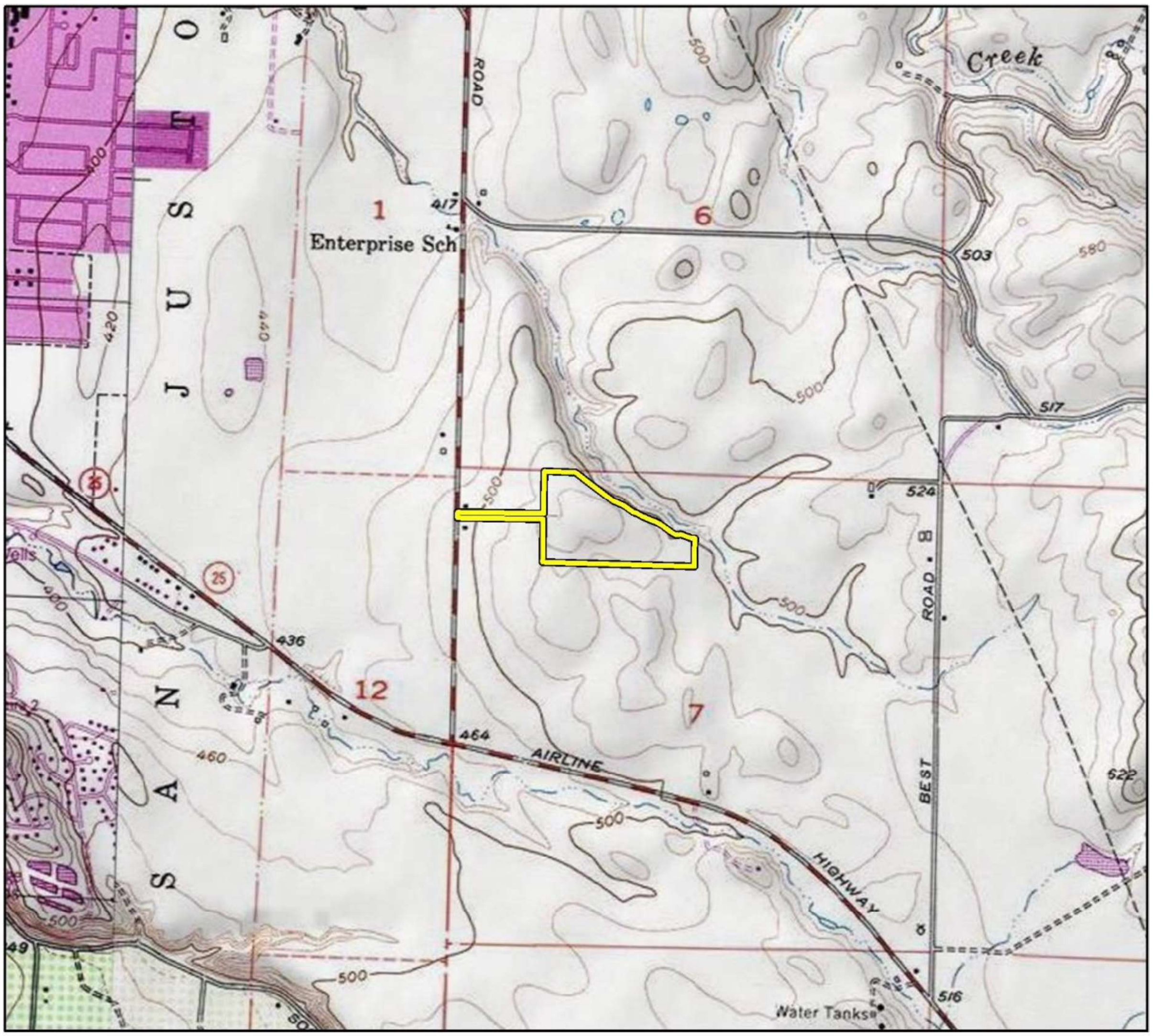
United States Geological Survey (USGS)

2022 Topo View. [online map database]. https://ngmdb.usgs.gov/topoview/, Accessed February 2022.

Attachment 1

Figures

Figure 1 Regional Project Location Map



Basemap provided by National Geographic Society, Esri and their licensors © 2022. Tres Pinos Quadrangle. T13S R05E S12 & T13S R06E S07. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

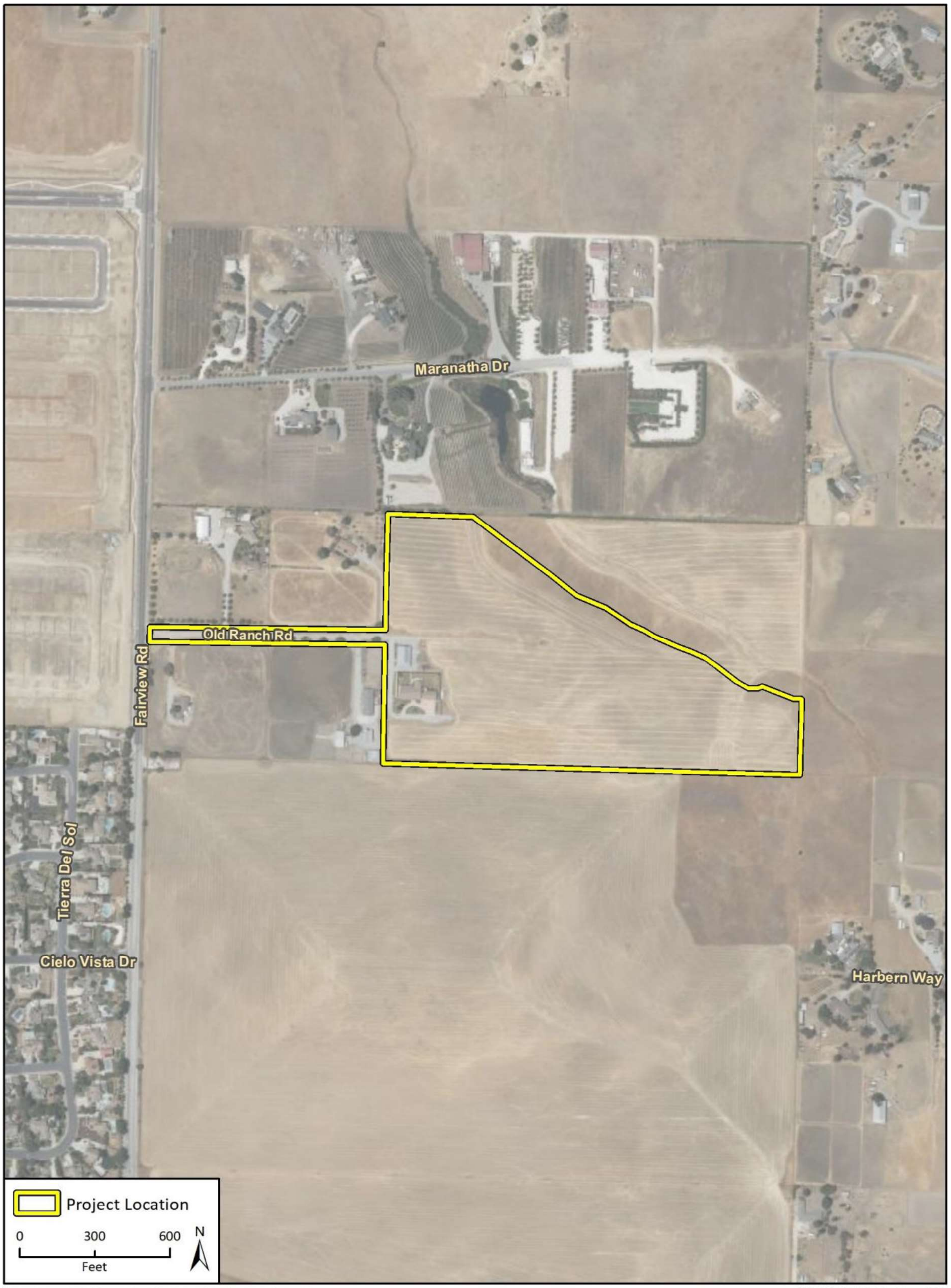
Project Site

0 1,000 2,000 Feet

N

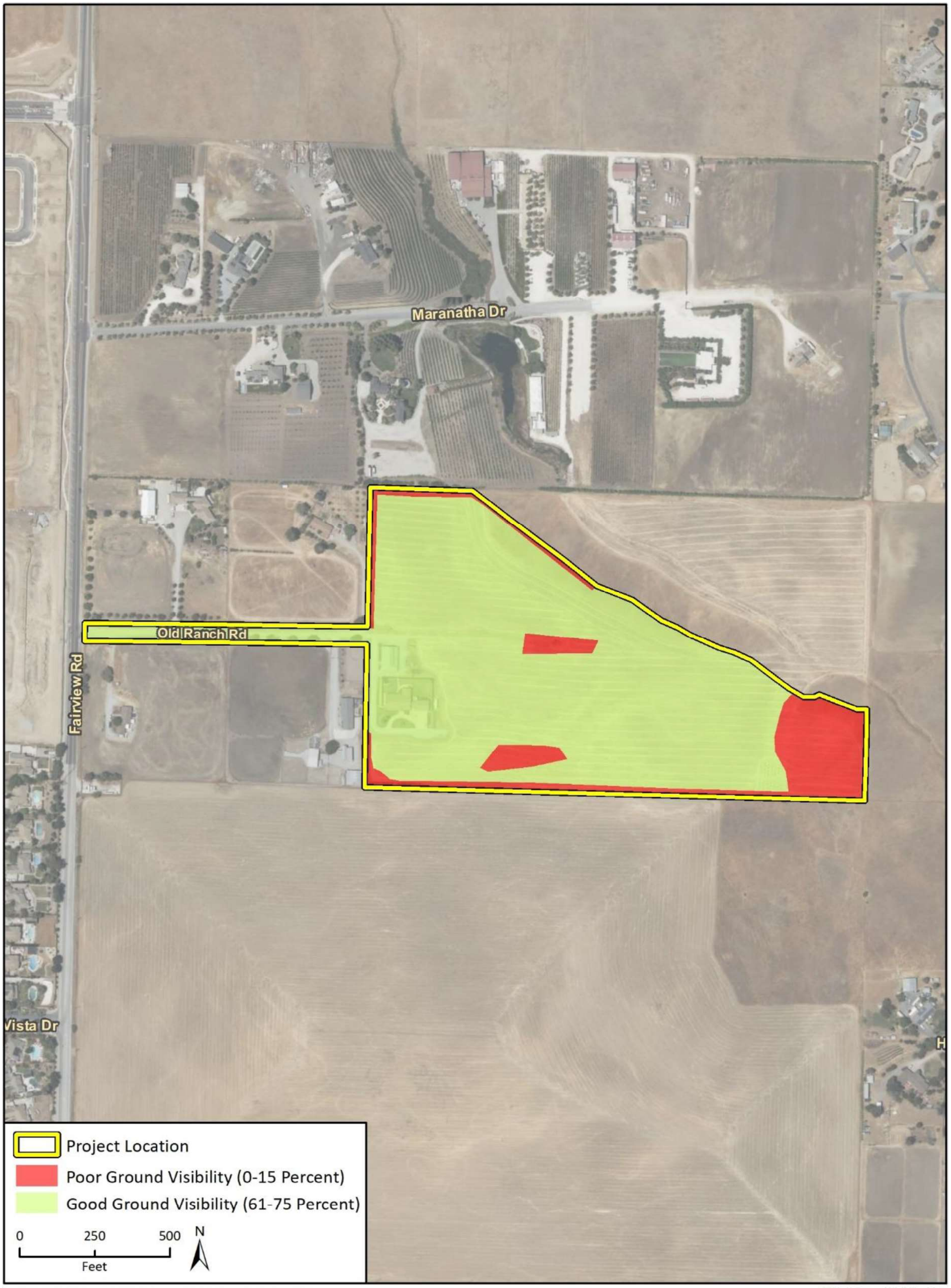
CRFig 1 Proj Locn Map - CEQA

Figure 2 Project Location Map



Imagery provided by Microsoft Bing and its licensors © 2022.

Figure 3 Ground Visibility Map



Imagery provided by Microsoft Bing and its licensors © 2022.

Photograph 1   Bovid (Cow) Phalanx, Plainview

Photograph 2   Evidence of Tilling Throughout APE, Facing East

Photograph 3 Cement Road to Transformer Box, Facing East

Photograph 4 Two-Track Dirt Road Throughout APE, Facing Northwest

Photograph 5 Tall Grasses and Poor Ground Visibility, Facing East

Attachment 2

Northwest Information Center Records Search Results

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-005222	Voided - E-4 SBN; Voided - E-414 SCL; Voided - E-831 SCL; Voided - S-4842; Voided - S-5240	1973	Thomas F. King and Patricia P. Hickman	Archaeological Impact Evaluation: San Felipe Division, Central Valley Project, Part I; The Southern Santa Clara Valley, California: A General Plan for Archaeology	California State University, San Francisco	27-000331, 27-000332, 27-000333, 27-000334, 27-000335, 27-000336, 27-000337, 27-000338, 27-000340, 27-000341, 27-000349, 27-000382, 27-000384, 27-000565, 27-000585, 27-000697, 27-000698, 27-000762, 27-001883, 35-000003, 35-000004, 35-000024, 35-000025, 35-000026, 35-000027, 35-000028, 35-000029, 35-000030, 35-000031, 35-000032, 35-000033, 35-000034, 35-000035, 35-000036, 35-000039, 35-000040, 35-000041, 35-000042, 35-000043, 35-000044, 35-000045, 35-000046, 35-000049, 35-000050, 35-000051, 35-000052, 35-000053, 35-000054, 35-000055, 35-000279, 35-000568, 35-000575, 43-000074, 43-000107, 43-000108, 43-000109, 43-000110, 43-000111, 43-000112, 43-000113, 43-000114, 43-000115, 43-000116, 43-000117, 43-000118, 43-000119, 43-000120, 43-000121, 43-000122, 43-000123, 43-000124, 43-000125, 43-000126, 43-000127, 43-000128, 43-000129, 43-000130, 43-000131, 43-000132, 43-000133, 43-000134, 43-000135, 43-000136, 43-000171, 43-000327, 43-000328, 43-000329, 43-000332, 44-000047, 44-000049, 44-000064, 44-000065, 44-000066, 44-000772
S-005222a		1973	Thomas F. King	Archaeological Impact Evaluation: San Felipe Division, Central Valley Project, Part II: The Direct Impact of San Felipe Division Facilities on Archaeological Resources	California State University, San Francisco	
S-005222b		1978	Gary S. Breschini and Trudy Haversat	A Preliminary Archaeological Surface Reconnaissance of the San Felipe Division, Central Valley Project, Santa Clara and San Benito Counties, California	Archaeological Consulting	
S-005222c		1980	David M. Van Horn	Archaeological and Historical Investigations in Portions of the Central Valley Project, San Felipe Division	ESCA - Tech Corp	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-007783	Submitter - AC Project 788	1985	R. Paul Hampson and Gary S. Breschini	Preliminary Cultural Resources Reconnaissance for Cielo Vista Estates, Near Hollister, San Benito County, California.	Archaeological Consulting	
S-012559	IC Record Search Nbr - 6080-90-239	1990		Cultural Resource Evaluation for the West Fairview Road Area, County of San Benito	Archaeological Resource Management	
S-014108		1992	Matthew R. Clark	Archaeological Reconnaissance of Three Alternative Alignments for the Highway 25 Bypass Project in the City of Hollister, San Benito County, California	Holman & Associates	
S-016410	Caltrans - 05-SBT-25-44.7/48.9; Submitter - J-3813-002	1994	John L. Edwards	Cultural Resources Survey for a Pacific Bell Fiber Optic Line Along State Highway 25, Between Hollister and Tres Pinos, San Benito County, California (Draft Report)	Biosystems Analysis, Inc.	
S-017611	IC Record Search Nbr - 60800-95-54	1995		Cultural Resource Evaluation for the Hollister Treatment Plant EIR, 940003, County of San Benito	Archaeological Resource Management	
S-018800		1996	Anna Runnings	Historic Property Clearance Report for Proposed Acceleration and Deceleration Lanes on Highway 25 at Fairview Road, Best Road, and Ridgemark Drive, Hollister, San Benito County, California	Archaeological Consulting	
S-019423		1997	Robert Cartier	Cultural Resource Evaluation for the Best Road Project, County of San Benito	Archaeological Resource Management	
S-020419	IC Record Search Nbr - 60800-98-231	1998		Cultural Resource Evaluation of a Section of Land on Highway 25 at the Intersection of Enterprise Road in the County of San Benito	Archaeological Resource Management	
S-023015		2000	Mary Doane and Trudy Haversat	Negative Archaeological Survey Report for Proposed Turn Lanes and Highway Widening on State Highway 25 at the New Sunnyslope County Water District Facility in Hollister, San Benito County, California, 05-SBN-25 Post Mile 47.9-48.1	Archaeological Consulting	
S-023042	Submitter - AC Project 2921	2000	Mary Doane and Trudy Haversat	Preliminary Archaeological Reconnaissance for APN 20-33-05, in Hollister, San Benito County, California	Archaeological Consulting	
S-028943	Voided - S-28944	2003	Colin I. Busby	Cultural Resources Review, Northern San Benito County Groundwater Management Plan, Program Environmental Impact Report (EIR), California (letter report)	Basin Research Associates, Inc.	35-000033, 35-000050, 35-000162, 35-000164, 35-000212, 35-000229, 35-000230, 35-000258, 35-000301, 35-000302, 35-000303, 35-000311, 35-000329

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-028943a		2003	Colin I. Busby	Additional/Supplemental Areas Archival Records Search Results for Cultural Resources Assessment (letter dated January 25, 2003), Northern San Benito County Groundwater Management Plan Program Environmental Impact Report (EIR), California (letter report)	Basin Research Associates	
S-034554		2008	Robert Cartier	Cultural Resource Evaluation of the Gavilan Campus Project at Airline Highway and Fairview Road in the County of San Benito	Archaeological Resource Management	
S-035066	Submitter - AC Project 4156	2008	Mary Doane and Gary S. Breschini	Preliminary Archaeological Reconnaissance for the West Fairview Apartments Project in Hollister, San Benito County, California	Archaeological Consulting	
S-038300	Caltrans - EA: 009E07 (30-SCR, MON, SBT, SLO, SB); Other - Contract No. 06A0148	2001	Patricia Mikkelsen,, Laura Leach-Palm, Jennifer Hatch, Elizabeth Kallenbach, and Jerome King	Cultural Resources Inventory of Caltrans District 5 Rural Highways, San Benito County, California, Highways 25, 101, 129, 146, and 156, Volume 1: Report	Far Western Anthropological Research Group, Inc.	35-000005, 35-000018, 35-000019, 35-000020, 35-000027, 35-000137, 35-000168, 35-000296, 35-000297, 35-000309, 35-000312, 35-000313, 35-000314, 35-000315, 35-000316, 35-000317, 35-000318, 35-000319, 35-000320, 35-000321, 35-000322, 35-000323, 35-000324, 35-000325, 35-000326, 35-000327, 35-000328, 35-000329, 35-000330, 35-000331, 35-000332, 35-000334
S-039041		2008		Historic Properties Survey Report/Finding of Effect (No Historic Properties Affected), Ridgemark Wastewater Treatment and Recycled Water Improvements Project, Sunnyslope County Water District, Hollister, San Benito County, California	Basin Research Associates, Inc.	
S-045564	OTIS Report Number - COE_2017_0210_001; Submitter - AC Project 4996; Submitter - Corps. File No. 2013-000379S	2014	Mary Doane and Gary S. Breschini	Preliminary Archaeological Reconnaissance for the Roberts Ranch Subdivision Project (APN 20-31-09), Hollister, San Benito County, California	Archaeological Consulting	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-045564a		2017	Katie Vallaire	Supplemental Archaeological Survey for Portions of the Roberts Ranch Project site (APNs 057-490-002-000 and 057-490-010-000) in Hollister, San Benito County, California (Corps File No. 2013-0379s)	LSA	
S-045564b		2017	Rick M. Bottoms and Julianne Polanco	COE_2017_0210_001, Section 106 Consultation for the Roberts Ranch Residential Development Project, San Benito County, California (2013-000379S)	U.S. Army Corps of Engineers; Office of Historic Preservation	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-35-000316	CA-SBN-000221H	Resource Name - OB-25, MB-25; Other - Highway 25	Structure	Historic	HP37	1999 (J. Berg, L. Leach-Palm, S. Mikesell, FWARG, JRP)	S-038300

Attachment 3

Sacred Lands File Search Results and Native American Outreach

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 2, 2022

Leanna Flaherty
Rincon Consultants, Inc.

Via Email to: lflaherty@rinconconsultants.com

Re: San Benito County Lee Subdivision EIR Project, San Benito County

Dear Ms. Flaherty:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Benito County
2/2/2022

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Costanoan

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443 - 9702
kwood8934@aol.com

Foothill Yokut
Mono

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed San Benito County Lee Subdivision EIR Project, San Benito County.

Lee Subdivision Project - Section 106 Correspondence

Contact List	Outreach Efforts	Response	Comments
Amah Mutsun Tribal Band Valentin Lopez, Chairperson P.O. Box 5272 Galt, California 95632 Phone: (916) 743 - 5833 Via email: vlopez@amahmutsun.org	02/08/2022: Email letter 2/18/22: Called at 1:27pm, Lopez answered		2/18 phone call: Wanted to know if area was surveyed and if any natural springs were present in area. After given info, says he currently has no comments but if anything is discovered he would like to be notified to have a NAM from the tribe onsite.
Amah Mutsun Tribal Band of Mission San Juan Bautista Irene Zwierlein, Chairperson 3030 Soda Bay Road Lakeport, California 95453 Phone: (650) 851 – 7489 | Fax: (650) 332-1526 Via email: amahmutsuntribal@gmail.com	02/08/2022: Email letter 2/18/22: Called at 1:38pm		2/18: phone call: Commented that she requests that archaeological and native monitors will be onsite during excavation activities, that all people digging have cultural resources sensitivity training, and to let her know immediately if any remains are discovered.
Indian Canyon Mutsun Band of Costanoan Kanyon Sayers-Roods, MLD Contact 1615 Pearson Court San Jose, California 95122 Phone: (408) 673 - 0626 Via email: kanyon@kanyonkonsulting.com	02/08/2022: Email letter 2/18/22: Called at 2:04pm, no answer, left voicemail 2/25/22: called at 8:48am, no answer, left voicemail, followed up via email		
Indian Canyon Mutsun Band of Costanoan Ann Marie Sayers, Chairperson P.O. Box 28 Hollister, California 95024 Phone: (831) 637 - 4238 Via email: ams@indiancanyons.org	02/08/2022: Email letter 2/18/22Called at 2:07pm, no answer, left voicemail 2/25/22:called at 8:50am, no answer, unable to leave voicemail, followed up via email		

Contact List	Outreach Efforts	Response	Comments
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, California 93906 Phone: (831) 443 - 9702 Via email: kwood8934@aol.com	02/08/2022: Email letter 2/18/22: Called at 2:10pm, no answer, unable to leave voicemail, sent email 2/25/22: Called at 8:51am, no answer, unable to leave voicemail, sent followup via email.		

Rincon Consultants, Inc.

2511 Garden Road, Suite C250
Monterey, California 93940

831 333 0310 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

February 7, 2022

Valentine Lopez, Chairperson
Amah Mutsun Tribal Band
PO Box 5272
Galt, California 95632
Via email: vlopez@amahmutsun.org

Subject: **Cultural Resources Assessment for the San Benito County Lee Subdivision Project, San Benito County, California**

Dear Chairperson Lopez:

Rincon Consultants, Inc. has been retained by KB Homes to conduct a cultural resources assessment for San Benito County's proposed Lee Subdivision (Project). The project site is located at 291 Old Ranch Road, which connects to Fairview Road approximately 0.5-mile north of Airline Highway/SR 25, in unincorporated San Benito County (APN 025-320-004). The site is bordered by low density single-family residences to the north and west, and open space to the east. The project applicant is proposing a 141-lot subdivision with subsequent residential development (with 141 residential units and 25 ADUs) on the approximately 27.5-acre site. The proposed development would include 20 affordable lots containing paired duets located throughout the project site.

The proposed undertaking may require a permit from the U.S. Army Corps of Engineers (USACE) and is, therefore, subject to Section 106 of the National Historic Preservation Act. Rincon is completing outreach to identify parties interested in participating in the Section 106 process. This letter is not intended to constitute formal consultation under Section 106; formal Section 106 consultation will be completed by the USACE. If you or your organization has any knowledge or specific concerns regarding cultural resources in the project area or would like to consult with the USACE as part of the Section 106 process, please respond by email at lflaherty@rinconconsultants.com or by telephone at (805) 201-9621. Please respond within 30 days of receipt of this letter if you are interested in consultation.

Sincerely,

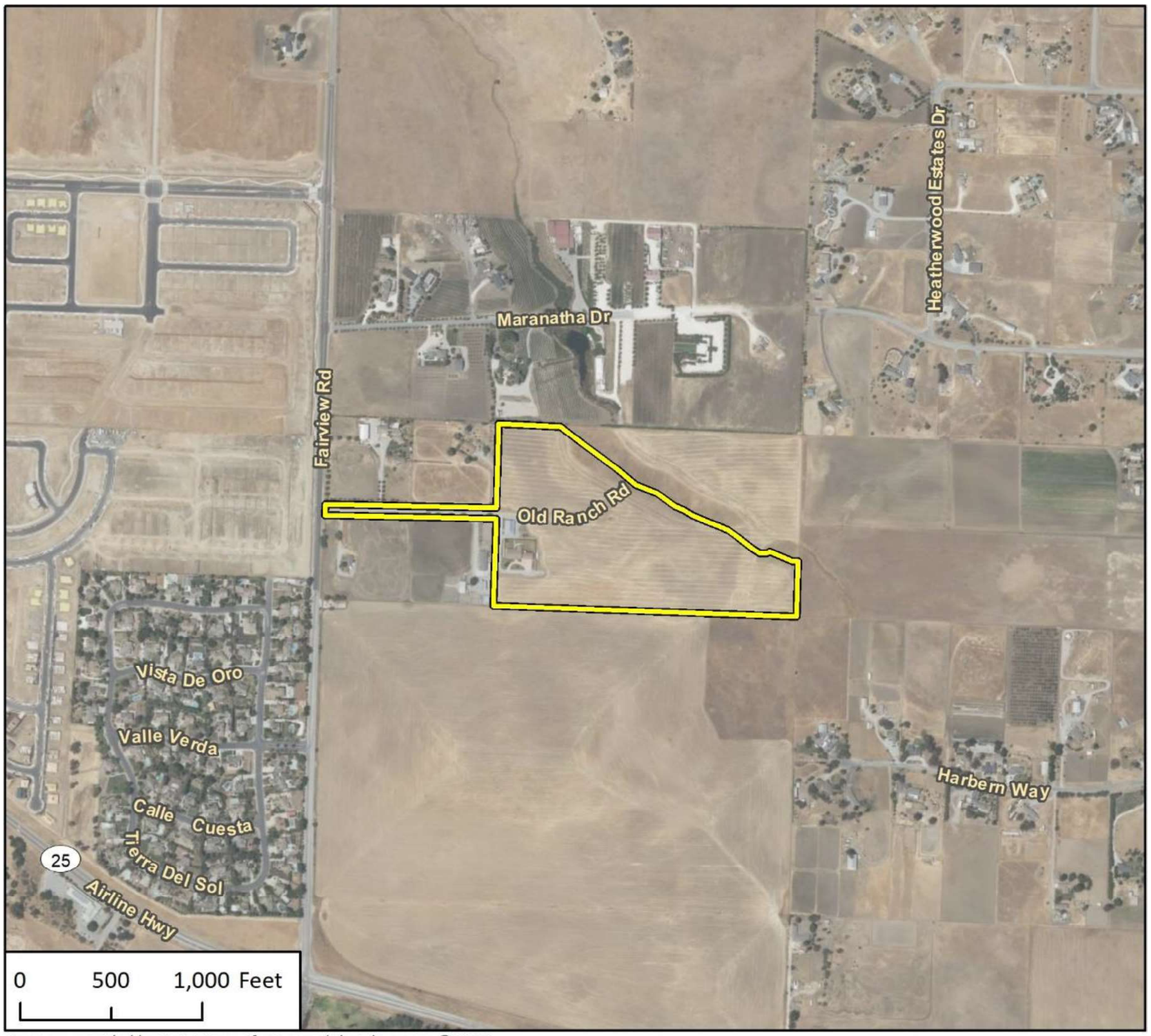
Rincon Consultants, Inc.

Leanna Flaherty

Leanna Flaherty, MA, RPA
Cultural Resources Project Manager

Attached: Project Location Map

Project Location Map



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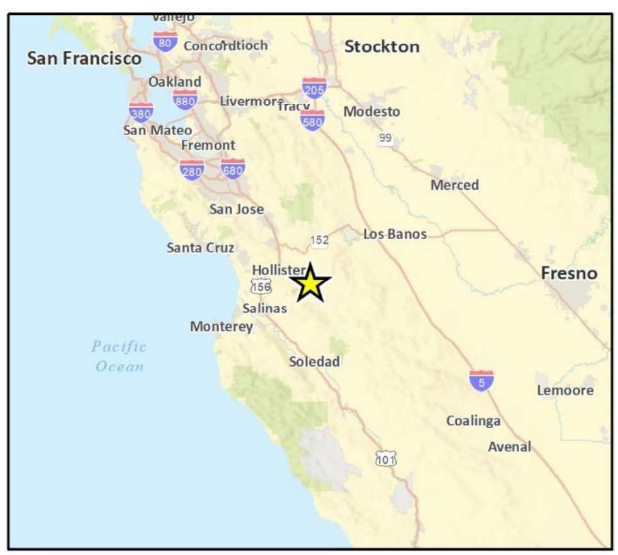

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Monterey, California 93940

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February 7, 2022

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, California 95024
Via email: ams@indiancanyons.org

Subject: **Cultural Resources Assessment for the San Benito County Lee Subdivision Project, San Benito County, California**

Dear Chairperson Sayers:

Rincon Consultants, Inc. has been retained by KB Homes to conduct a cultural resources assessment for San Benito County's proposed Lee Subdivision (Project). The project site is located at 291 Old Ranch Road, which connects to Fairview Road approximately 0.5-mile north of Airline Highway/SR 25, in unincorporated San Benito County (APN 025-320-004). The site is bordered by low density single-family residences to the north and west, and open space to the east. The project applicant is proposing a 141-lot subdivision with subsequent residential development (with 141 residential units and 25 ADUs) on the approximately 27.5-acre site. The proposed development would include 20 affordable lots containing paired duets; located throughout the project site.

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Cultural Resources Project Manager

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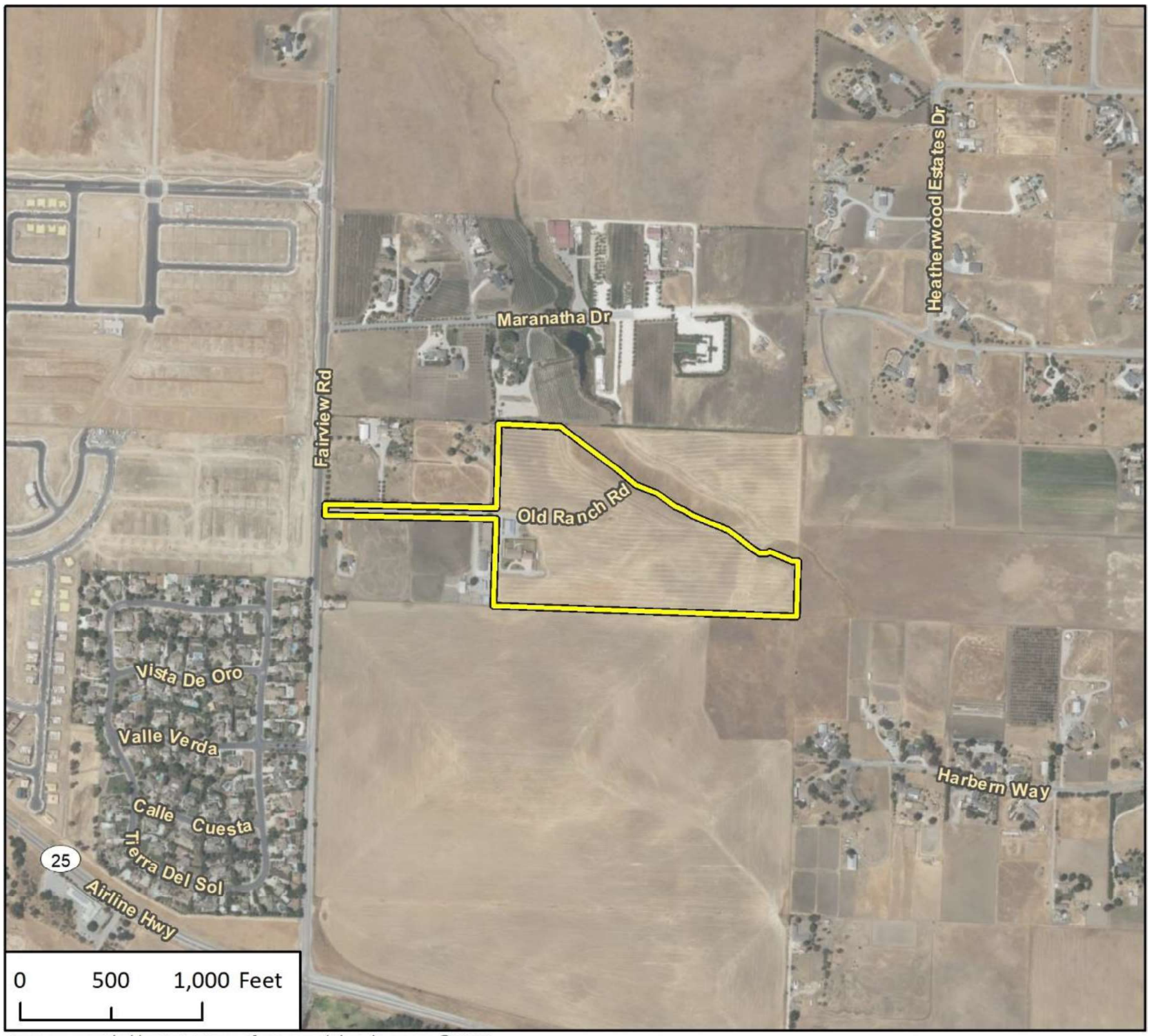

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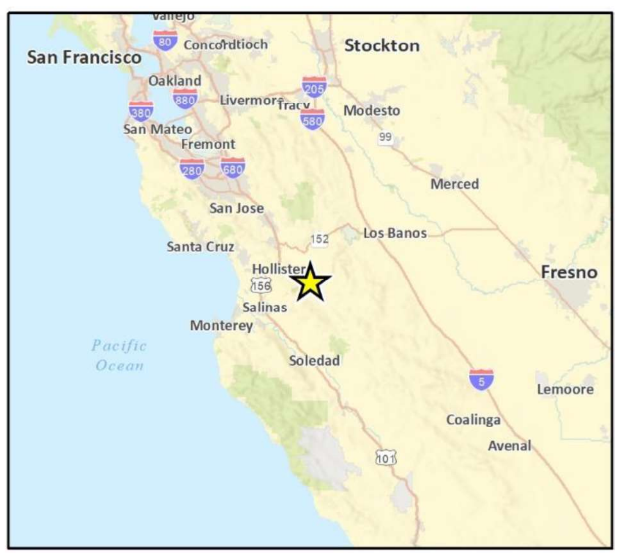

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Monterey, California 93940

831 333 0310 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

February 7, 2022

Kanyon Sayers-Roods
Indian Canyon Mutsun Band of Costanoan
1615 Pearson Court
San Jose, California 95122
Via email: kanyon@kanyonkonsulting.com

Subject: Cultural Resources Assessment for the San Benito County Lee Subdivision Project, San Benito County, California

Dear Ms. Sayers-Roods:

Rincon Consultants, Inc. has been retained by KB Homes to conduct a cultural resources assessment for San Benito County's proposed Lee Subdivision (Project). The project site is located at 291 Old Ranch Road, which connects to Fairview Road approximately 0.5-mile north of Airline Highway/SR 25, in unincorporated San Benito County (APN 025-320-004). The site is bordered by low density single-family residences to the north and west, and open space to the east. The project applicant is proposing a 141-lot subdivision with subsequent residential development (with 141 residential units and 25 ADUs) on the approximately 27.5-acre site. The proposed development would include 20 affordable lots containing paired duets; located throughout the project site.

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Cultural Resources Project Manager

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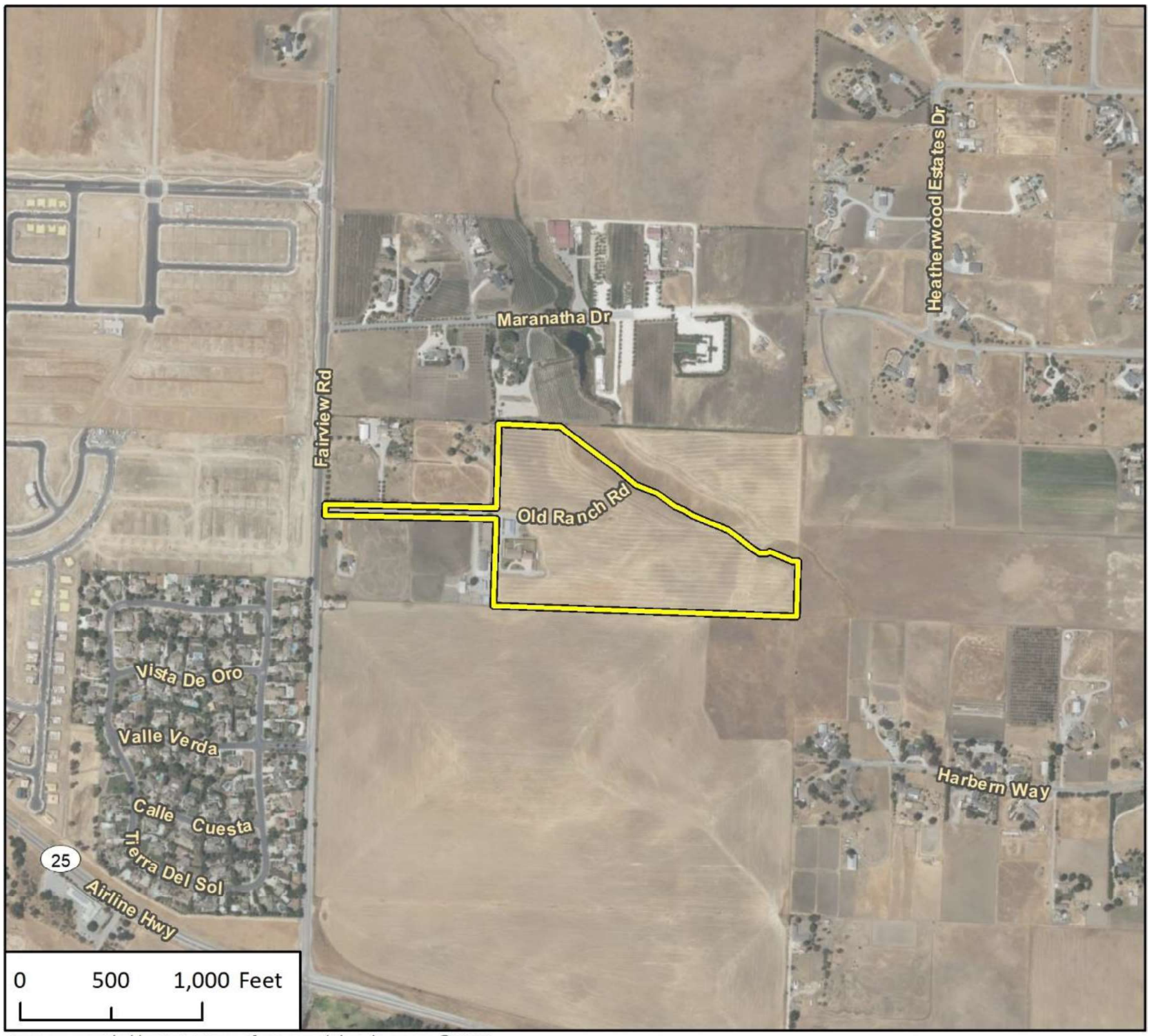

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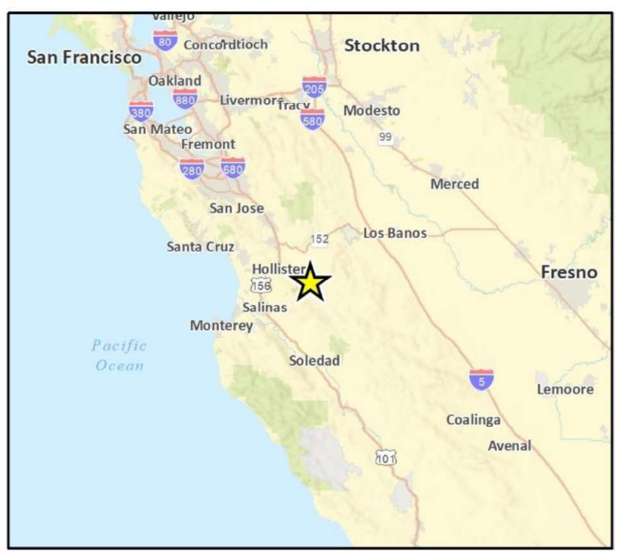

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info@rinconconsultants.com
www.rinconconsultants.com

February 7, 2022

Kenneth Woodrow, Chairperson
Wuksache Indian Tribe/Eshom Valley Band
1179 Rock Haven Court
Salinas, California 93906
Via email: kwood8934@aol.com

Subject: **Cultural Resources Assessment for the San Benito County Lee Subdivision Project, San Benito County, California**

Dear Chairperson Woodrow:

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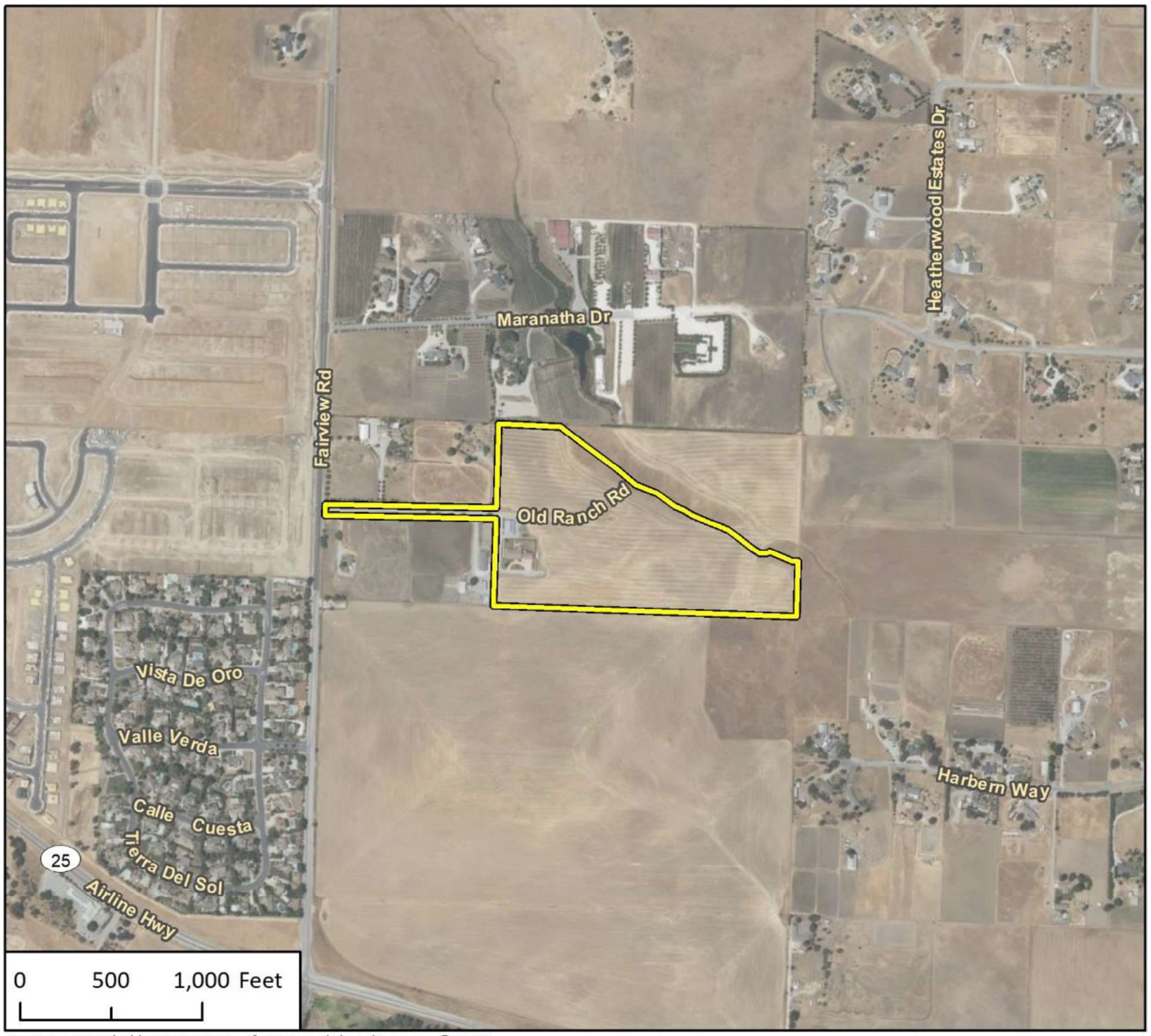

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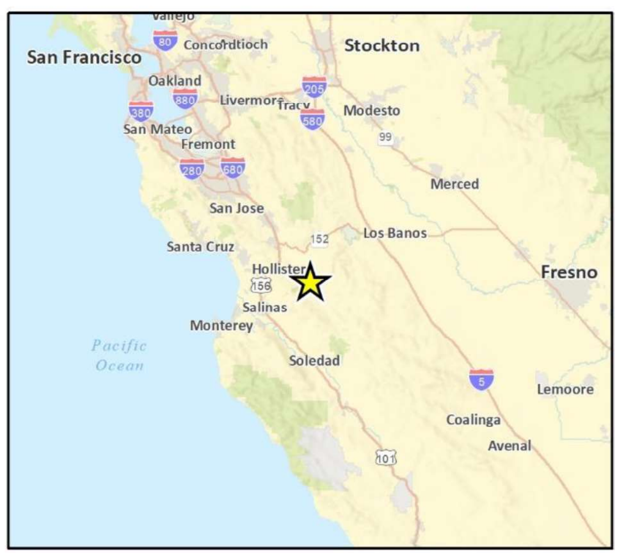

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February 7, 2022

Irene Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
3030 Soda Bay Road
Lakeport, California 95453
Via email: amahmutsuntribal@gmail.com

Subject: **Cultural Resources Assessment for the San Benito County Lee Subdivision Project, San Benito County, California**

Dear Chairperson Zwierlein:

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Sincerely,

Rincon Consultants, Inc.

Leanna Flaherty

Leanna Flaherty, MA, RPA
Cultural Resources Project Manager

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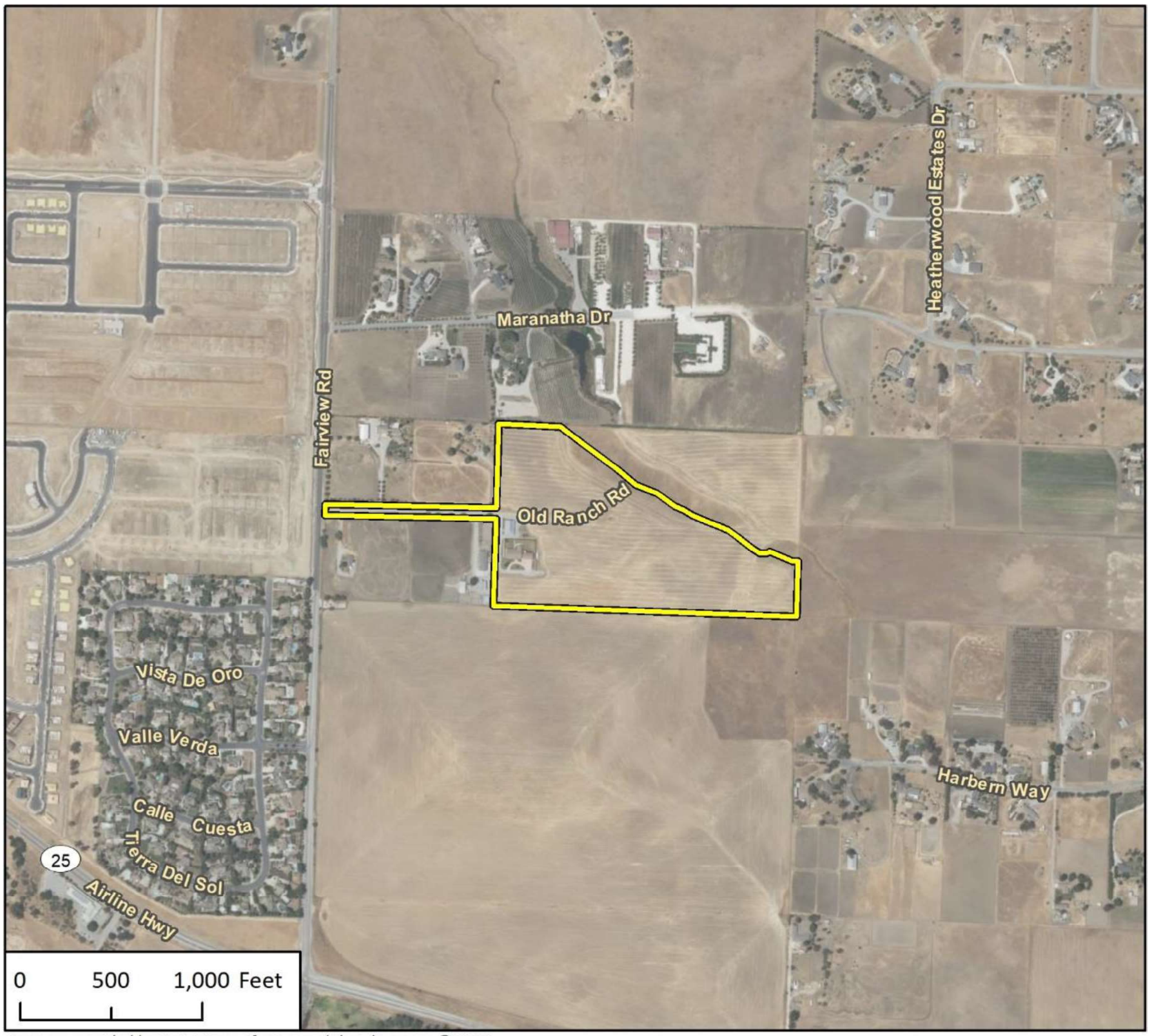

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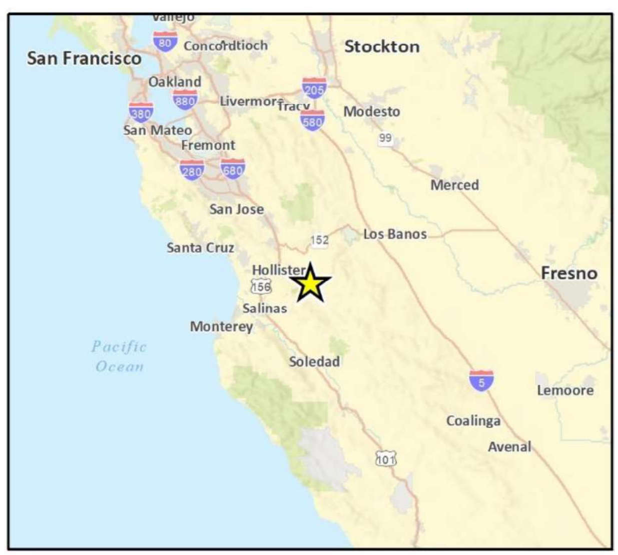

Leanna Flaherty

From: Laura Maldonado
Sent: Friday, February 18, 2022 2:50 PM
To: kwood8934@aol.com
Subject: Lee Subdivision(San Benito County) Project Outreach

Good afternoon chairperson Woodrow,

I am following up in regards to the Lee Subdivision project located in San Benito County. A letter was emailed to you on February 2nd, 2022 with further information. I attempted to leave a voicemail at your phone, but the mailbox is full. If you or your organization has any knowledge or concerns regarding cultural resources in the project area or would like to consult with the USACE as part of the Section 106 process, please respond by email to lflaherty@rinconconsultants.com (Cultural Resources Project Manager Leanna Flaherty) or by telephone at (805) 201-9621. You may also contact me directly at lmaldonado@rinconconsultants.com, or by phone (831)214-0195. Thank you!

Laura Maldonado, MA, Archaeologist
Rincon Consultants, Inc.
Environmental Scientists | Planners | Engineers
805-644-4455
831-214-0195 Mobile
805-547-0900 Direct
lmaldonado@rinconconsultants.com

Leanna Flaherty

From: Laura Maldonado
Sent: Monday, February 21, 2022 1:50 PM
To: vlopez@amahmutsun.org
Cc: Leanna Flaherty; Courtney Montgomery
Subject: Lee Subdivision Project Outreach Follow-Up

Good afternoon chairperson Lopez,
Thank you for speaking with me via telephone on February 18, 2022, regarding the Lee Subdivision Project in San Benito County. I wanted to confirm that you have no comment as of right now and that if anything is discovered, you would like to be notified to have a tribal monitor present onsite. If you have any additional questions or concerns, feel free to contact me at this email or by telephone at (831)214-0195. Thank you.

Laura Maldonado, MA, Archaeologist
Rincon Consultants, Inc.
Environmental Scientists | Planners | Engineers
805-644-4455
831-214-0195 Mobile
805-547-0900 Direct
lmaldonado@rinconconsultants.com

Leanna Flaherty

From: Laura Maldonado
Sent: Monday, February 21, 2022 1:58 PM
To: amahmutsuntribal@gmail.com
Cc: Leanna Flaherty; Courtney Montgomery
Subject: Lee Subdivision Project Outreach Follow-Up

Good afternoon chairperson Zwierlein,
Thank you for speaking with me via telephone on February 18, 2022, regarding the Lee Subdivision Project in San Benito County. I wanted to confirm your comments from our phone-call: you would like to be notified immediately if any remains are discovered, that all persons participating in digging have cultural resources sensitivity training, and that archaeological and native monitors be present during ground disturbing activities. If you have any additional questions or concerns, feel free to contact me at this email or by telephone at (831)214-0195. Thank you.

Laura Maldonado, MA, Archaeologist
Rincon Consultants, Inc.
Environmental Scientists | Planners | Engineers
805-644-4455
831-214-0195 Mobile
805-547-0900 Direct
lmaldonado@rinconconsultants.com

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Leanna Flaherty

From:	Laura Maldonado
Sent:	Friday, February 25, 2022 9:15 AM
To:	kanyon@kanyonkonsulting.com
Cc:	Leanna Flaherty
Subject:	Lee Subdivision(San Benito County) Project Outreach

Good morning Ms. Sayers-Roods,

I am following up in regards to the Lee Subdivision project located in San Benito County. A letter was emailed to you on February 2nd, 2022 with further information on the project. I attempted to give you a phone call this morning but left a voicemail. If you or your organization has any knowledge or concerns regarding cultural resources in the project area or would like to consult with the USACE as part of the Section 106 process, please respond by email to lflaherty@rinconconsultants.com (Cultural Resources Project Manager Leanna Flaherty) or by telephone at (805) 201-9621. You may also contact me directly at lmaldonado@rinconconsultants.com, or by phone (831)214-0195. Thank you!

Laura Maldonado, MA, Archaeologist
Rincon Consultants, Inc.
Environmental Scientists | Planners | Engineers
805-644-4455
831-214-0195 Mobile
805-547-0900 Direct
lmaldonado@rinconconsultants.com

Leanna Flaherty

From: Laura Maldonado
Sent: Friday, February 25, 2022 9:11 AM
To: ams@indiancanyons.org
Cc: Leanna Flaherty
Subject: Lee Subdivision(San Benito County) Project Outreach

Good morning Chairperson Sayers,

I am following up in regards to the Lee Subdivision project located in San Benito County. A letter was emailed to you on February 2nd, 2022 with further information on the project. I attempted to leave a voicemail at your phone this morning, but the mailbox is full. If you or your organization has any knowledge or concerns regarding cultural resources in the project area or would like to consult with the USACE as part of the Section 106 process, please respond by email to lflaherty@rinconconsultants.com (Cultural Resources Project Manager Leanna Flaherty) or by telephone at (805) 201-9621. You may also contact me directly at lmaldonado@rinconconsultants.com, or by phone (831)214-0195. Thank you!

Laura Maldonado, MA, Archaeologist
Rincon Consultants, Inc.
Environmental Scientists | Planners | Engineers
805-644-4455
831-214-0195 Mobile
805-547-0900 Direct
lmaldonado@rinconconsultants.com

Leanna Flaherty

From: Laura Maldonado
Sent: Friday, February 18, 2022 2:50 PM
To: kwood8934@aol.com
Subject: Lee Subdivision(San Benito County) Project Outreach

Good afternoon chairperson Woodrow,

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lmaldonado@rinconconsultants.com

Appendix D

Surface Fault-Rupture Hazard Investigation

SURFACE FAULT-RUPTURE HAZARD INVESTIGATION
ASSESSOR PARCEL NUMBER 025-320-004-000
OLD RANCH ROAD
SAN BENITO COUNTY, CALIFORNIA

for

Mr. Bill Lee
March 27, 2020

Job No. 4055.100

BERLOGAR STEVENS & ASSOCIATES

Via E-Mail and Mail

BERLOGAR
STEVENS &
ASSOCIATES

March 27, 2020
Job No. 4055.100

Mr. Bill Lee
291 Old Ranch Road
Hollister, CA 95023

Attention: Mr. Lee

Subject: Surface Fault-Rupture Hazard Investigation
Assessor Parcel Number 025-320-004-000
Old Ranch Road
San Benito County, California

Dear Mr. Lee:

Berlogar Stevens & Associates (BSA) is pleased to present this Surface Fault-Rupture Hazard Investigation for the Lee property in San Benito County, California (Vicinity Map, Plate 1), APN 025-320-004-000. The scope of services for this investigation, our findings and our recommendations with regard to building setback limits based on our subsurface exploration program are presented below.

PURPOSE AND SCOPE

Based on the mapped presence of the Tres Pinos fault in the vicinity of the site, the California Geological Survey (CGS), in compliance with the Alquist-Priolo Earthquake Fault Zoning Act (AP), has established a zone on both sides of the mapped fault trace that requires a fault investigation prior to site development. In addition, an investigation conducted south of the Lee parcel by Terratech (1989) found evidence of fault traces that project toward the southeast corner of the Lee property.

The purpose of our investigation is to evaluate the possible presence or absence of surface fault-rupture potential from fault displacement within the designated AP zone near the southwest portion of the Lee property as well as along the projection of fault traces near the southeast corner of the property (Plate 2, Site Plan). The intended outcome of the investigation is the establishment of an area where structures could be constructed that would allow for human occupancy in accordance with the provisions of the Alquist-Priolo Act.

It is our understanding that the current plan for the site includes single-family-residential development with paved streets and accompanying infrastructure although specific development plans are tentative and may change. Our report is based on conversations with you regarding the proposed development of the site, our knowledge of the geologic conditions in the area, our experience with similar projects, and the Guidelines for Evaluating the Hazard of Surface Fault Rupture, Note 49 published by the CGS (2002).

SITE CONDITIONS

The approximately 40-acre rectangular Lee property is located at the east terminus of Old Ranch Road, about 2,500 feet north of the intersection of Fairview Road and Highway 25 in an un-incorporated portion of San Benito County. The site ranges in elevation from about 535 feet above mean sea level (msl) near the center of the property to about 455 feet above msl where a northwest trending drainage swale intersects the north property line. The drainage swale enters the parcel near the midpoint of the east property line and drains toward the northwest, leaving the property about the midpoint of the property's north property line. The parcel contains a single-family residence and a barn near where Old Ranch Road enters the property. Except for the part of the property currently occupied by the residence and barn, the property consists of gently rolling hills that have been used for growing feed crops. The coordinates of a point near the approximate center of the project site are latitude: 36.8381 N and longitude: 121.3574 W.

The 1986 CGS Seismic Study Zone (SSZ) Tres Pinos quadrangle shows that the Tres Pinos fault may extend into the southwest portion of the property. The CGS map shows the northwest trending fault on the property as queried indicating that the presence and location the fault are uncertain. Because of the possible existence of an active fault on the property, the CGS has established an approximately 600-foot wide SSZ that requires investigation of potential fault activity prior to site development.

A geotechnical and fault investigation report prepared by Terratech (1989) on property adjacent to and south of the Lee property suggests that the Tres Pinos fault may curve to the northeast and project toward the east boundary of the Lee property. The recommended building exclusion zone shown on the Terratech (1989) geologic map is about 200 feet wide centered on the fault trace. The projection of the Terratech fault trace indicates that southeast area of the Lee property should also be investigated for fault activity.

SCOPE OF SERVICES

Our scope of services for this surface fault-rupture hazard investigation included the following.

1. Researched published and unpublished geologic literature and reports in our library pertaining to the property and vicinity.
2. Reviewed readily available aerial photographs covering the site and conducted site reconnaissance by our engineering geologist to evaluate geomorphic features that may relate to fault activity.
3. Scheduled the excavation subcontractor, safety materials, field personnel, and county geologic peer reviewer.
4. Excavated and logged exploratory trenches up to depths of about 15 feet. Two initial trenches totaling 1,100 linear feet were excavated to explore possible presence or absence of faulting in the southwest and southeast portions of the property. Additional trenching was undertaken to evaluate areas of concern beyond the initially proposed trenches.

5. Handpicked the trench walls to remove excavator-bucket smearing to allow mapping of soil stratigraphy at a scale of 1-inch equals 5 feet. The trenches were benched for safe entry by the geologist and technicians.
6. Notified the county's geologic peer reviewer of our field schedule so that he could view the open trenches.
7. Conducted a site meeting for evaluation of soil chronology with Dr. Glenn Borchardt, of Soil Tectonics, and with the County of San Benito's peer review geologist, John Feltman with Earth Systems.
8. At completion of exploration and logging, the trench ends and identified fault trace(s) were surveyed by a licensed surveyor.
9. Due to the rains that occurred near the end of the investigation, some of the trenches were left open and will be backfilled with the excavated soils as the area becomes more accessible.
10. Prepared this report including our findings and conclusions.

Our study was limited to evaluation of potential fault related ground rupture and does not include study of seismic shaking, other geologic hazards, or the geotechnical and environmental aspects of site development.

GEOLOGIC SETTING

REGIONAL GEOLOGY

The San Francisco Bay Area, and the San Juan Valley and Hollister Valley, in which the Lee property is located, lie within the Coast Ranges geomorphic province. This province consists of a series of discontinuous northwest trending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting. The general geologic framework of the San Francisco Bay Area is illustrated in studies by Jenkins, 1973, Hart and Bryant (2007), Allen (1946), Schlocker (1970), Chin and others (1993), Graymer and others (2006), and the California Geological Survey (CGS, 2002), included as the Regional Geologic Map (Plate 4, Regional Geologic Map), among others.

Geologic and geomorphic structures within the Hollister Valley and the greater San Francisco Bay Area are dominated by the San Andreas fault system, a right-lateral strike-slip transform boundary that extends from the Gulf of California in Mexico, to Cape Mendocino in Humboldt County, California. It forms a portion of the boundary between two independent tectonic plates. To the west of the San Andreas fault system is the Pacific plate, which moves north relative to the North American plate, which is located east of the fault system. In the greater San Francisco Bay Area, movement across this plate boundary is concentrated on the San Andreas fault; however, it is also distributed across a number of faults that include the Calaveras, Hayward, San Gregorio, Paicines, Zayante-Vergeles, and Quien Sabe among others. Together, these faults are referred to as the San Andreas fault system. Movement along this fault system has been ongoing for about the last 25 million years. The northwest trend of the faults within this system is largely responsible for the strong northwest structural grain of geologic and geomorphic features in the San Francisco Bay Area as well as the lower Santa Clara and San Juan Valleys.

Basement rocks east of the San Andreas fault system consist of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks of the Franciscan Complex of Jurassic to Cretaceous age (205-65 million years old). West of the San Andreas fault system the basement rocks consist of successive slivers of granite once associated with the Sierra Nevada - Peninsular intrusive complex (batholith) but which have been sliced by the San Andreas fault and "stretched out" to the northwest to their current position.

AREA AND SITE GEOLOGY

During Pleistocene time (before about 11,000 years ago), the 30-mile long San Juan Valley and adjoining Hollister Valley were, at different times, filled with Lake San Benito and Lake San Juan (Jenkins, 1973). The San Juan Valley is a generally northwest-southeast trending alluvium filled structural basin bounded on the north by the Lomerias Muertas and the Flint Hills, and on the south and east by the Gabilan Range. Approximately 200,000 years ago (middle Pleistocene), landslides, inferred to have been triggered by movement along the San Andreas fault, blocked the flow of water from the San Benito County area to Monterey Bay forming Lake San Benito. Later in the Pleistocene, fault movement again dammed the water flow, forming Lake San Juan (Jenkins, 1973). The sediments of Lake San Juan filled the valley to about 200 feet above sea level. The Lee property is underlain by unconsolidated layers of clay, silt, sand and gravel deposited in the ancient lake. The deposition of sediments in the Pleistocene lakes with subsequent relative uplift and erosion has formed broad alluvial terraces at differing levels. The terraces, as mapped by Dibblee (1975) and Dibblee and Minch (2006), are divided into three units based on geomorphic and elevation differences. The project site is located on the intermediate age terrace (Qoa2, Plate 5). The terrace surface has been eroded forming rolling hills and is dissected on the Lee property by a drainage swale containing Holocene alluvium. The Vicinity Geologic Map (Plate 5) shows the Lee project site relative to surface geologic features in the Hollister area.

Faulting

The project site and the southern portion of the San Juan Valley are located in an area characterized by moderate to high seismic activity. The active East Branch of the Calaveras fault lies about 2 miles southwest of the property; the active Calaveras fault lies approximately 1-1/4 miles southwest of the property; and the active San Andreas fault lies approximately 4.8 miles southwest of the property. Plate 6, Fault Activity Map, shows faults and their inferred activity in the vicinity of the Lee property. Zones along fault traces where renewed ground rupture is more likely to occur have been investigated by the California Geological Survey (CGS 1974, 1985, 2000). The Tres Pinos fault and the Calaveras fault are part of the San Andreas fault system. According to the Working Group on California Earthquake Probabilities (WGCEP, 2015) report, the San Andreas fault system in the northern California area, has a 72% probability of generating a magnitude 6.7 earthquake before 2043. Considering publications by Hart and Bryant (2007) and CGS (1986 and 2000), the project site is located within a state designated Alquist-Priolo (A-P) Special Studies Zones (SSZ, renamed Earthquake Fault Zones after January 1984) for the Tres Pinos fault (Plate 7, Alquist-Priolo Fault Zone Map) and requires geologic study before development of structures for human occupancy.

The generally northwest-trending Tres Pinos fault has been mapped as separating "Eocene shale on the southwest from Upper Cretaceous Panoche Formation on the northeast (Taliaferro, 1945, Kilburn, 1972; Dibblee, 1975; and Robbins, 1982). Fault Evaluation Reports (FER 164) prepared by the CGS (1985) for the Tres Pinos quadrangle indicates that the Tres Pinos fault was first identified by Kilburn (1972) by contouring groundwater levels. Kilburn's report states that south of Highway 25 the water table is apparently truncated against the inferred fault. The fault is projected in the FER northwest along a trend of about N45°W from the Kilburn groundwater-barrier location using a trench fault exposure by Johnson & Associates (1980). The Johnson & Associates trench, located about 2,400 feet south of the Lee property, exposed evidence of late Quaternary offset consisting of nearly vertical shears that were inferred to continue up into probable Holocene soil. Although the CGS FER indicates that north of the Johnson & Associates trench there is no geomorphic evidence of late quaternary strike-slip faulting, the fault is shown on Figure 2 of the report to extend farther north based on geomorphic lineation along hillsides. The 1985 FER indicates that the fault does not extend much beyond Fairview Road based on two trenches excavated by Terratech (1977) northwest of the Lee property. The latest update of the CGS Special Studies Zones (1986) shortens the length of the Tres Pinos quadrangle and shows a 600-foot wide zone requiring fault investigation terminating in the north about at the center of the Lee property (Plates 2 and 7).

Terratech (1989) conducted a combined geotechnical and fault investigation for the property south of and adjacent to the Lee property. Based on evidence from seven exploratory trenches, the report concludes that the Tres Pinos fault does not continue northwest as mapped by CGS (1986) but veers to the northeast and crosses into the southeast corner of the Lee property Terratech's Trench TR-3 placed about 1,000 feet south of the Lee property and within the Tres Pinos fault SSZ found an absence of faulting to a depth of about 10 feet in sediments judged to be of Pleistocene age. However, the subsurface fault exploration did not cover the full width of the SSZ. The report describes that Terratech observed a prominent photo lineament and a sag pond trending north to northeast beginning about 1,300 feet south of the Lee property. Terratech trenches TR-4, TR-6 and TR-7 were excavated in the northeast corner of the Terratech project site to explore for faulting in the area of the sag pond. Trench TR-7, located about 30 feet south of the Lee property line, revealed two to five fault traces spread over a zone of about 18 to 40 feet and trending approximately north.

HISTORICAL TOPOGRAPHIC MAP AND AERIAL PHOTOGRAPH

We reviewed readily available historical topographic quadrangles and planimetrically corrected aerial photographs (source: Google Earth) of the area to evaluate historical surface features that may relate to fault locations and areas of past fault deformation. The following table lists the topographic maps and aerial photographs reviewed for this study.

USGS Topographic Maps	
Year	Scale
1923	15 min.
1940	15 min.
1955	15 min.
2018	7.5 min.
Aerial Photographs (from Google Earth)	
Date	Source
8/16/1998	USGS
7/30/2003	AMBAG
8/26/2005	USDA, FSA
8/14/2006	USDA, FSA
10/6/2007	AMBAG
5/11/2008	Maxma Technologies
9/20/2018	Google Earth

The 1923 through 2018 USGS topographic quadrangles show the area of the Lee property to be gentle rolling hills and dissected by a drainage swale flowing about N60°W from about the midpoint of the east property line to about the midpoint of the north property line. This trend is about 30 degrees more westward than the SSZ trace of the Tres Pinos fault and appears to not be related to faulting. The mapped trace of the Tres Pinos fault aligns with ground-surface-contour lineations south of the Lee property. The rough alignment of linear topographic features south of the Lee property was evidence used by CGS (1985) to map the fault toward the northwest. A tributary to the N60°W drainage swale located west of the Lee property trends about N50°E and may be associated with the fault trace mapped by TerraTech (1989) near the southeast corner of the Lee property.

The black and white 8/16/1998 aerial photograph shows a house with adjoining landscaping near the center of the property at the end of Old Ranch Road and a barn south of Old Ranch road at the west entrance to the property. No other development on the property other than perimeter fencing is noted. Standing water appears to be present in the drainage swale near the north property line and in the low area at the south property line about 350 feet west of the southeast property fence corner. The property appears to be mostly cattle-graze land and unplowed in August 1989.

The October 6, 2007 color aerial photograph shows extensive grading apparently in an effort to level the southwest portion of the property. The photograph shows that the residence that was present at the time of our site investigation was under construction. The house and other structures near the center of the property have been removed. Later aerial photographs (5/11/2008 through 9/20/2018) show the property under cultivation for hay, and a gravel driveway leading from Old Ranch Road to the south side of the new residence has been added.

A faint tonal lineation near the southeast corner of the Lee property trending about N43°E is noted on the 9/20/2018 aerial photograph. The trend of the lineation aligns with a NE trending drainage swale on adjacent property to the east of the Lee property that is tributary to the larger drainage crossing through the Lee property. Pertinent features noted in the topographic-quadrangle and aerial-photographic reviews that may be associated with faulting were investigated further in our subsurface-trench investigation.

SITE RECONNAISSANCE

A Certified Engineering Geologist (C.E.G.) representing BSA conducted reconnaissance of the site and surrounding vicinity between November 18, 2019 and December 14, 2019. The purpose of the reconnaissance were to observe surface conditions that may relate to fault activity. No standing water was present during our sites visits in the swale traversing the property nor in the low area near the south property line. The area southwest of the drainage swale with the exception of the residence and barn and the area northeast had been recently disked and had exposed hay stubble. No surface evidence of faulting was noted during the reconnaissance.

SUBSURFACE EXPLORATION

SOIL AGE EVALUATION

Dr. Glenn Borchardt of Soil Tectonics was invited to examine Trench T-4, collect samples for pedochronological laboratory analysis, and prepare a report describing the paleosol layers and estimating the ages of the soils. Soil Tectonics' *Pedochronological Report For The Lee Property, Old Ranch Road, Hollister, California* describing the soil column and estimated ages to the depth of about 8 feet is attached (Appendix A). The report indicates that the natural soils below a depth of about 33 inches were judged to have formed during the mid-Wisconsin interglacial period. According to the Soil Tectonics' report, Trench T-4 exposed paleosols below the overlying fill that were deposited about 40,000 years ago (during Pleistocene time).

EXPLORATORY TRENCHING

Six exploratory trenches, totaling about 1,700 linear feet, were excavated with a track-mounted excavator using a 3-foot-wide bucket. The locations of the trenches are shown on the Site Plan, Plate 2. The trenches were examined and logged at a scale of 1-inch equals 5-feet to evaluate and document the shallow subsurface strata and soil structure. The side walls of the trench were stepped in approximately four-foot high benches to allow safe entry of personnel. The north wall of each trench (as well as the south wall where needed to further observe notable features) was picked with hand tools to remove excavator-bucket smear and to expose soils and related features for geologic observation and logging. During excavation and logging of the exploratory trenches, John Feltman of Earth Systems was present periodically to review our findings in the trenches as they were logged.

Groundwater was not encountered in the six trenches (ranging up to 15 feet in depth). Fluctuations in the groundwater level can be expected with changes in seasonal rainfall, urbanization, construction activities or other factors at or in the vicinity of the site. At the completion of trenching operations, the ends of the six trenches, and the exposed fault traces in Trench T-2, were staked. The RJA Survey dated November 21, 2019 shows that the east end of

Trench T-2 is located near the east property line. The RJA Survey also shows that the project site's east property line is about 40 feet west of the east fence line (RJA Field Survey Data, Plate 3). The trenches were partially backfilled by pushing the excavated material back into the trenches.

TRENCH STRATIGRAPHY

Trench T-1

Trench T-1 was excavated beginning about 100 feet from the property's west property line and offset about 50 feet north of the south property line. The trench extended about 770 feet along an EW trend parallel to the south property line. The location of the trench was selected to investigate possible faulting along the CGS mapped trend of the Tres Pinos fault within the SSZ. The graphic log of Trench T-1 is presented on Plate 8, Trench Logs T-1 and T-2. The near surface material in Trench T-1, to a depth of up to about 1 foot, is dark gray-brown, sandy clay. This upper soil has been disturbed by disking and plowing. Below the agriculturally disturbed soil, between Stations 0+30 and the east end of the trench, layers of fill up to a depth of about 10 feet were encountered. The fill varies in thickness and consist of mixed layers of stiff to hard, light to dark brown and medium brown to light tan silty clay. Based on aerial photographic interpretation, the fill appears to have been placed in 2007 at about the same time as the existing residence on the property was under construction.

Below the fill from the west end to the trench to about Station 1+00, stiff to hard, medium to light orange sandy clay overlying loose, fine- to coarse-grained cobbly, gravelly sand was encountered. Stratigraphically below these units from about Station 0+70 to about 7+30, the paleosols consist of interfingering layers of stiff to hard sandy clay and gravelly sandy clay with abundant calcium carbonate. Beneath these layers from near Station 7+30 to about 7+55 dark orange-red, hard gravelly sandy clay was exposed. The Pleistocene strata in Trench T-1 interfinger with each other forming a continuous, uninterrupted and undisturbed sequence without evidence of faulting for the 760-foot length of the trench.

Trench T-2

Starting about 50 feet from the east fence line and offset about 50 feet from the south fenceline, Trench T-2 was excavated for about 235 feet along an EW trend parallel with the south fence line (Plate 2 and Plate 8, Trench Logs T-1 and T-2). The purpose of the trench was to investigate the possible presence or absence of the series of fault traces observed by Terratech (1989) in their Trench TR-7 located south of the southeast corner of the Lee property. Beneath an up to about 2-foot thick layer of disked soil, calcium carbonate rich strata (Pleistocene deposits) were encountered to the depth of the trench at about 12 feet between the east end of the trench to about Station 2+00. These Pleistocene deposits consist of sandy silty clay, fine grained sand, clayey sand, cobbly and gravelly sand with warm colors ranging from medium to dark red and orange-brown to medium tan. West of about Station 2+00 recent alluvium in an erosional swale was encountered.

Between Station 0+18 and Station 1+05, the Pleistocene beds were found to be disrupted and offset by faulting. In this approximately 90-foot wide zone, three fault traces were identified that trend N52°E to N60°E and vary in dip from 67° to the east near the base of the trench to vertical. None of the three identified faults display gouge, slickensides or other features commonly associated with faulting, suggesting that these features were near the surface during the time of fault movement. The fault near Station 0+95 juxtaposes sandy clay on the east with fine-grained sand on the west. This fault trace appears to extend up to the overlying tilled soil layer. The fault near Station 0+50 exhibits tight folding of a medium orange, hard sandy clay layer. The fault trace near Station 0+20 was identified by contrasting sedimentary composition through a distance of about 10 feet on both north and south trench walls. The sandy clay material within this 10-foot area near Station 0+20 appeared to be vertically sheared along a trend of N58°E.

Trench T-3

Offset Trench T-3 was excavated about 50 feet north of Trench T-2 to explore for the possible northward extensions of the fault traces observed in Trench T-2. The trench began about 50 feet from the east fence line and extended about 100 feet along about an EW trend (Site Plan and Plate 9, Trench Logs T-3 through 6). Beneath the tilled soil layer, generally horizontal, uninterrupted beds of Pleistocene sediments were observed the full length of the exposed trench walls. A 6- to 12-inch thick layer of fine-grained sand between sandy clay deposits about 5½ to 7½ feet deep displayed only gentle undulations with no fault displacement features. The Pleistocene beds in Trench T-3 appear to thicken north from Trench T-2 and correlate best with beds in Trench T-2 west the fault rupture near Station 1+00.

Trench T-4

The 65-foot long Trench T-4 was excavated about 50 feet north of Trench T-1 to confirm the continuous and uninterrupted sedimentary layers at the base of Trench T-1 near Station 3+60. Because the Tres Pinos fault trace as mapped by CGS (1986) trends about N 30°W, the area explored by T-4 was located along the northwest projection of that trend. As in Trench T-1, the fill layers in Trench T-4 are approximately horizontal but extend only to a depth of about 4 feet. Below the fill, layers of Pleistocene sediments extend continuously and unfaulted for the length of the trench (Plate 9, Fault Trench Logs T-3 through 6).

Trench T-5

Trench T-1 fell short of reaching the northeast boundary of the SSZ. Trench T-5 was excavated from near the east end of Trench T-1 toward the northeast in order to intersect the boundary of the SSZ (Plate 2 and Plate 9, Fault Trench Logs T-3 through 6). The trend of Trench T-5 was N44°E from its overlap with Trench T-1 (Stations 0+00 to 0+04) about to Station 0+70 there it turned to N80°E for the remainder of its 115-foot length. The stratigraphic layers mapped at the east end of Trench T-1 continue through Trench T-5. The fill layer beneath the tilled soil thickens somewhat in southwest end of Trench T-5 and then pinches out near the bend in the trench at about Station 0+75. At a depth of about 9 feet in Trench T-5, the gravelly sandy clay observed in Trench T-1 has less clay and is described as very loose gravelly sand.

The Pleistocene strata beneath the fill layer mapped in Trench T-1 continue in Trench T-5 until interrupted by an about 16-foot-wide (measured on the north and south trench walls) zone of relatively homogeneous sandy clay between about Stations 0+30 and 0+46 (possibly backfill of a prior excavation). The sandy clay zone was surrounded on all sides and underneath by Pleistocene age beds. Northeast of the interrupting deposit, the Pleistocene layers continue until reaching the end of the trench. On the south wall of the trench (Plate 9) the Pleistocene age loose gravelly sand bed extends beneath the deposit without interruption. The nearly vertical southeast side of the deposit on the trench's south wall exhibits a sharp and distinct contact with surrounding strata. The contact strikes obliquely to the trench at N82°W. The horizontal width of the interrupting deposit measured perpendicular to its strike is about 3 to 3½ feet. This feature was confirmed by the property owner, Mr. Bill Lee, to be a soils-profile exploratory pit that was excavated in 2007 for a potential septic system. Based on 1) the presence of Pleistocene age bedded material that is continuous around and beneath the deposit, 2) the horizontal width of the deposit perpendicular to its strike approximating a three-foot wide backhoe bucket, 3) confirmation by the property owner of a soil profile pit at this location, and 4) the absence any fault related features, the fill deposit is interpreted to be backfill placed in an exploratory test pit.

Trench T-6

Trench T-6 was excavated to examine deeper materials logged in Trench T-1 between Stations 4+70 and 5+20. The approximately 130-foot long trench was located about 50 feet north of and parallel to Trench T-1 to confirm the continuous and uninterrupted sedimentary layers at the base of Trench T-1. The trench was extended to the west beyond the 4+70 and 5+20 Trench T-1 stations to accommodate the N30°W trend of the CGS mapped Tres Pinos fault (Plate 9).

As in Trench T-1, the fill layers in Trench T-6 are approximately horizontal but extend only to about 4 feet deep. Below the fill, layers of Pleistocene sediments observed in Trenches T-1 extend continuously and unfaulted for the length of the Trench T-6 (Plate 9).

CONCLUSIONS AND RECOMMENDATIONS

The approximately 40-acre rectangular Lee property is partially within a California Geological Survey Seismic Study Zone (SSZ) for the Tres Pinos fault. In addition, the projection of the fault zone described in the 1989 Terratech report is toward the Lee property's southeast corner. To evaluate the possible presence or absence of faulting in the mapped SSZ and in the southeast corner of the property, Berlogar Stevens & Associates conducted the surface-fault rupture investigation described in this report.

We reviewed historical topographic quadrangles and aerial photographs, and conducted surface-geologic reconnaissance of the site and vicinity. This phase of our study found that linear topographic features south of the Lee property and a faint tonal lineation in the southeast corner of the property might be associated with fault rupture. The possibility of fault rupture on the project site based on these surface observations was addressed by our subsurface fault investigation.

Based on our subsurface exploration in Trenches T-1, T-4, T-5, and T-6, located in the southwest portion of the Lee property, we conclude that there is no evidence of faulted Pleistocene strata in the area of these trenches and consequently there is only a low probability of surface fault rupture on the within the CGS Special Studies Zone. This conclusion that the active Tres Pinos fault does not cross into the Lee property as mapped by the CGS concurs with the results of the 1989 Terratech report for the property immediately south of the Lee property.

The Terratch report concluded that subsurface evidence south of the Lee property shows that the Tres Pinos fault bends to the northeast and projects toward the southeast corner of the Lee property. The report indicates that in the Terratech project area the fault splays into multiple traces that displace Pleistocene age alluvial deposits. Although Terratech states that the fault traces do not displace younger colluvial and lacustrine deposits judged to be of Holocene age, Terratech nonetheless considered the fault traces to be potentially active.

To evaluate the possible presence of faulting near the southeast corner of the Lee property, we excavated and logged Trenches T-2 and T-3. Trench T-2 (Plate 8) revealed three fault traces trending about N60°E to N52°E. These faults are approximately in line with and are inferred to be continuations of faults mapped by TerraTech south of the project property. To evaluate if the faults identified by Terratech south of the Lee property extend beyond Trench T-2 to the north, we located offset Trench T-3 about 50 feet north of and parallel to Trench T-2. Trench T-3 showed that the fault traces in Trench T-2 did not continue north as far as Trench T-3. Consequently, we concluded that the fault traces identified by Terratech south of the Lee property and observed in CGS Trench T-2 either terminate between Trench T-2 and T-3 or trend off the project property to the northeast.

Since native Holocene materials are not present in the area of Trench T-2, the age of latest fault movement of these fault traces cannot be determined. However, because these faults are located in the San Juan Valley, an area of moderate to high seismic activity, they should be considered potentially active. We recommend that a building exclusion zone be established southeast of a N60°E trending line set 50 feet northwest of the fault trace observed at about Station 1+10 in Trench T-2. The recommended Building Exclusion Zone is depicted on Plate 2.

LIMITATIONS

The conclusions and recommendations in this report are based upon the information provided to us regarding the proposed project, subsurface conditions encountered at the exploratory trench locations, documents and maps in our files, review of readily available published and unpublished consultant's reports, and professional judgment. This study has been conducted in accordance with current professional engineering geologic standards; no other warranty is expressed or implied. Site conditions described in the text are those existing at the time of our field exploration, and are not necessarily representative of such conditions at other locations and times. If it is found during site development that subsurface conditions differ from those described herein, then the conclusions and recommendations in this report shall be considered invalid, unless the changes are reviewed, and the conclusions and recommendations are modified or approved in writing.

We trust this provides the necessary information you need for the project. If you have any questions, please contact the undersigned at (925) 484-0220. Thank you for the opportunity of providing our professional services.

Respectfully submitted,

BERLOGAR STEVENS & ASSOCIATES

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Attachments:
- References
- Plate 1 - Vicinity Map
- Plate 2 - Site Plan
- Plate 3 – RJA Field Survey dated 11/21/19
- Plate 4 - Regional Geologic Map
- Plate 5 - Vicinity Geologic Map
- Plate 6 – Fault Activity Map
- Plate 7 –Alquist-Priolo Fault Zone Map
- Plate 8 – Trench Logs T-1 and T-2
- Plate 9 – Trench Logs T-3 through T-6

Appendix A – Pedochronological Report

Copies: Addressee (4)

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REFERENCES

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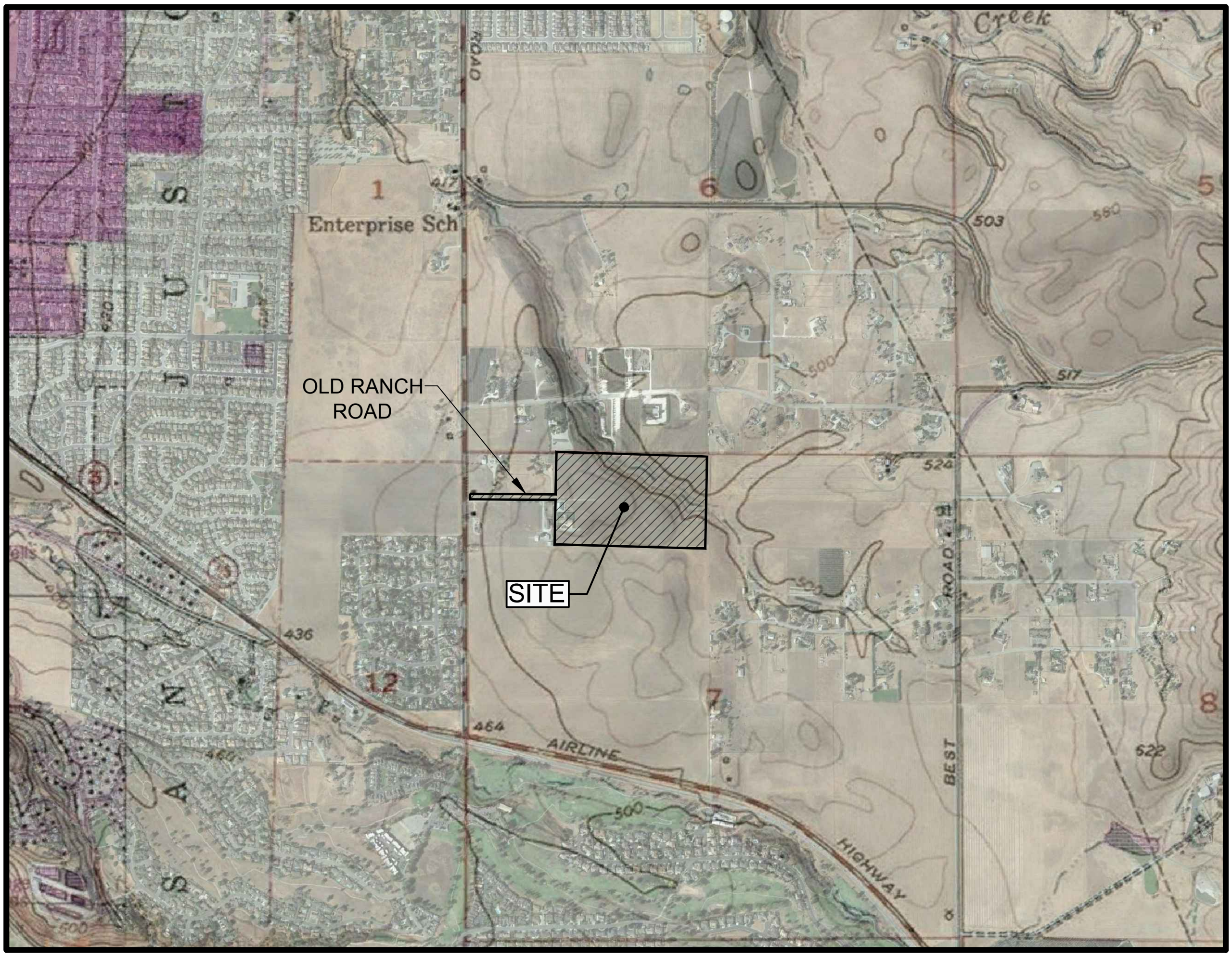
PLATES

JOB NUMBER: 4055.100 DATE: 1-3-20 BY: CC



0 2000

1"=2000'

VICINITY MAP

291 OLD RANCH ROAD

HOLLISTER, CALIFORNIA

FOR

BILL LEE

BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, TRES PINOS, CALIFORNIA, PHOTOREVISED 1983, AT A SCALE OF 1:24,000.

PLATE 1

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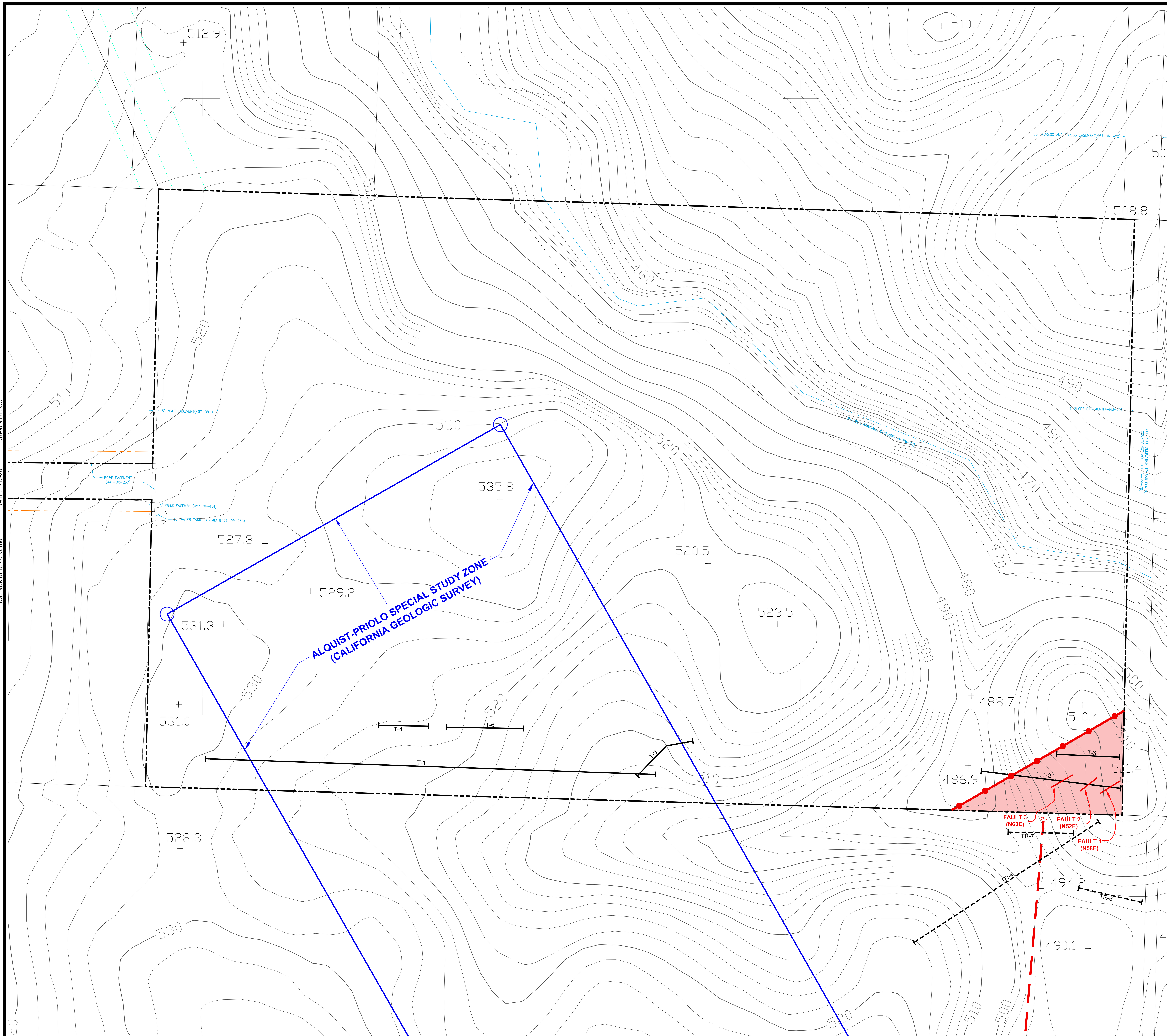
DATE: 1-13-20
JOB NUMBER: 4055.100



N

SCALE: 1"=50'

EXPLANATION

PROJECT BOUNDARY

T-6 TRENCH LOCATION (THIS STUDY)

TR-7 APPROXIMATE TRENCH LOCATION (TERRATECH 1989)

APPROXIMATE LOCATION OF FAULT TRACE IDENTIFIED BY TERRATECH

FAULT SETBACK LINE

BUILDING EXCLUSION ZONE

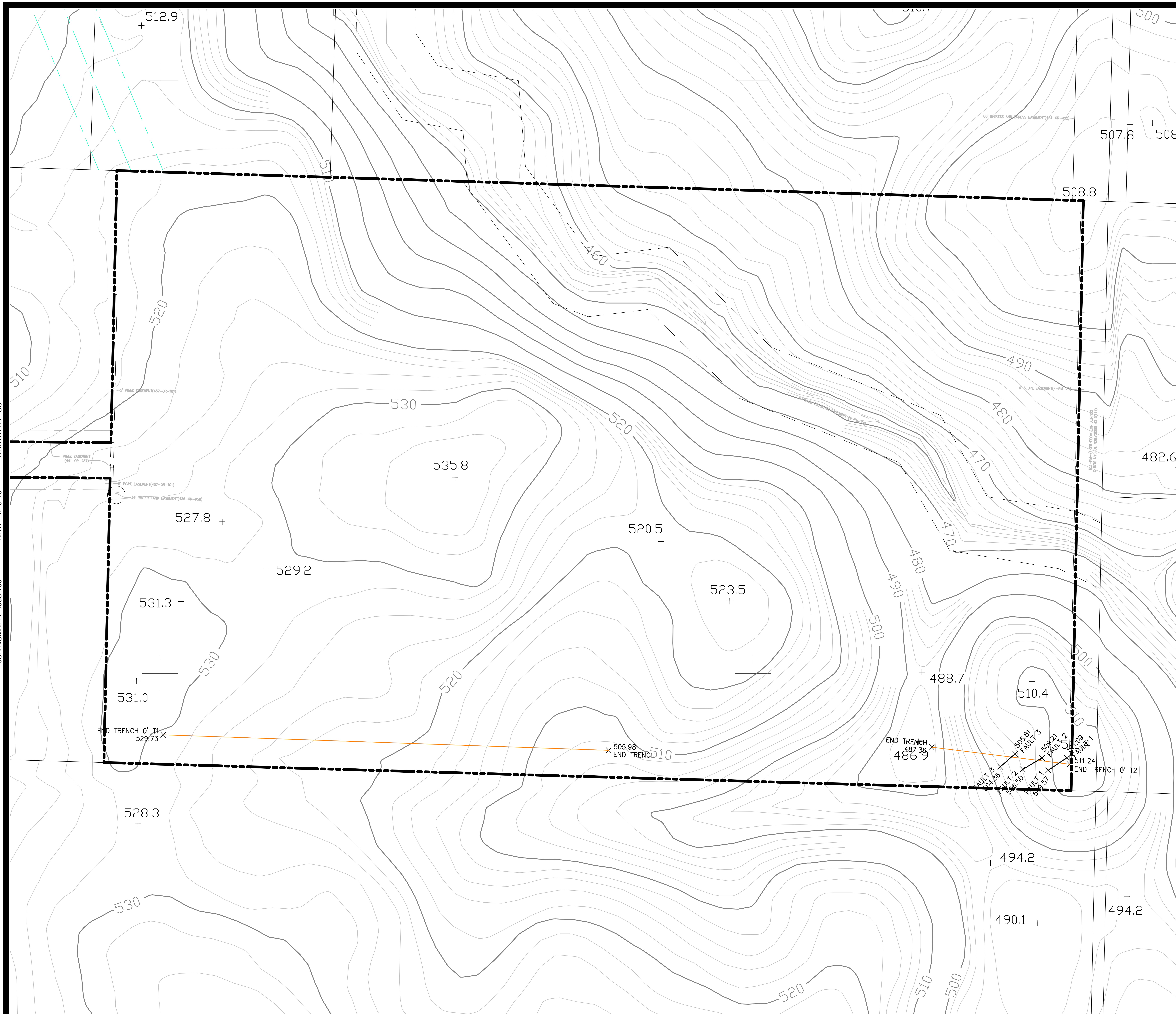
SITE PLAN

LEE PROPERTY

291 OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

Berlogar Stevens & Associates
SOIL ENGINEERS * ENGINEERING GEOLOGISTS

PLATE 2



N

0 50 100 200

SCALE: 1"=100'

EXPLANATION

PROJECT BOUNDARY

FAULT 3 504.36 RJA FIELD SURVEY POINT (DATED: 11-21-19)

RJA FIELD SURVEY DATED 11-21-19

LEE PROPERTY

291 OLD RANCH ROAD

HOLLISTER, CALIFORNIA

FOR

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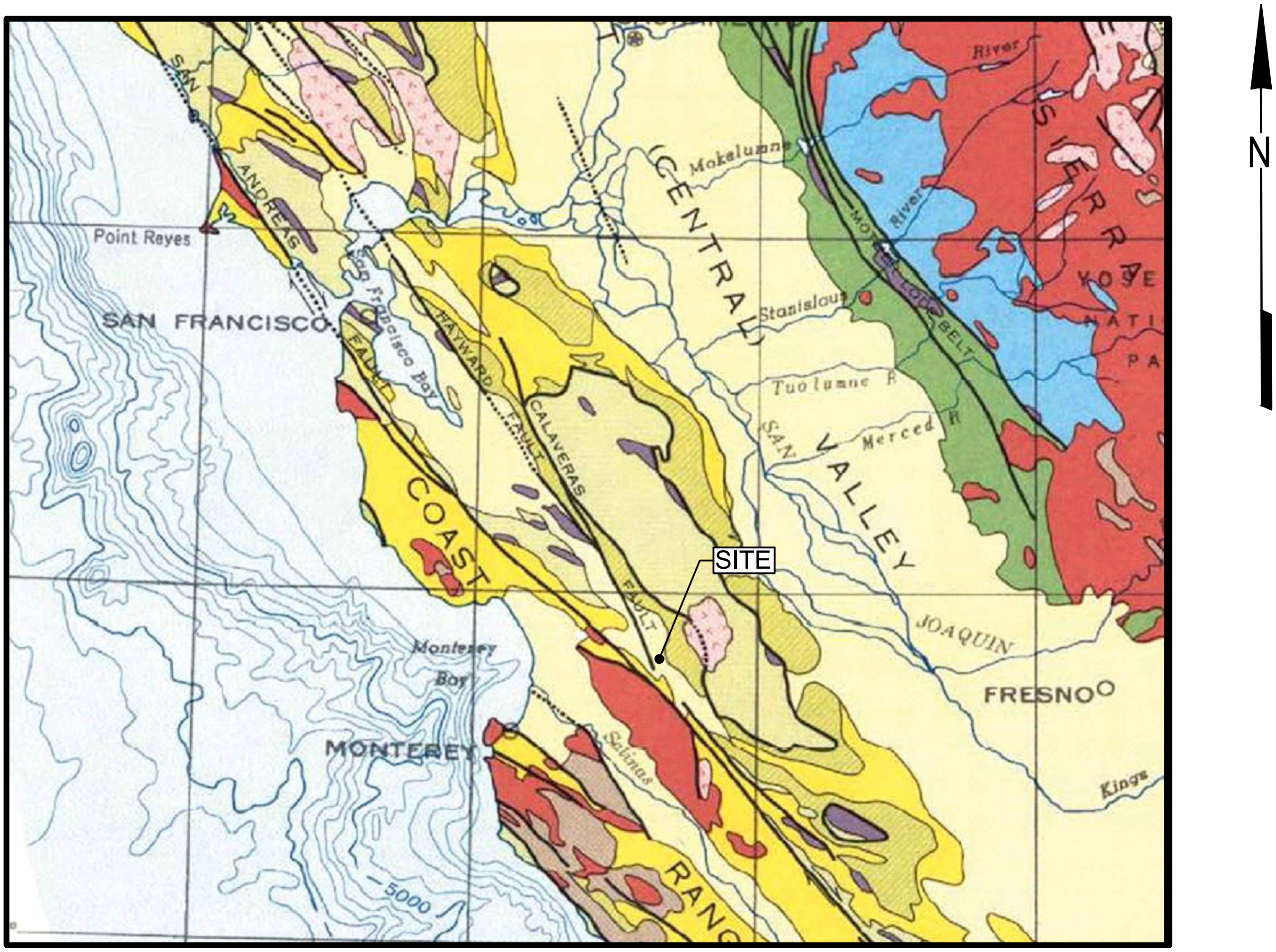
JOB NUMBER: 4055.100 DATE: 12-3-19 DRAWN BY: CC

JOB NUMBER: 4055.100 DATE: 1-3-20 BY: CC



0 20 MILES

1"=20 MILES

EXPLANATION
of units in SF Bay Area

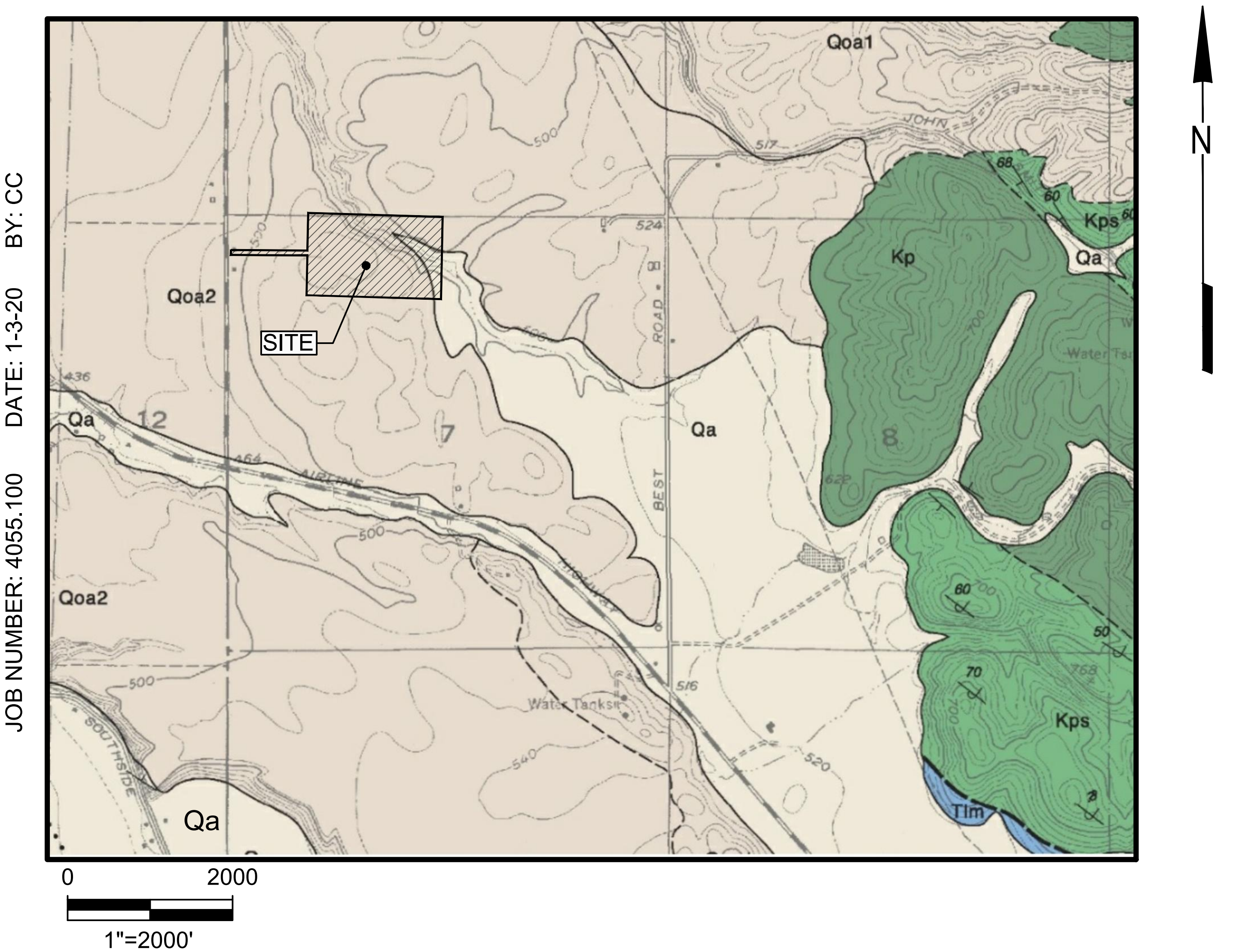
- Cenozoic nonmarine
- Cenozoic marine
- Late Mesozoic shelf and slope
- Late Mesozoic of the Franciscan Formation
- Mesozoic Granitic rocks
- Mesozoic Ultramafic rocks
- Fault, dotted where concealed, arrows indicate direction of movement

REGIONAL GEOLOGIC MAP

291 OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

BASE: CGS, 2002, GEOLOGIC MAP OF CALIFORNIA

JOB NUMBER: 4055.100 DATE: 1-3-20 BY: CC



EXPLANATION OF SYMBOLS

Qa	SURFICIAL SEDIMENTS
	OLDER SURFICIAL SEDIMENTS
Qoa1	OLDEST, HIGHEST ALLUVIAL TERRACE
Qoa2	INTERMEDIATE ALLUVIAL TERRACE
Tlm	LOS MUERTOS SHALE

PANOCHE FORMATION

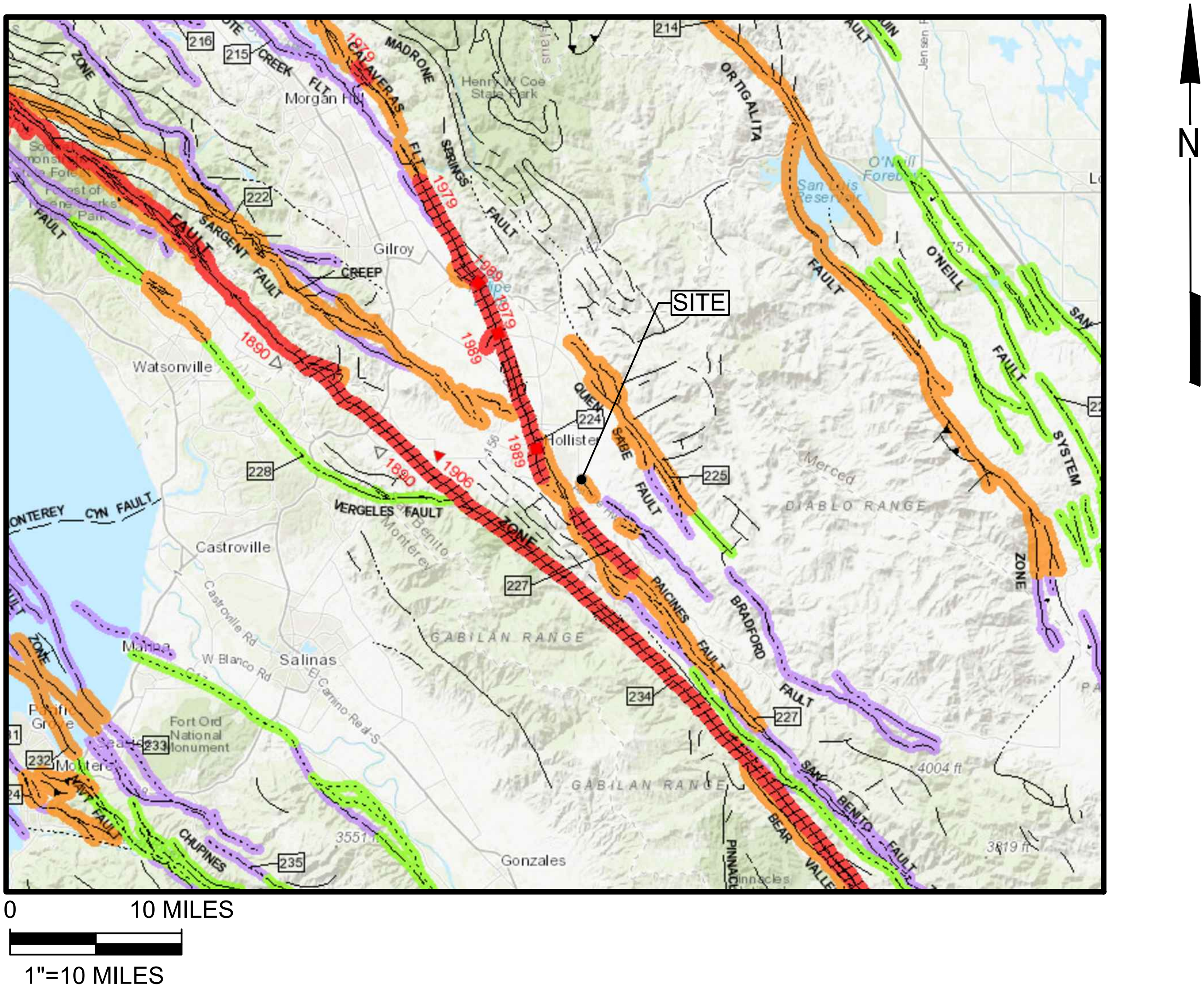
Kp	CLAY SHALE OR CLAYSTONE
Kps	SANDSTONE

VICINITY GEOLOGIC MAP

291 OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

BASE: PORTION OF GEOLOGIC MAP OF THE TRES PINOS QUADRANGLE, SAN BENITO COUNTY, CALIFORNIA, PREPARED BY: DIBBLEE, T.W., AND MINCH, J.A. (ed.), DF-232, 2006

JOB NUMBER: 4055.100 DATE: 1-3-20 BY: CC



FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)

Fault along which historic (last 200 years) displacement has occurred.

Holocene fault displacement (during past 11,700 years) without historic record.

Late Quaternary fault displacement (during past 700,000 years).

Quaternary fault (age undifferentiated).

ADDITIONAL FAULT SYMBOLS

Bar and ball on downthrown side (relative or apparent).

Arrows along fault indicate relative or apparent direction of lateral movement.

Arrow on fault indicates direction of dip.

Low angle fault (barbs on upper plate).

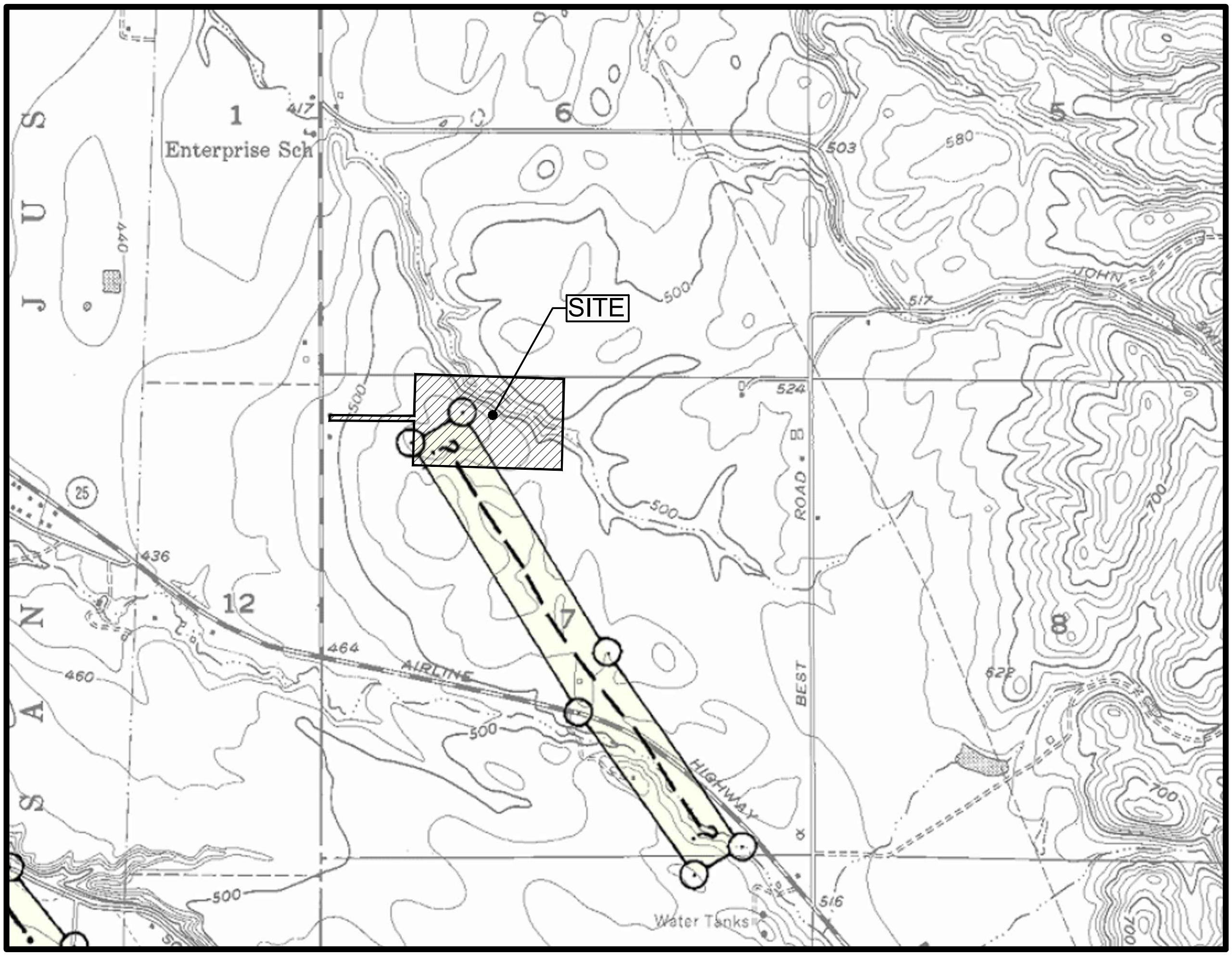
FAULT ACTIVITY MAP

291 OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

BASE: CGS, 2010, FAULT ACTIVITY MAP

PLATE 6

JOB NUMBER: 4055.100 DATE: 1-3-20 BY: CC



0 2000

1"=2000'

MAP EXPLANATION

Potentially Active Faults

1906 C

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture; solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary.

ALQUIST-PRIOLO FAULT ZONE MAP

291 OLD RANCH ROAD

HOLLISTER, CALIFORNIA

FOR

BILL LEE

BASE: PORTION OF ALQUIST-PRIOLO EARTHQUAKE FAULT HAZARD ZONES,
TRES PINOS, AT A SCALE OF 1:24,000.

PLATE 7

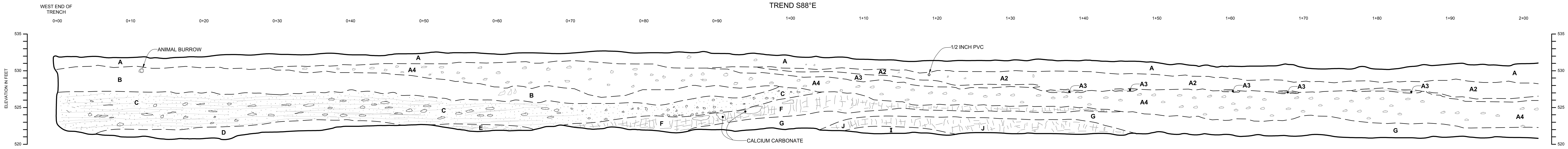
DRAWN BY: CC

DATE: 12-31-19

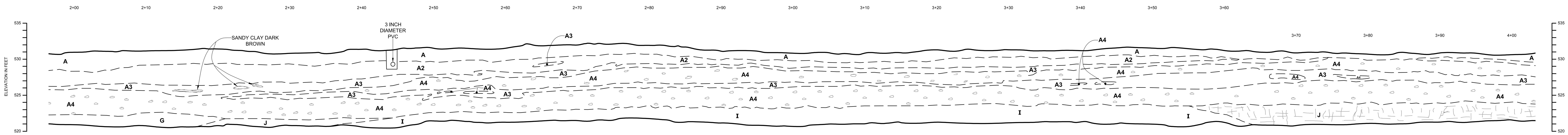
JOB NUMBER: 4055.100

0 5
1"=5'

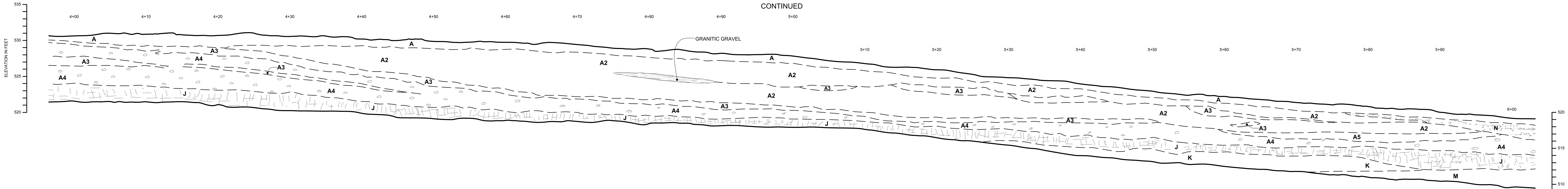
TRENCH T-1
LOG OF NORTH WALL
TREND S88°E



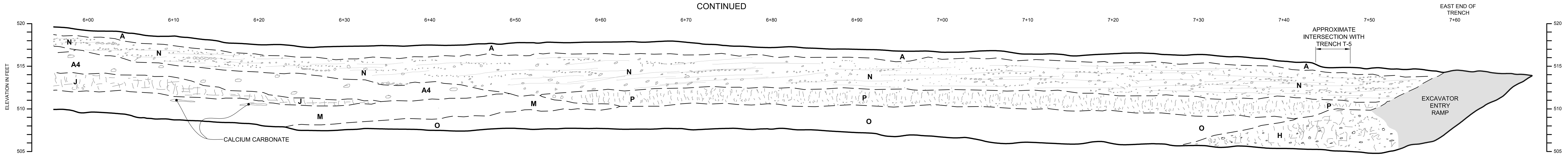
TRENCH T-1
CONTINUED



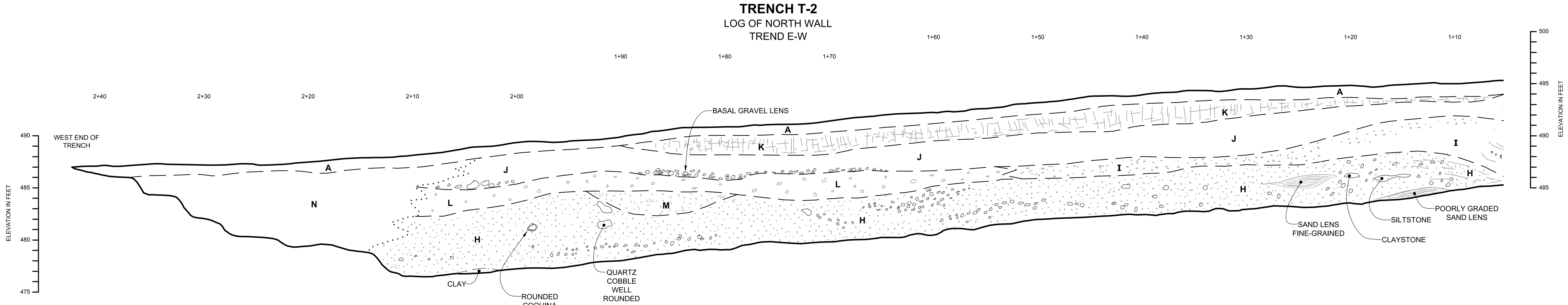
TRENCH T-1
CONTINUED



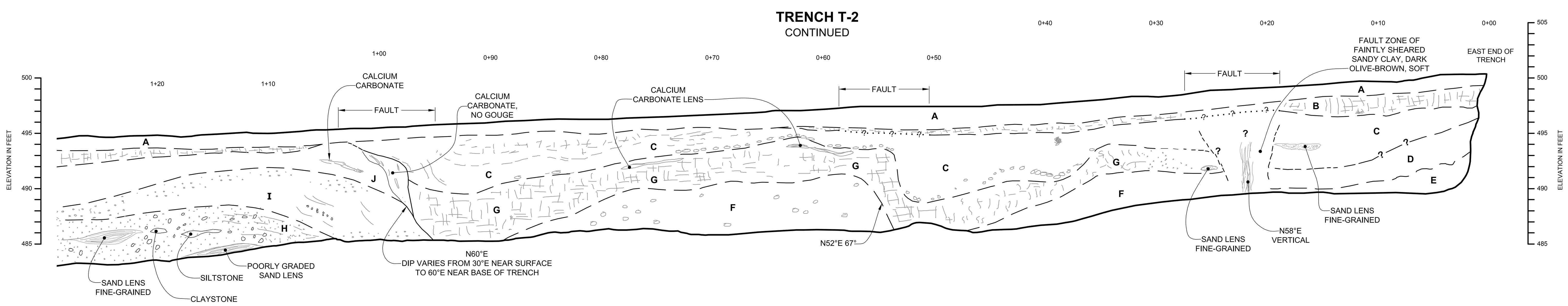
TRENCH T-1
CONTINUED



TRENCH T-2
LOG OF NORTH WALL
TREND E-W



TRENCH T-2
CONTINUED



EXPLANATION

GROUND SURFACE AND BOTTOM OF TRENCH

GEOLOGIC CONTACT, SOLID WHERE SHARP, DASHED WHERE GRADATIONAL

TRENCH T-1 EXPLANATION

A	SANDY CLAY, MEDIUM TO DARK GRAY-BLACK, OCCASIONAL/SCATTERED GRAVEL OF CHERT, QUARTZ AND SANDSTONE, SUBROUNDED, DISTURBED BY PLOWING
A2	SANDY CLAY, DARK BROWN TO DARK GRAY, DRY STIFF (FILL)
A3	SANDY CLAY, LIGHT BROWN TO LIGHT TAN, DRY, STIFF (FILL)
A4	SANDY CLAY, DARK BROWN TO DARK GRAY, DRY, STIFF TO HARD (FILL)
A5	SANDY CLAY, MEDIUM TO LIGHT BROWN, STIFF TO HARD (FILL)
B	SANDY CLAY, MEDIUM TO LIGHT ORANGE, DRY, STIFF TO HARD
C	COBBLY GRAVELLY SAND, FINE-TO COARSE-GRAINED SAND, MEDIUM TAN-BROWN, DRY, LOOSE, COBBLES AND GRAVEL ARE IMBRICATED NEARLY HORIZONTAL, INTERBEDDED WITH FINE GRAINED SAND LENSES
D	SANDY CLAY, DARK ORANGE-BROWN, DRY, HARD
E	CLAYEY GRAVELLY SAND, DARK ORANGE-BROWN, DRY, LOOSE
F	SANDY CLAY, DARK GRAY-BLACK, DRY, HARD, ABUNDANT TO ALMOST SATURATED WITH CALCIUM CARBONATE
G	SANDY CLAY, MEDIUM TAN, DRY, VERY STIFF TO HARD
H	GRAVELLY SANDY CLAY, DARK ORANGE-RED, DRY, HARD, ABUNDANT CALCIUM CARBONATE
I	SANDY CLAY TO CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, HARD, CALCIUM CARBONATE NODULES AND STRINGERS NEAR UPPER CONTACT
J	SANDY CLAY, LIGHT TAN, DRY, STIFF TO HARD, ABUNDANT CALCIUM CARBONATE NEAR TOP OF UNIT
K	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, STIFF TO HARD
L	SANDY CLAY, MEDIUM TO LIGHT BROWN, DRY, STIFF TO HARD
M	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, HARD
N	GRAVELLY SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, STIFF TO HARD, ABUNDANT SAND AND FINE GRAVEL LENSES (FILL)
O	SANDY CLAY, MEDIUM TO LIGHT ORANGE-TAN, DRY, STIFF TO HARD
P	SANDY CLAY, DARK RED-BROWN, DRY, STIFF TO HARD, DISTINCT PED FORMATION AT ABOUT 2-1/2 INCH SPACING

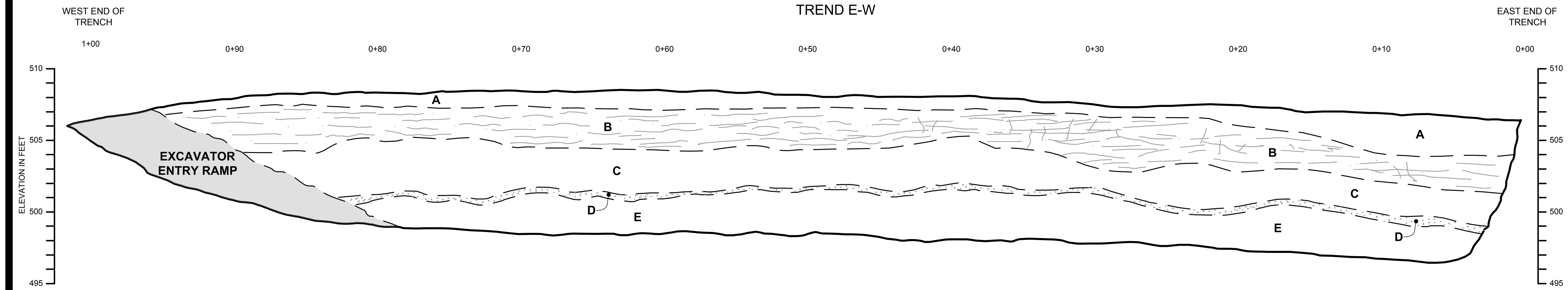
TRENCH T-2 EXPLANATION

A	SANDY SILTY CLAY, DARK RED-BROWN TO OLIVE-BROWN, DRY, VERY STIFF TO HARD, FEW ROUNDED QUARTZ FRAGMENTS, DISTURBED BY PLOWING
B	SILTY CLAY, MEDIUM RED-BROWN, DRY, VERY STIFF TO HARD, ABUNDANT CALCIUM CARBONATE ALONG VERTICAL PED STRUCTURES
C	SAND FINE-GRAINED WITH CLAY, RED-BROWN, DRY, DENSE
D	CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, DENSE, SOME WELL ROUNDED QUARTZ GRAVEL, SCATTERED CALCIUM CARBONATE NODULES AND STRINGERS WITH INTERMITTENT BASAL GRAVEL LENSES
E	SAND, FINE-GRAINED, MEDIUM TAN-BROWN, DRY, LOOSE TO DENSE
F	CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, DENSE, OCCASIONAL CALCIUM CARBONATE NODULES UP TO 1 INCH DIAMETER
G	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, HARD WITH ABUNDANT VERTICAL STRINGERS OF CALCIUM CARBONATE
H	COBBLY SAND TO SANDY GRAVEL WITH OCCASIONAL RIP-UPS OF SANDSTONE AND SILTSTONE, DARK RED WITH LIGHT GRAY AND BLACK LENSES, WELL ROUNDED GRAVEL AND COBBLES ARE FINE-GRAINED SANDSTONE, QUARTZITE AND OCCASIONAL GRANITE (HIGHLY WEATHERED), COBBLES HAVE UP TO 1/2 INCH WEATHERING RINDS
I	SAND, FINE-GRAINED, LIGHT ORANGE-BROWN, DRY, DENSE (SIMILAR TO "E" BUT MORE DENSE)
J	SAND, FINE-GRAINED WITH MINOR CLAY, LIGHT TO MEDIUM ORANGE-BROWN, DRY, DENSE
K	SANDY CLAY, MEDIUM TO DARK ORANGE-BROWN, DRY, HARD, ABUNDANT VERTICAL FRACTURING WITH SPACING APPROXIMATELY 2 INCHES, CLEAN PED FORMATION
L	CLAYEY SAND TO SANDY CLAY, WITH SCATTERED ROUNDED GRAVEL, MEDIUM ORANGE TO RED-BROWN, DRY, DENSE
M	SAND, FINE-GRAINED, MEDIUM RED-BROWN, DRY, LOOSE
N	SANDY CLAY, DARK GRAY TO BLACK, DRY, HARD (Qa ALLUVIUM)

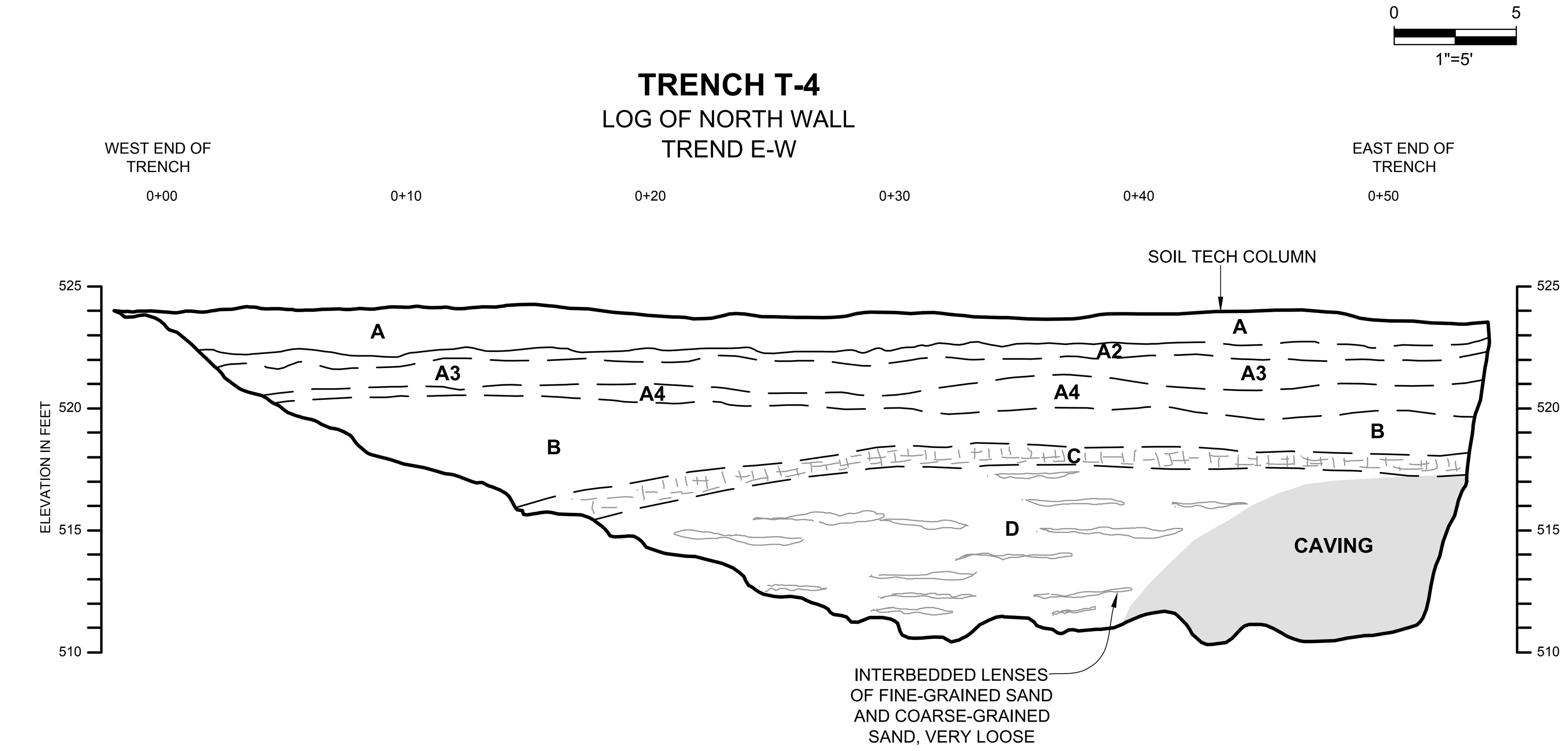
TRENCH LOGS
T-1 AND T-2
LEE PROPERTY
OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

Berlogar Stevens & Associates
SOIL ENGINEERS * ENGINEERING GEOLOGISTS

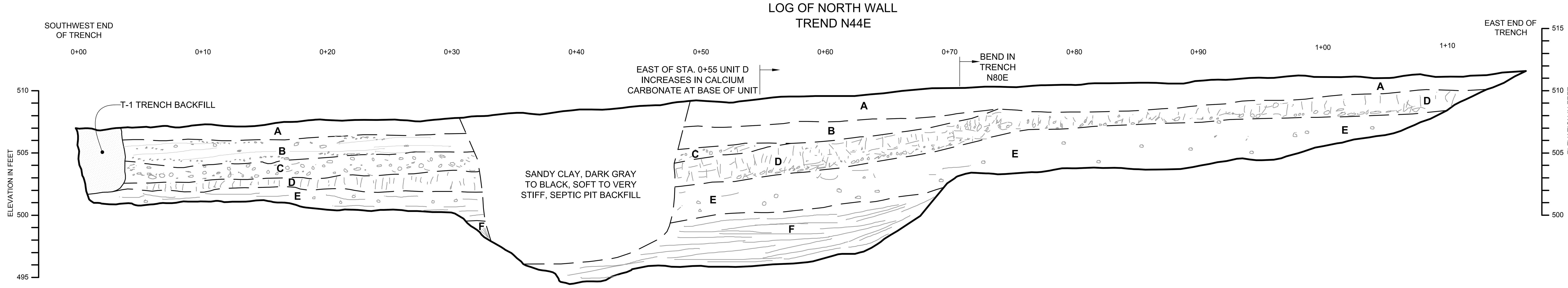
TRENCH T-3
LOG OF NORTH WALL
TREND E-W



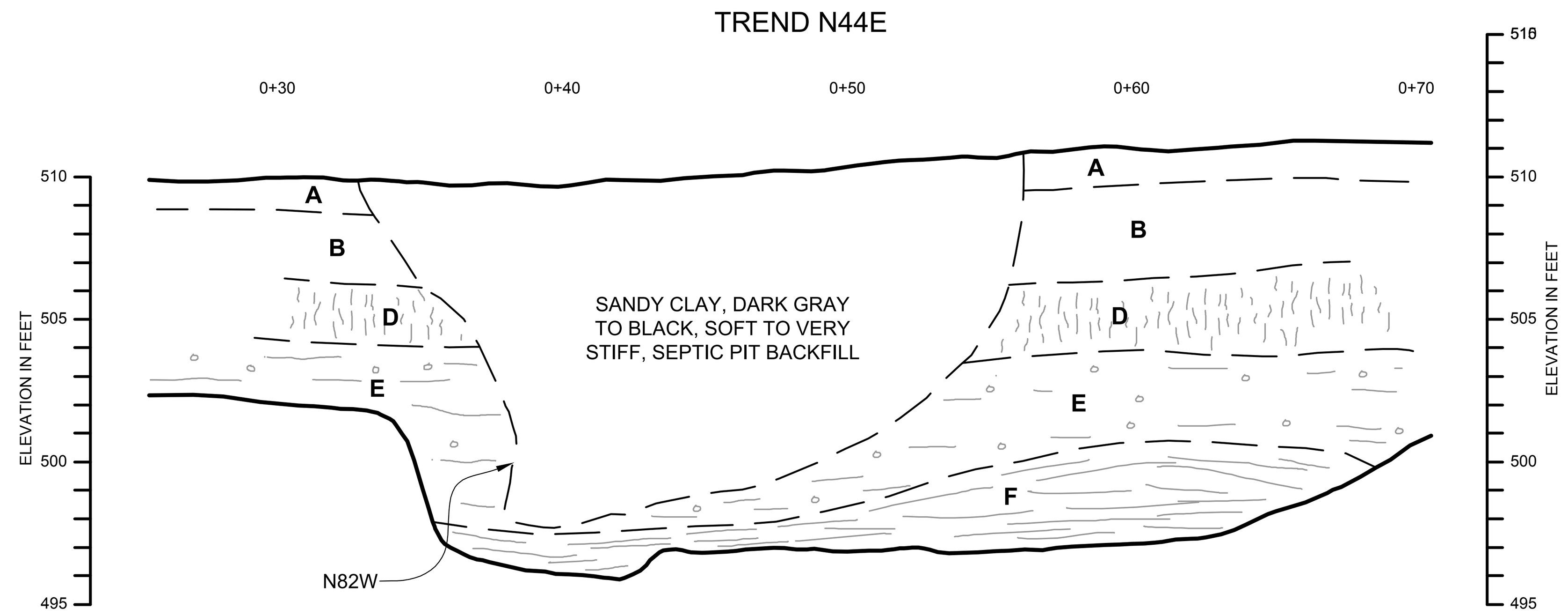
TRENCH T-4
LOG OF NORTH WALL
TREND E-W



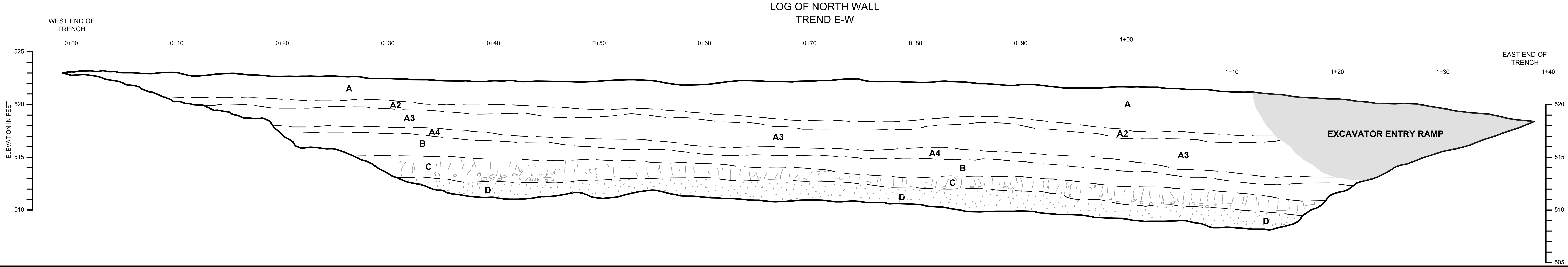
TRENCH T-5
LOG OF NORTH WALL
TREND N44E



TRENCH T-5
LOG OF SOUTH WALL
TREND N44E



TRENCH T-6
LOG OF NORTH WALL
TREND E-W



EXPLANATION

GROUND SURFACE AND BOTTOM OF TRENCH

GEOLOGIC CONTACT, SOLID WHERE SHARP, DASHED WHERE GRADATIONAL

TRENCH T-3 EXPLANATION

A	SANDY CLAY, MEDIUM TO LIGHT BROWN, DRY, LOOSE
B	SANDY CLAY, MEDIUM TO LIGHT BROWN-TAN, DRY, STIFF TO VERY STIFF, ABUNDANT HORIZONTAL CALCIUM CARBONATE VEINS
C	SANDY CLAY, MEDIUM TO LIGHT TAN-BROWN, DRY, STIFF
D	SAND, FINE-GRAINED, MEDIUM TAN, DRY, LOOSE TO VERY LOOSE
E	SANDY CLAY, MEDIUM TO LIGHT TAN-BROWN, DRY, STIFF

TRENCH T-4 EXPLANATION

A	SANDY CLAY, DARK GRAY/BLACK, WET, SOFT
A2	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT (FILL)
A3	SANDY CLAY, OLIVE-BROWN, MOIST, SOFT TO STIFF (FILL)
A4	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT (FILL)
B	SANDY CLAY, MEDIUM BROWN, MOIST, SOFT TO STIFF, SCATTERD CALCIUM CARBONATE NODULES UP TO 1 INCH DIAMETER, SOIL PEDS ABOUT 1 TO 2 INCHES APART
C	CLAYEY SAND, MEDIUM TO LIGHT TAN, DRY, ABUNDANT CALCIUM CARBONATE NODULES AND STRINGERS
D	SAND, MEDIUM TO LIGHT BROWN, DRY, LOOSE, FINE-GRAINED SAND, POORLY GRADED

TRENCH T-5 EXPLANATION

A	SANDY CLAY TO CLAYEY SAND MINOR GRAVEL, DARK GRAY TO BLACK (FILL)
B	MIXED SANDY CLAY, LIGHT TAN AND DARK BROWN, STIFF TO HARD (FILL)
C	GRAVELLY SANDY CLAY TO GRAVELLY CLAYEY SAND, STIFF TO HARD, SAND IS LOOSE (FILL)
D	SANDY CLAY, DARK OLIVE-BROWN, DRY, HARD, WELL DEVELOPED SOIL PEDS
E	SANDY CLAY, DARK TO LIGHT ORANGE-BROWN, STIFF TO VERY STIFF
F	GRAVELLY SAND, MEDIUM TO DARK RED-BROWN, DRY, LOOSE TO VERY LOOSE

TRENCH T-6 EXPLANATION

A	SANDY CLAY, DARK GRAY TO BLACK WITH LENSES, SLIGHT GRAVELLY SANDY CLAY, LIGHT TAN, MOIST, STIFF TO HARD
A2	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT (FILL)
A3	SANDY CLAY, OLIVE-BROWN, MOIST, SOFT TO STIFF (FILL)
A4	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT (FILL)
B	SANDY CLAY WITH MINOR SMALL GRAVEL, MEDIUM TO DARK RED-BROWN, DRY , STIFF TO HARD
C	SANDY CLAY, MEDIUM TO LIGHT ORANGE-BROWN, DRY, HARD, SCATTERED CALCIUM CARBONATE NODULES WITH BASAL GRAVEL LAYER, WELL DEVELOPED SOIL PEDS
D	GRAVELLY SAND, LIGHT TAN TO LIGHT BROWN, DRY, LOOSE TO VERY LOOSE

TRENCH LOGS T-3 THROUGH T-6
LEE PROPERTY
OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

Berlogar Stevens & Associates
SOIL ENGINEERS * ENGINEERING GEOLOGISTS

DRAWN BY: CC
DATE: 1-3-20
JOB NUMBER: 4055.100

APPENDIX A

Pedochronological Report

APPENDIX A

PEDOCHRONOLOGICAL REPORT FOR THE LEE PROPERTY, OLD RANCH ROAD, HOLLISTER, CALIFORNIA

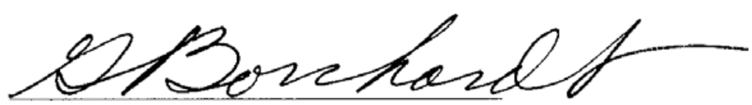
Prepared for Berlogar and Stevens, Inc., Pleasanton, California Project No. 4055.100

December 10, 2019

Soil Tectonics

P.O. Box 5335

Berkeley, CA 94705



Glenn Borchardt

Principal Soil Scientist

Certified Professional Soil Scientist No. 24836

PEDOCHRONOLOGICAL REPORT FOR THE LEE PROPERTY, OLD RANCH ROAD, HOLLISTER, CALIFORNIA

Prepared for Berlogar and Stevens, Inc., Pleasanton, California Project No. 4055.100

December 10, 2019

Glenn Borchardt

INTRODUCTION

An assessment of seismic and landslide risk due to ground movement can be aided greatly by the techniques of pedochronology (Borchardt, 1992, 1998), soil dating. This is because the youngest geological unit overlying fault traces is generally a soil horizon. The age and relative activity of ground movement often can be estimated by evaluating the age and relative disturbance of overlying soil units, as well as buried soils called paleosols. Terms, prefixes, and suffixes are defined in the Soils Glossary at the end of this report.

Soil horizons exhibit a wide range of physical, chemical, and mineralogical properties that evolve at varying rates. Soil scientists use various terms to describe these properties. A black, highly organic "A" horizon, for example, may form within a few centuries, while a dark brown, clayey "Bt" horizon may take up to 40,000 years to form. Certain soil properties are invariably absent in young soils. For instance, soils developed in granitic alluvium of the San Joaquin Valley do not have Munsell hues redder than 10YR until they are at least 100,000 years old (Birkeland, 1999; Harden, 1982). Still other properties, such as the movement and deposition of clay-size particles and the precipitation of calcium carbonate at extraordinary depths, indicate soil formation during a climate much wetter than at present. In the absence of a radiometric age date for the material from which a particular soil formed, an estimate of its age must take into account all the known properties of the soil and the landscape and climate in which it evolved.

METHOD

The first step in studying a soil is the compilation of the data necessary for describing it (Birkeland, 1999; Borchardt, 2010). At minimum, this requires a Munsell color chart, hand lens, acid bottle, and instruments for 1:1 soil:water pH and conductivity measurements. The second step may involve collecting samples of each horizon of the soil profile column for laboratory analysis of particle size. This is done to check the textural classifications made in the field and to evaluate the genetic relationships between horizons and between different soils in the landscape.

When warranted, the clay mineralogy and chemistry of the soil also is analyzed to provide additional information on the changes undergone by the initial material from which the soil weathered. The last step is the comparison of this accumulated soil data with that for soils having developed under similar conditions, preferably in the same region. Such information is scattered in soil survey reports (e.g., Welch, 1981), soil science journals, and consulting reports. In a particular locality, there is seldom enough comparative data available for this purpose. That is why, at the very least, the study of one soil profile always makes the evaluation of the next that much easier.

RESULTS OF THIS EVALUATION

In this study, I evaluated a soil profile in Trench T-4 excavated across a suspect secondary trace of the Calaveras fault. Soil Profile No. 1 developed in fine overbank materials overlying sandy channel fill deposits on an older terrace east of the main trace. The natural soil was overlain by several layers of artificial fill presumably the result of extensive land-levelling about 12 years ago.

Soil Profile No. 1

This field moist profile was described in the southeast wall of Trench T-4 at station 43’ (see log in main report). The natural soil was overlain by three layers of artificial fill (Figure 1, Table 1). The natural soil has an 83-cm thick very dark gray silty clay ABb horizon with medium strong subangular to weak angular blocky structure. It is very sticky and very plastic when wet, firm when moist, and extremely hard when dry. It has very few very fine roots and many fine continuous random tubular pores. The underlying horizon is a 33-cm thick very dark grayish brown silty clay ABktb horizon with a few fine distinct white mottles due to calcite concentrations. It has medium strong angular blocky structure (Figure 2). This overlies a 62-cm thick light olive brown silty clay loam Bktb horizon with many coarse distinct white mottles due to calcite concentrations (Figure 3). It has medium strong subangular blocky structure. This overlies a dark grayish brown very fine sand 2Cb horizon that has loose structure with a few peds having medium weak subangular blocky structure. It is nonsticky and nonplastic when wet, loose when moist, and very hard when dry. It has a few fine continuous random tubular pores. On the opposite wall of the trench reddish clay films coat the calcareous peds (Figure 4). Soil Profile No. 1 was underlain by a channel filled with thin bedded sands and gravels (Figure 5).

Soil pH and Conductivity

Soil pH is provided as part of a proper soil description. Unweathered bedrock and sediments normally have a pH generally around neutral. However, in regions where precipitation is less than about 20 inches/year, fine soils may form calcitic “Bk” horizons as occurred along the fault at Union City (Borchardt and Lienkaemper, 1999). Hollister had a mean annual precipitation of 14.25”/yr from 1961-1990 (Table 1), so in due time it might form such a horizon containing calcite. The ABb horizon, however, lacks calcite, possibly indicating it formed under a wetter regime than at present. It had a pH of 7.43, which was less than the overlying fill layers and the underlying Bk layers (Figure 6).

In soils, electrical conductivity is indicative of salt accumulation. This profile shows high conductivity for the ABb horizon (Figure 7). On flood plains having relatively rapid deposition of fine materials, each buried soil may have a conductivity maximum at its base (Borchardt, 2014; 2016). More detailed sampling may have shown that to be the case here. In any case, the presence of salt in the ABb horizon is indicative of a dry period following the wet period that initially led to the formation of the soil. The artificial fill horizons have increasing conductivity with depth, probably because some leaching occurred after deposition.

Soil Age

The artificial fill layers of the type seen in Soil Profile No. 1 (Figure 1) encompass most of the site (Figure 8). They are of varying thickness, with their number ranging from none (Figure 9) to three or more. A 2018 aerial photo from Google Earth Pro shows extensive cultivation in the area, probably for hay crops (Figure 10). Judging by the historical images, cultivation became ever-more intensive after 20060804. Perhaps the land levelling occurred shortly after that date.

Judging by the thickness of the ABb horizon (83 cm), Bktb horizons (95 cm), and the presence of the reddish clay films on the Bktb horizon on the opposite wall, I estimate the natural soil to have formed during the mid-Wisconsin interglacial period. The clay films would have been deposited via illuviation during the subsequent Late Wisconsin glacial period (Dupre, 1975). While no glaciation occurred at this site, precipitation in California at that time was two to three times what it is now (McFadden, 1982; McFadden and Tinsley, 1985). Current precipitation in Hollister is about 362 mm (14.25 in.) (Table 1). The relatively noncalcareous ABb horizon was 830 mm (32.67 in.) thick. As a general rule, the depth of leaching in silty clay soils in California tends to be equivalent to the annual precipitation. Note that the lower half of the ABb probably had a small amount of calcite along with the salt that had accumulated there during the relatively dry Holocene subsequent to its original formation.

CONCLUSIONS

1. The upper layers in Soil Profile No. 1 were deposited during land levelling about 12 years ago.
2. The underlying natural soil appears to have undergone a period of extensive calcite precipitation during a dry period followed by increased precipitation common to the Late Wisconsin, making its age about 40,000 yr.
3. There was no evidence for fault movement involving the horizons in Soil Profile No. 1.

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Table 1. Description of Soil Profile No. 1 in Trench T-4 excavated across a suspect secondary trace of the Calaveras fault at the Lee Property, on Old Ranch Road, Hollister, California. Abbreviations and definitions are given in Schoeneberger and others (2012) and Soil Survey Staff (1993, 1999, 2010).

Description of soil developed on the older terrace (mapped as Qoa2 by Dibblee) east of the Calaveras fault in the southeast wall at station 43’ in Trench T-4 at 36.822380°, -121.35800°. Elevation 524’ GEP.** Mediterranean climate with mean annual precipitation of 14.25”/yr (362 mm/yr) at Hollister from 1961-1990. Slope 1%. Aspect northeast. Excellent drainage. Water table >20’. Three layers of artificial fill overly parent material consisting of fine overbank deposits overlying very fine sand and gravel. The artificial fill layers are mildly alkaline and the becoming moderately alkaline in the natural soil. Soil in the area was mapped as *Rincon silty clay loam, 2 to 9 percent slopes, (104 cm), Mollic Haploxeralfs.*

Horizon　Depth, cm　Description

Af1　0-12　Very dark grayish brown (2.5Y3/2m, 10YR5/3d) silty clay with few fine white calcite nodules and common olive gray (5Y4/2m) reworked peds with thin clay films; medium weak subangular blocky and medium strong granular structure; slightly sticky and slightly plastic when wet, friable when moist, and very hard when dry; common fine roots; common fine continuous random tubular pores; few thin clay films coating pores and on peds; violent effervescence; abrupt smooth boundary; pH 7.76; conductivity 154 uS; Sample No. 19B041.

Af2　12-37　Black (5Y3/2m, 2.5Y5/2d) silty clay; medium weak subangular blocky and medium strong granular structure; sticky and plastic when wet, friable when moist, and very hard when dry; few very fine roots; common fine continuous random tubular pores; few thin clay films coating pores and on peds; violent effervescence; abrupt smooth boundary; pH 7.66; conductivity 261 uS; Sample No. 19B042.

Af3　37-63　Dark grayish brown (2.5Y4/3m, 2.5Y6/3d) silty clay with few fine white calcite nodules and few very dark grayish brown (10YR3/2m) reworked peds; medium strong subangular and angular blocky structure; sticky and plastic when wet, friable when moist, and hard when dry; very few very fine roots; common fine continuous random tubular pores; few thin clay films coating pores and on peds; matrix has slight effervescence and nodules have violent effervescence; abrupt smooth boundary; pH 7.77; conductivity 330 uS; Sample No. 19B043.

*ESTIMATED AGE:	t_o	=	0	ka
	t_b	=	0.012	ka
	t_d	=	0.012	ky

ABb 63-146 Very dark gray (2.5Y3/1m, 10YR3/2d) silty clay; medium strong subangular and medium weak blocky structure; very sticky and very plastic when wet, firm when moist, and extremely hard when dry; very few very fine roots; many fine continuous random tubular pores; diffuse wavy smooth boundary; pH 7.43; conductivity 1013 uS; Sample No. 19B044.

ABktb 146-179 Very dark grayish brown (10YR3/2m, 2.5Y5/2m) silty clay with a few fine distinct white mottles due to calcite concentrations; medium strong angular blocky structure; very sticky and very plastic when wet, firm when moist, and extremely hard when dry; few to common fine continuous random tubular pores; gradual wavy boundary; pH 7.89; conductivity 454 uS; Sample No. 19B045 from 10 m to the SW.

Bktb 179-241 Light olive brown (2.5Y5/4m, 2.5Y6/3m) silty clay loam with many coarse distinct white mottles due to calcite concentrations; medium strong subangular blocky structure; very sticky and very plastic when wet, very friable when moist, and very hard when dry; few fine continuous random tubular pores; gradual wavy boundary; pH 8.12; conductivity 148 uS; Sample No. 19B044.

2Cb 241+ Dark grayish brown (2.5Y4/3m, 2.5Y6/3m) very fine sand; loose with a few peds with medium weak subangular blocky structure; nonsticky and nonplastic when wet, loose when moist, and very hard when dry; few fine continuous random tubular pores; pH 8.20; conductivity 121 uS; Sample No. 19B046.

*ESTIMATED AGE:	t_o	=	40	ka
	t_b	=	0.012	ka
	t_d	=	40	ky

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*Pedochronological estimates based on available information. All ages should be considered subject to ±50% variation unless otherwise indicated (Borchardt, 1992). Bold dates are absolute.

t_o = date when soil formation or aggradation began, ka

t_b = date when soil or strata was buried, ka

t_d = duration of soil development or aggradation, ky

**GEP = Google Earth Pro elevation

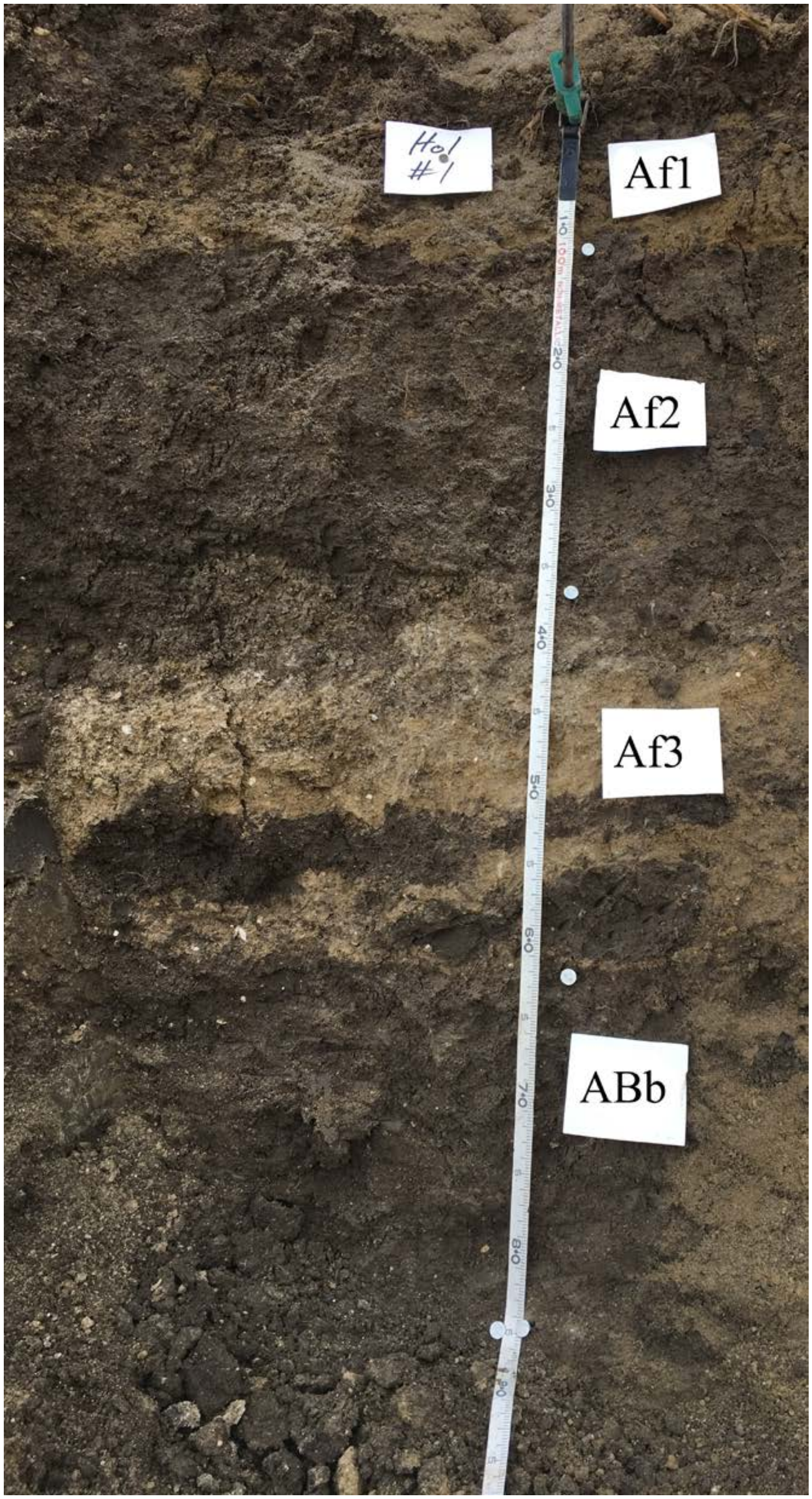

Figure 1. Artificial fill layers over the ABb horizon in Soil Profile No. 1 in Trench T-4 at station 43'. View SE

Figure 2. Lower portion of the ABb horizon overlying the ABtkb horizon of Soil Profile No. 1.

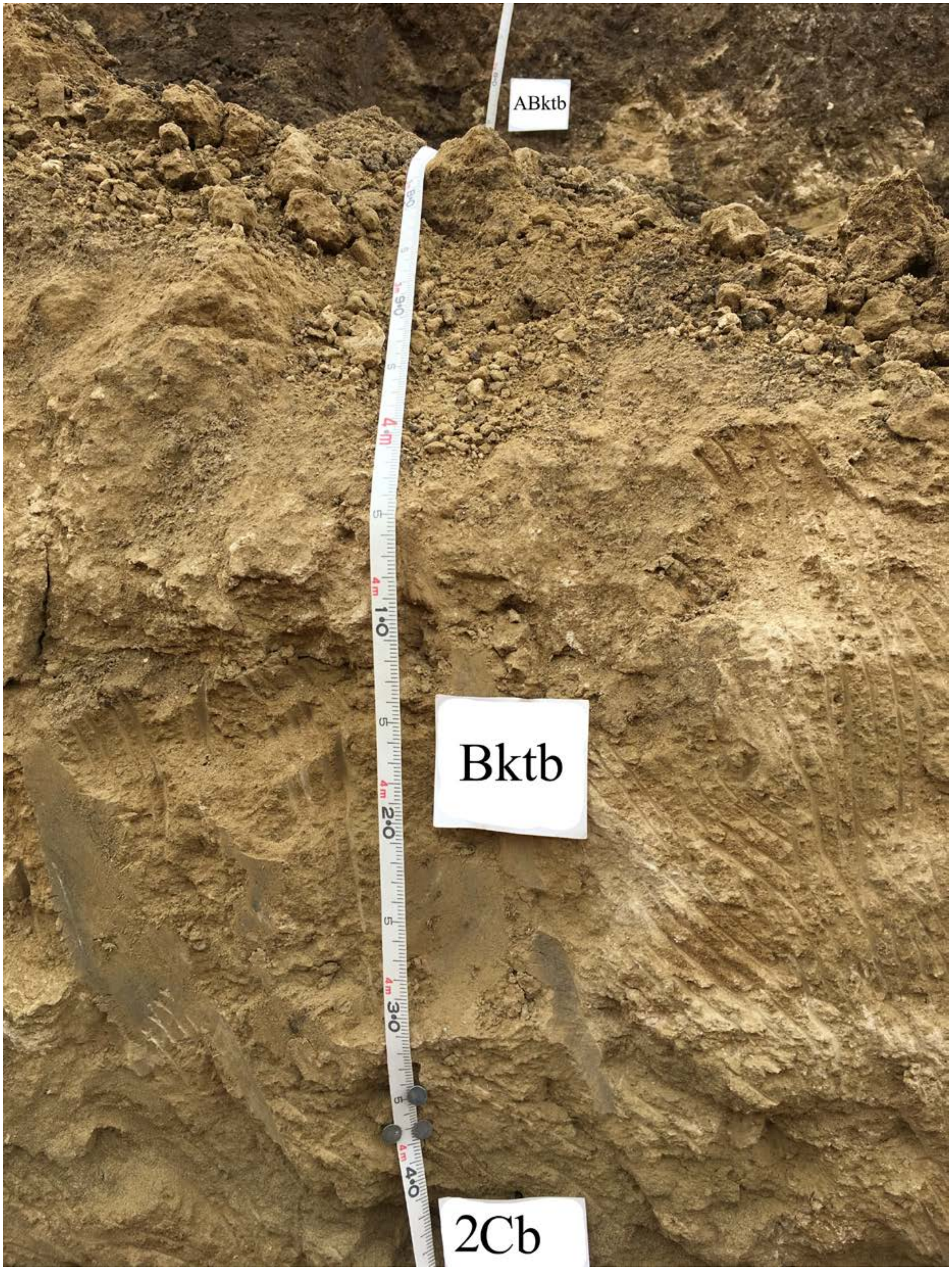

Figure 3. ABktb and Bktb horizons overlying the 2Cb horizon at the base of Soil Profile No. 1.

Figure 4. Reddish clay films coating calcitic peds on the NW wall of the trench. This shows two phases of soil development: calcite precipitation during a dry period followed by clay illuviation during a wet period. In California, reddish clay films usually form only in Pleistocene soils.

Figure 5. Relatively flat-lying thin bedded sand and gravel in the channel fill underlying Soil Profile No. 1 on the NW wall.

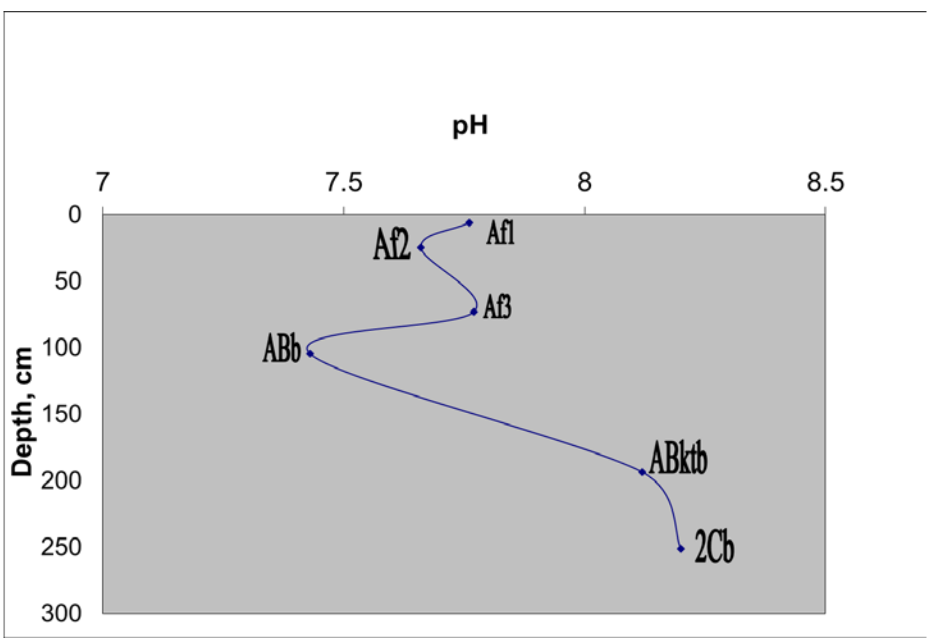

Figure 6. Depth function for pH in Soil Profile No. 1.

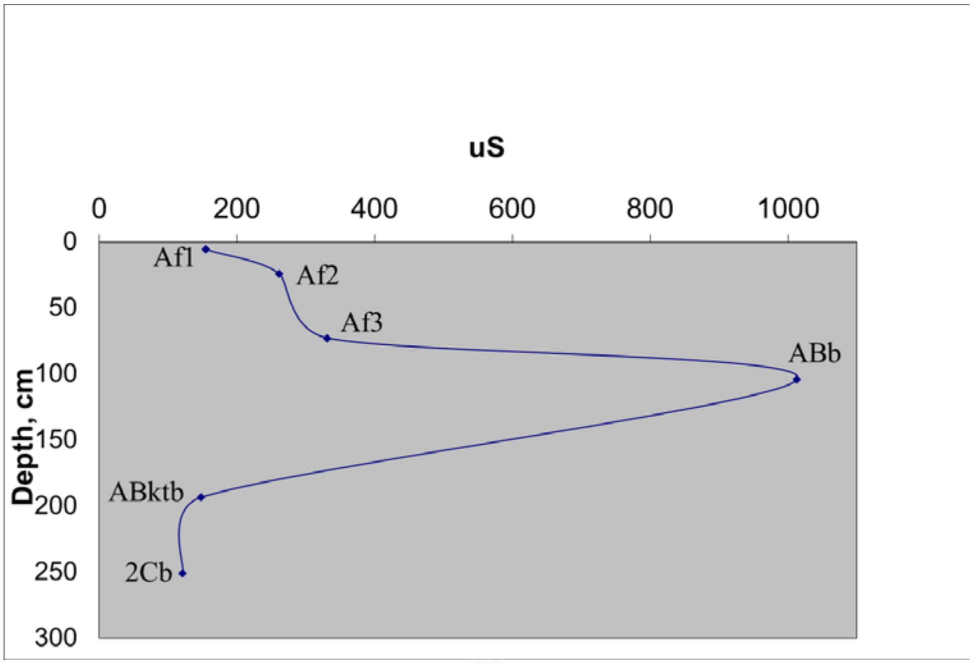

Figure 7. Depth function for electrical conductivity in Soil Profile No. 1.

Figure 8. SE wall of Trench T-1 showing artificial fill layers over the natural soil. Note the abundant calcite concentrations underlying the black ABb horizon.

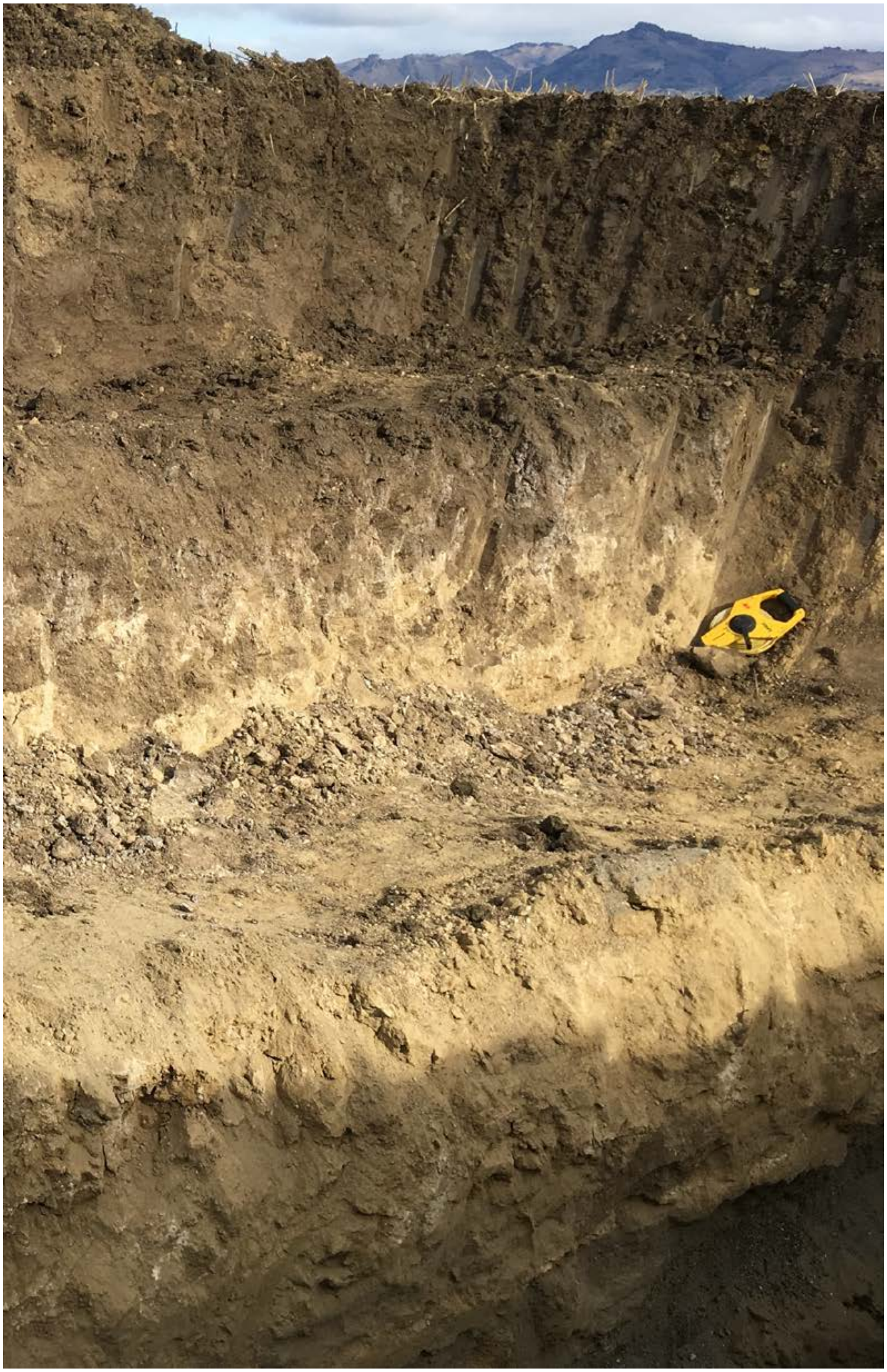

Figure 9. Northern corner of Trench T-4 showing the natural soil without the artificial fill that buries it elsewhere in the trench. Note the underlying calcite concentrations overlying the sandy to gravelly channel fill.

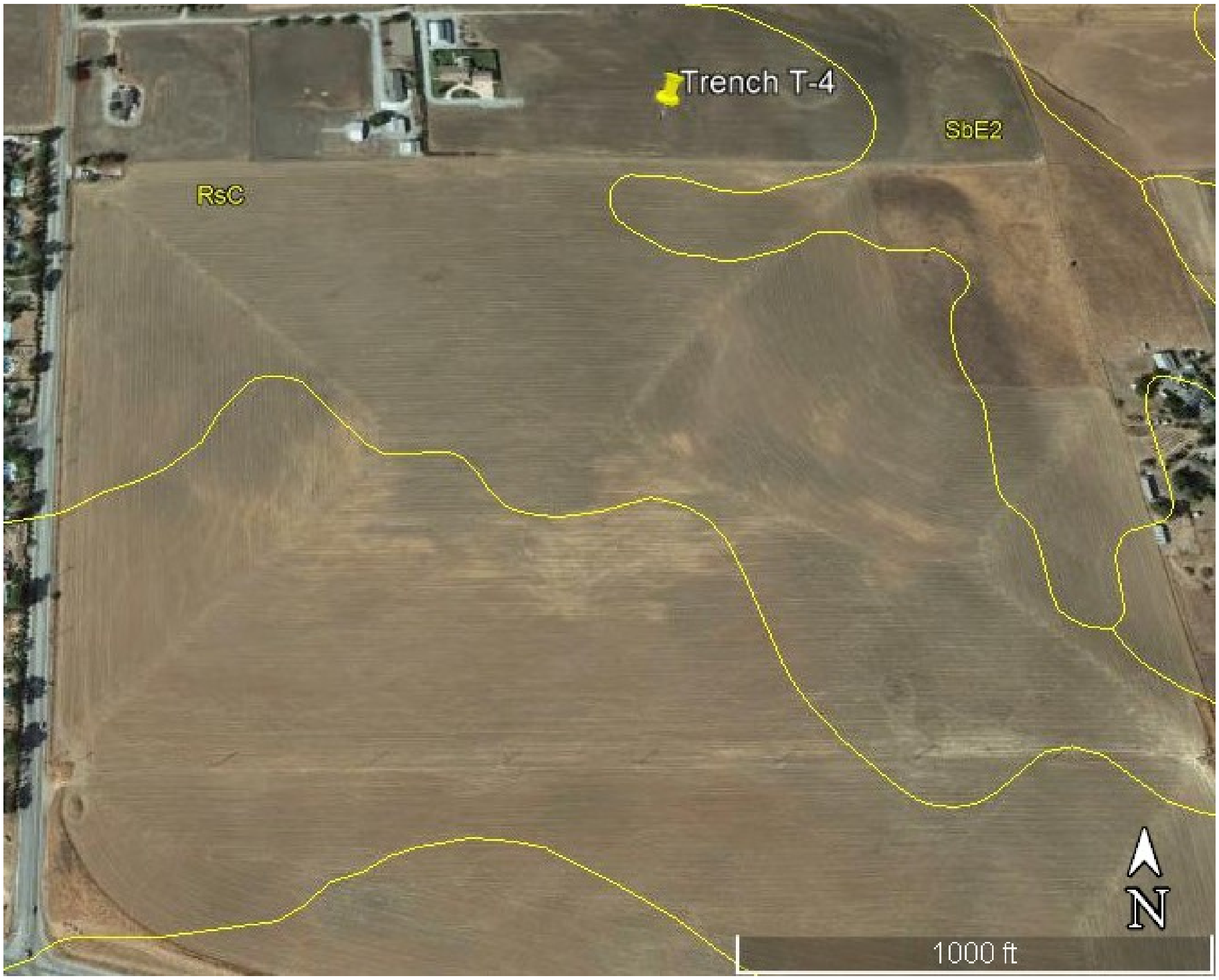

Figure 10. Location of Soil Profile No. 1 in Trench T-4. Cultivation in the field to the south intensified after 2007. Perhaps that is when the land levelling was done. The yellow lines demark mapped soil units, with RsC signifying the Rincon clayey silt loam at the site.

March 2, 2018

SOILS GLOSSARY

AGE. Elapsed time in calendar years. Because the cosmic production of C-14 has varied during the Quaternary, radiocarbon years (expressed as ky B.P.) must be corrected by using tree-ring and other data. Abbreviations used for corrected ages are: ka (kilo anno or years in thousands) or Ma (millions of years). Abbreviations used for intervals are: yr (years), ky (thousands of years). radiocarbon ages = yr B.P. Calibrated ages are calculated from process assumptions, relative ages fit in a sequence, and correlated ages refer to a matching unit. (See also yr B.P., HOLOCENE, PLEISTOCENE, QUATERNARY, PEDOCHRONOLOGY).

AGGRADATION. Deposition on the earth's surface in the direction of uniformity of grade.

ALKALI (SODIC) SOIL. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 % or more of the total exchangeable bases) that plant growth is restricted.

ALKALINE SOIL. Any soil that has a pH greater than 7.3. (See Reaction, Soil.)

ANGULAR ORPHANS. Angular fragments separated from weathered, well-rounded cobbles in colluvium derived from conglomerate.

ARGILLAN. (See Clay Film.)

ARGILLIC horizon. A horizon containing clay either translocated from above or formed in place through pedogenesis.

ALLUVIATION. The process of building up of sediments by a stream at places where stream velocity is decreased. The coarsest particles settle first and the finest particles settle last.

ANOXIC. (See also GLEYED SOIL). A soil having a low redox potential.

AQUICLUDE. A saturated body of sediment or rock that is incapable of transmitting significant quantities of water under ordinary hydraulic gradients.

AQUITARD. A body of rock or sediment that retards but does not prevent the flow of water to or from an adjacent aquifer. It does not readily yield water to wells or springs but may serve as a storage unit for groundwater.

ATTERBERG LIMITS. The moisture content at which a soil passes from a semi-solid to a plastic state (plastic limit, PL) and from a plastic to a liquid state (liquid limit, LL). The plasticity index (PI) is the numerical difference between the LL and the PL.

BEDROCK. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

BISEQUUM. Two soils in vertical sequence, each soil containing an eluvial horizon and its underlying B horizon.

BOUDIN, BOUDINAGE. From a French word for sausage, describes the way that layers of rock break up under extension. Imagine the hand, fingers together, flat on the table, encased in soft clay and being squeezed from above, as being like a layer of rock. As the spreading clay moves the fingers (sausages) apart, the most mobile rock fractions are drawn or squeezed into the developing gaps.

BURIED SOIL. A developed soil that was once exposed but is now overlain by a more recently formed soil.

CALCAREOUS SOIL. A soil containing enough calcium carbonate (commonly with magnesium carbonate) to effervesce (fizz) visibly when treated with cold, dilute hydrochloric acid. A soil having measurable amounts of calcium carbonate or magnesium carbonate.

CARBONATE MORPHOLOGY STAGES. Descriptive classes of calcite precipitation indicating increasing pedogenesis over time:

Stage	Description	Percent Carbonate
I	Bk horizon with few filaments and coatings	<10
I+	Bk with common filaments and continuous clast coatings	<10
II	Bk with continuous clast coatings, white masses, few nodules	>10
II+	Bk as above, but matrix is completely whitened, common nodules	>15
>II	K horizon that is 90% white, many nodules	>20
III+	K that is completely plugged	>40
IV	K as above, but upper part cemented and has weak platy structure	>50
V	K same as above, but laminar layer is strong with incipient brecciation	>50
VI	K brecciation and recementation, as well as pisoliths, are common	>50

CATENA. A sequence of soils of about the same age, derived from similar parent material and forming under similar climatic conditions, but having different characteristics due to variation in relief and drainage. (See also TOPOSEQUENCE.)

CEC. Cation exchange capacity. The amount of negative charge balanced by positively charged ions (cations) that are exchangeable by other cations in solution (meq/100 g soil = cmol(+)/kg soil).

CLAY. As a soil separate, the mineral soil particles are less than 0.002 mm in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

CLAY FILM. A coating of oriented clay on the surface of a sand grain, pebble, soil aggregate, or ped. Clay films also line pores or root channels and bridge sand grains. Frequency classification is based on the percent of the ped faces and/or pores that contain films: very few--<5%; few--5-25%; common--25-50%; many--50-90%; and continuous--90-100%. Thickness classification is based on visibility of sand grains: thin--very fine sand grains standout; moderately thick--very fine sand grains impart microrelief to film; thick--fine sand grains enveloped by clay and films visible without magnification. Synonyms: clay skin, clay coat, argillan, illuviation cutan.

CLAY LAMELLAE. Thin, generally wavy subhorizontal bands that appear as multiple micro-Bt horizons at the base of the solum generally in sandy Holocene deposits. Each lamella generally is 1-3 cm in thickness. There may be two to six or more clay lamellae between 5 and 30 cm apart.

COBBLE. Rounded or partially rounded fragments of rock ranging from 7.5 to 25 cm in diameter.

COLLUVIUM. Any loose mass of soil or rock fragments that moves downslope largely by the force of gravity. Usually it is thicker at the base of the slope.

COLLUVIUM-FILLED SWALE. The prefailure topography of the source area of a debris flow.

COMPARATIVE PEDOLOGY. The comparison of soils, particularly through examination of features known to evolve through time.

CONCRETIONS. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

CONDUCTIVITY. The ability of a soil solution to conduct electricity, generally expressed as the reciprocal of the electrical resistivity. Electrical conductance is the reciprocal of the resistance (1/R = 1/ohm = ohm^{-1} = mho [reverse of ohm] = siemens = S), while electrical conductivity is the reciprocal of the electrical resistivity (EC = 1/r = 1/ohm-cm = mho/cm = S/cm or mmho/cm = dS/m). EC, expressed as uS/cm, is equivalent to the ppm of salt in solution when multiplied by 0.640. Pure rain water has an EC of 0, standard 0.01 N KCl is 1411.8 uS at 25C, and the growth of salt-sensitive crops is restricted in soils having saturation extracts with an EC greater than 2,000 uS/cm. Measurements in soils are usually performed on 1:1 suspensions containing one part by weight of soil and one part by weight of distilled water.

CONSISTENCE, SOIL. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are --

Loose.--Noncoherent when dry or moist; does not hold together in a mass.

Friable.--When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.--When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.--When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.--When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.--When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.--When dry, breaks into powder or individual grains under very slight pressure.

Cemented.--Hard and brittle; little affected by moistening.

CTPOT. Easily remembered acronym for climate, topography, parent material, organisms, and time; the five factors of soil formation.

CUMULIC. A soil horizon that has undergone aggradation coincident with its active development.

CUTAN. (See Clay Film.)

DEBRIS FLOW. Incoherent or broken masses of rock, soil, and other debris that move downslope in a manner similar to a viscous fluid.

DEBRIS SLOPE. A constant slope with debris on it from the free face above.

DEGRADATION. A modification of the earth's surface by erosion.

DURIPAN. A subsurface soil horizon that is cemented by illuvial silica, generally deposited as opal or microcrystalline silica, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or HCl.

ELUVIATION. The removal of soluble material and solid particles, mostly clay and humus, from a soil horizon by percolating water.

EOLIAN. Deposits laid down by the wind, landforms eroded by the wind, or structures such as ripple marks made by the wind.

FAULT-LINE SCARP. A scarp that has been produced by differential erosion along an old fault line.

FAULTSLIDE. A landslide that shows physical evidence of its interaction with a fault.

FIRST-ORDER DRAINAGE. The most upstream, field-discernible concavity that conducts water and sediments to lower parts of a watershed.

FLOOD PLAIN. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

FOSSIL FISSURE. A buried rectilinear chamber associated with extension due to ground movement. The chamber must be oriented along the strike of the shear and must have vertical and horizontal dimensions greater than its width. It must show no evidence of faunal activity and its walls may have silt or clay coatings indicative of frequent temporary saturation with ground water. May be mistaken for an animal burrow. Also known as a paleofissure.

FRAGIC. Term for the tendency for a hard or extremely hard ped or clod to rupture suddenly rather than to undergo slow deformation when pressure is applied. Fragic peds slake in water within 10 minutes and display no cementation upon repeated wetting and drying. Fragic clays tend to be kaolinitic.

FRIABILITY. Term for the ease with which soil crumbles. A friable soil is one that crumbles easily.

GENESIS, SOIL. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum (A and B horizons) from the unconsolidated parent material.

GEOMORPHIC. Pertaining to the form of the surface features of the earth. Specifically, geomorphology is the analysis of landforms and their mode of origin.

GLEYED SOIL. A soil having one or more neutral gray horizons as a result of water logging and lack of oxygen. The term "gleyed" also designates gray horizons and horizons having yellow and gray mottles as a result of intermittent water logging.

GRAVEL. Rounded or angular fragments of rock 2 to 75 mm in diameter. Soil textures with >15% gravel have the prefix "gravelly" and those with >90% gravel have the suffix "gravel."

HIGHSTAND. The highest elevation reached by the ocean during an interglacial period.

HOLOCENE. The most recent epoch of geologic time, extending from 10 ka to the present.

HORIZON, SOIL. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major soil horizons:

> O horizon.--The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.
>
> A horizon.--The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).
>
> E horizon -- This eluvial horizon is light in color, lying beneath the A horizon and above the B horizon. It is made up mostly of sand and silt, having lost most of its clay and iron oxides through reduction, chelation, and translocation.
>
> B horizon.--The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these.
>
> C horizon.--The relatively unweathered material immediately beneath the solum. Included are sediment, saprolite, organic matter, and bedrock excavatable with a spade. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a number precedes the letter C.

R horizon.--Consolidated rock not excavatable with a spade. It may contain a few cracks filled with roots or clay or oxides. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Major horizons may be further distinguished by applying prefix Arabic numbers to designate differences in parent materials as they are encountered (e.g., 2B, 2BC, 3C) or by applying suffix numerals to designate minor changes (e.g., B1, B2).

The following is from the Natural Resources Conservation Service, except for the proposed addition of mn:

"Suffix Symbols

Lowercase letters are used as suffixes to designate specific kinds of master horizons and layers. The term "accumulation" is used in many of the definitions of such horizons to indicate that these horizons must contain more of the material in question than is presumed to have been present in the parent material. The suffix symbols and their meanings are as follows:

a Highly decomposed organic material

This symbol is used with O to indicate the most highly decomposed organic materials, which have a fiber content of less than 17 percent (by volume) after rubbing.

b Buried genetic horizon

This symbol is used in mineral soils to indicate identifiable buried horizons with major genetic features that were developed before burial. Genetic horizons may or may not have formed in the overlying material, which may be either like or unlike the assumed parent material of the buried soil. This symbol is not used in organic soils, nor is it used to separate an organic layer from a mineral layer.

c *Concretions or nodules*

This symbol indicates a significant accumulation of concretions or nodules. Cementation is required. The cementing agent commonly is iron, aluminum, manganese, or titanium. It cannot be silica, dolomite, calcite, or more soluble salts.

co *Coprogenous earth*

This symbol, used only with L, indicates a limnic layer of coprogenous earth (or sedimentary peat).

d *Physical root restriction*

This symbol indicates noncemented, root-restricting layers in natural or human-made sediments or materials. Examples are dense basal till, plowpans, and other mechanically compacted zones.

di *Diatomaceous earth*

This symbol, used only with L, indicates a limnic layer of diatomaceous earth.

e *Organic material of intermediate decomposition*

This symbol is used with O to indicate organic materials of intermediate decomposition. The fiber content of these materials is 17 to 40 percent (by volume) after rubbing.

f *Frozen soil or water*

This symbol indicates that a horizon or layer contains permanent ice. The symbol is not used for seasonally frozen layers or for dry permafrost.

ff *Dry permafrost*

This symbol indicates a horizon or layer that is continually colder than 0^{o} C and does not contain enough ice to be cemented by ice. This suffix is not used for horizons or layers that have a temperature warmer than 0^{o} C at some time of the year.

g *Strong gleying*

This symbol indicates either that iron has been reduced and removed during soil formation or that saturation with stagnant water has preserved it in a reduced state. Most of the affected layers have chroma of 2 or less, and many have redox concentrations. The low chroma can represent either the color of reduced iron or the color of uncoated sand and silt particles from which iron has been removed. The symbol g is not used for materials of low chroma that have no history of wetness, such as some slates or E horizons. If g is used with B, pedogenic change in addition to gleying is implied. If no other pedogenic change besides gleying has taken place, the horizon is designated Cg.

h *Illuvial accumulation of organic matter*

This symbol is used with B to indicate the accumulation of illuvial, amorphous, dispersible complexes of organic matter and sesquioxides if the sesquioxide component is dominated by aluminum but is present only in very small quantities. The organo-sesquioxide material coats sand and silt particles. In some horizons these coatings have coalesced, filled pores, and cemented the horizon. The symbol h is also used in combination with s as “Bhs” if the amount of the sesquioxide component is significant but the color value and chroma, moist, of the horizon are 3 or less.

i *Slightly decomposed organic material*

This symbol is used with O to indicate the least decomposed of the organic materials. The fiber content of these materials is 40 percent or more (by volume) after rubbing.

j *Accumulation of jarosite*

Jarosite is a potassium or iron sulfate mineral that is commonly an alteration product of pyrite that has been exposed to an oxidizing environment. Jarosite has hue of 2.5Y or yellower and normally has chroma of 6 or more, although chromas as low as 3 or 4 have been reported. [Note: No longer used to indicate "juvenile."]

jj *Evidence of cryoturbation*

Evidence of cryoturbation includes irregular and broken horizon boundaries, sorted rock fragments, and organic soil materials existing as bodies and broken layers within and/or between mineral soil layers. The organic bodies and layers are most commonly at the contact between the active layer and the permafrost.

k *Accumulation of secondary carbonates*

This symbol indicates an accumulation of visible pedogenic calcium carbonate (less than 50 percent, by volume). Carbonate accumulations exist as carbonate filaments, coatings, masses, nodules, disseminated carbonate, or other forms.

kk *Engulfment of horizon by secondary carbonates*

This symbol indicates major accumulations of pedogenic calcium carbonate. The suffix kk is used when the soil fabric is plugged with fine grained pedogenic carbonate (50 percent or more, by volume) that exists as an essentially continuous medium. The suffix corresponds to the stage III plugged horizon or higher of the carbonate morphogenetic stages (Gile et al., 1966).

m *Cementation or induration*

This symbol indicates continuous or nearly continuous cementation. It is used only for horizons that are more than 90 percent cemented, although they may be fractured. The cemented layer is physically root-restrictive. The dominant cementing agent (or the two dominant ones) may be indicated by adding defined letter suffixes, singly or in pairs. The horizon suffix km or kkm indicates cementation by carbonates; qm, cementation by silica; sm, cementation by iron; yym, cementation by gypsum; kqm, cementation by lime and silica; and zm, cementation by salts more soluble than gypsum.

ma *Marl*

This symbol, used only with L, indicates a limnic layer of marl.

mn *Mangans*

This symbol indicates an accumulation of manganese oxide, generally as ped coatings called mangans (First used by Borchardt on 20130418.)

n *Accumulation of sodium*

This symbol indicates an accumulation of exchangeable sodium.

o *Residual accumulation of sesquioxides*

This symbol indicates a residual accumulation of sesquioxides.

p *Tillage or other disturbance*

This symbol indicates a disturbance of the surface layer by mechanical means, pasturing, or similar uses. A disturbed organic horizon is designated Op. A disturbed mineral horizon is designated Ap even though it is clearly a former E, B, or C horizon.

q *Accumulation of silica*

This symbol indicates an accumulation of secondary silica.

r *Weathered or soft bedrock*

This symbol is used with C to indicate cemented layers (moderately cemented or less cemented). Examples are weathered igneous rock and partly consolidated sandstone, siltstone, or slate. The excavation difficulty is low to high.

s *Illuvial accumulation of sesquioxides and organic matter*

This symbol is used with B to indicate an accumulation of illuvial, amorphous, dispersible complexes of organic matter and sesquioxides if both the organic-matter and sesquioxide components are significant and if either the color value or chroma, moist, of the horizon is 4 or more. The symbol is also used in combination with h as “Bhs” if both the organic-matter and sesquioxide components are significant and if the color value and chroma, moist, are 3 or less.

se *Presence of sulfides*

Typically dark colors (e.g., value <4, chroma <2); may have a sulphurous odor.

ss *Presence of slickensides*

This symbol indicates the presence of slickensides. Slickensides result directly from the swelling of clay minerals and shear failure, commonly at angles of 20 to 60 degrees above horizontal. They are indicators that other vertic characteristics, such as wedge-shaped peds and surface cracks, may be present.

t *Accumulation of silicate clay*

This symbol indicates an accumulation of silicate clay that either has formed *in situ* within a horizon or has been moved into the horizon by illuviation, or both. At least some part of the horizon should show evidence of clay accumulation either as coatings on surfaces of peds or in pores, as lamellae, or as bridges between mineral grains.

u *Presence of human-manufactured materials (artifacts)*

This symbol indicates the presence of manufactured artifacts that have been created or modified by humans, usually for a practical purpose in habitation, manufacturing, excavation, or construction activities. Examples of artifacts are processed wood products, liquid petroleum products, coal, combustion by-products, asphalt, fibers and fabrics, bricks, cinder blocks, concrete, plastic, glass, rubber, paper, cardboard, iron and steel, altered metals and minerals, sanitary and medical waste, garbage, and landfill waste.

v *Plinthite*

This symbol indicates the presence of iron-rich, humus-poor, reddish material that is firm or very firm when moist and hardens irreversibly when exposed to the atmosphere and to repeated wetting and drying.

w *Development of color or structure*

This symbol is used with B to indicate the development of color or structure, or both, with little or no apparent illuvial accumulation of material. It should not be used to indicate a transitional horizon.

x *Fragipan character*

This symbol indicates a genetically developed layer that has a combination of firmness and brittleness and commonly a higher bulk density than the adjacent layers. Some part of the layer is physically root-restrictive.

y *Accumulation of gypsum*

This symbol indicates an accumulation of gypsum (<50% by volume).

yy *Dominance of gypsum*

This symbol indicates an accumulation of gypsum (>50% by volume); light colored (e.g., value >7, chroma <4); may be pedogenically derived or inherited transformation of primary gypsum from parent material.

z *Accumulation of salts more soluble than gypsum*

This symbol indicates an accumulation of salts that are more soluble than gypsum; e.g., NaCl.

HUMUS. The well-decomposed, more or less stable part of the organic matter in mineral soils.

ILLUVIATION. The deposition by percolating water of solid particles, mostly clay or humus, within a soil horizon.

INTERFLUVE. The land lying between streams.

ISOCHRONOUS BOUNDARY. A gradational boundary between two sedimentary units indicating that they are approximately the same age. Opposed to a nonisochronous boundary, which by its abruptness indicates that it delineates units having significant age differences.

KROTOVINA. An animal burrow filled with soil.

LEACHING. The removal of soluble material from soil or other material by percolating water.

LOWSTAND. The lowest elevation reached by the ocean during a glacial period.

MANGAN. A thin coating of manganese oxide (cutan) on the surface of a sand grain, pebble, soil aggregate, or ped. Mangans also line pores or root channels and bridge sand grains.

MODERN SOIL. The portion of a soil section that is under the influence of current pedogenetic conditions. It generally refers to the uppermost soil regardless of age.

MODERN SOLUM. The combination of the A and B horizons in the modern soil.

MORPHOLOGY, SOIL. The physical make-up of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

MOTTLING, SOIL. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: abundance--few, common, and many; size--fine, medium, and coarse; and contrast--faint, distinct and prominent. The size measurements are these: fine, less than 5 mm in diameter along the greatest dimension; medium, from 5 to 15 mm, and coarse, more than 15 mm.

MRT (MEAN RESIDENCE TIME.) The average age of the carbon atoms within a soil horizon. Under ideal reducing conditions, the humus in a soil will have a C-14 age that is half the true age of the soil. In oxic soils humus is typically destroyed as fast as it is produced, generally yielding MRT ages no older than 300-1000 years, regardless of the true age of the soil.

MUNSELL COLOR NOTATION. Scientific description of color determined by comparing soil to a Munsell Soil Color Chart (Available from Macbeth Division of Kollmorgen Corp., 2441 N. Calvert St., Baltimore, MD 21218). For example, dark yellowish brown is denoted as 10YR3/4m in which the 10YR refers to the hue or proportions of yellow and red, 3 refers to value or lightness (0 is black and 10 is white), 4 refers to chroma (0 is pure black and white and 20 is the pure color), and m refers to the moist condition rather than the dry (d) condition.

OVERBANK DEPOSIT. Fine-grained alluvial sediments deposited from floodwaters outside of the fluvial channel.

OXIC. A soil having a high redox potential. Such soils typically are well drained, seldom being waterlogged or lacking in oxygen. Rubification in such soils tends to increase with age.

PALEO SOIL TONGUE. A soil tongue that formed during a previous soil-forming interval.

PALEOSEISMOLOGY. The study of prehistoric earthquakes through the examination of soils, sediments, and rocks.

PALEOSOL. A soil that formed on a landscape in the past with distinctive morphological features resulting from a soil-forming environment that no longer exists at the site. The former pedogenic process was either altered because of external environmental change or interrupted by burial.

PALINSPASTIC RECONSTRUCTION. Diagrammatic reconstruction used to obtain a picture of what geologic and/or soil units looked like before their tectonic deformation.

PARENT MATERIAL. The great variety of unconsolidated organic and mineral material in which soil forms. Consolidated bedrock is not yet parent material by this concept.

PED. An individual natural soil aggregate, such as a granule, a prism, or a block.

PEDOCHRONOLOGY. The study of pedogenesis with regard to the determination of when soil formation began, how long it occurred, and when it stopped. Also known as soil dating. Two ages and the calculated duration are important:

t_o = age when soil formation or aggradation began, ka

t_b = age when the soil or stratum was buried, ka

t_d = duration of soil development or aggradation, ky

Pedochronological estimates are based on available information. All ages should be considered subject to ±50% variation unless otherwise indicated.

PEDOCHRONOPALEOSEISMOLOGY. The study of prehistoric earthquakes by using pedochronology.

PEDOLOGY. The study of the process through which rocks, sediments, and their constituent minerals are transformed into soils and their constituent minerals at or near the surface of the earth.

PEDOGENESIS. The process through which rocks, sediments, and their constituent minerals are transformed into soils and their constituent minerals at or near the surface of the earth.

PERCOLATION. The downward movement of water through the soil.

pH VALUE. The negative log of the hydrogen ion concentration. Measurements in soils are usually performed on 1:1 suspensions containing one part by weight of soil and one part by weight of distilled water. A soil with a pH of 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid or "sour" soil is one that gives an acid reaction; an alkaline soil is one that gives an alkaline reaction. In words, the degrees of acidity or alkalinity are expressed as:

Extremely acid	<4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	>9.0
Used if significant:	
Very slightly acid	6.6 to 6.9
Very mildly alkaline	7.1 to 7.3

PHREATIC SURFACE. (See Water Table.)

PLANATION. The process of erosion whereby a portion of the surface of the Earth is reduced to a fundamentally even, flat, or level surface by a meandering stream, waves, currents, glaciers, or wind.

PLEISTOCENE. An epoch of geologic time extending from 10 ka to 1.8 Ma; it includes the last Ice Age.

PROFILE, SOIL. A vertical section of the soil through all its horizons and extending into the parent material.

QUATERNARY. A period of geologic time that includes the past 1.8 Ma. It consists of two epochs--the Pleistocene and Holocene.

PROGRADATION. The building outward toward the sea of a shoreline or coastline by nearshore deposition.

REFUGIUM. A place of refuge. Plants, animals, and soil minerals tend to accumulate only in the most ideal areas when surrounded by a hostile environment.

RELICT SOIL. A surface soil that was partly formed under climatic conditions significantly different from the present.

RUBIFICATION. The reddening of soils through the release and precipitation of iron as an oxide during weathering. Munsell hues and chromas of well-drained soils generally increase with soil age.

SALINE SOIL. A soil that contains soluble salts in amounts that impair the growth of crop plants but that does not contain excess exchangeable sodium.

SAND. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 mm. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

SECONDARY FAULT. A minor fault that bifurcates from or is associated with a primary fault. Movement on a secondary fault never occurs independently of movement on the primary, seismogenic fault.

SHORELINE ANGLE. The line formed by the intersection of the wave-cut platform and the sea cliff. It approximates the position of sea level at the time the platform was formed.

SILT. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 mm) to the lower limit of very find sand (0.05 mm.) Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

SLICKENSIDES. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may form along a fault plane; at the bases of slip surfaces on steep slopes; on faces of blocks, prisms, and columns undergoing shrink-swell. In tectonic slickensides the striations are strictly parallel.

SLIP RATE. The rate at which the geologic materials on the two sides of a fault move past each other over geologic time. The slip rate is expressed in mm/yr, and the applicable duration is stated. Faults having slip rates less than 0.01 mm/yr are generally considered inactive, while faults with Holocene slip rates greater than 0.1 mm/yr generally display tectonic geomorphology.

SMECTITE. A fine, platy, aluminosilicate clay mineral that expands and contracts with the absorption and loss of water. It has a high cation-exchange capacity and is plastic and sticky when moist.

SOIL. A natural, three-dimensional body at the earth's surface that is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

SOIL SEISMOLOGIST. Soil scientist who studies the effects of earthquakes on soils.

SOIL SLICKS. Curvilinear striations that form in swelling clayey soils, where there is marked change in moisture content. Clayey slopes buttressed by rigid materials may allow minor amounts of gravitationally driven plastic flow, forming soil slicks sometimes mistaken for evidence of tectonism. Soil slicks disappear with depth and the striations are seldom strictly parallel as they are when movement is major. (See also SLICKENSIDES.)

SOIL TECTONICS. The study of the interactions between soil formation and tectonism.

SOIL TONGUE. That portion of a soil horizon extending into a lower horizon.

SOLUM. Combined A and B horizons. Also called the true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

STONELINE. A thin, buried, planar layer of stones, cobbles, or bedrock fragments. Stonelines of geological origin may have been deposited upon a former land surface. The fragments are more often pebbles or cobbles than stones. A stoneline generally overlies material that was subject to weathering, soil formation, and erosion before deposition of the overlying material. Many stonelines seem to be buried erosion pavements, originally formed by running water on the land surface and concurrently covered by surficial sediment.

STRATH TERRACE. A gently sloping terrace surface bearing little evidence of aggradation.

STRUCTURE, SOIL. The arrangement of primary soil particles into compound particles or aggregates that are separated from adjoining aggregates. The principal forms of soil structure are--platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are either single grained (each grain by itself, as in dune sand) or massive (the particles adhering without any regular cleavage, as in many hardpans).

SUBSIDIARY FAULT. A branch fault that extends a substantial distance from the main fault zone.

TECTOTURBATION. Soil disturbance resulting from tectonic movement.

TEXTURE, SOIL. Particle size classification of a soil, generally given in terms of the USDA system which uses the term "loam" for a soil having equal properties of sand, silt, and clay. The basic textural classes, in order of their increasing proportions of fine particles are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sand clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

TOPOSEQUENCE. A sequence of kinds of soil in relation to position on a slope. (See also CATENA.)

TRANSLOCATION. The physical movement of soil particles, particularly fine clay, from one soil horizon to another under the influence of gravity.

UNIFIED SOIL CLASSIFICATION SYSTEM. The particle size classification system used by the U.S. Army Corps of Engineers and the Bureau of Reclamation. Like the ASTM and AASHO systems, the sand/silt boundary is at 80 um instead of 50 um used by the USDA. Unlike all other systems, the gravel/sand boundary is at 4 mm instead of 2 mm and the silt/clay boundary is determined by using Atterberg limits.

VERTISOL. A soil with at least 30% clay, usually smectite, that fosters pronounced changes in volume with change in moisture. Cracks greater than 1 cm wide appear at a depth of 50 cm during the dry season each year. One of the ten USDA soil orders.

WATER TABLE. The upper limit of the soil or underlying rock material that is wholly saturated with water. Also called the phreatic surface.

WAVE-CUT PLATFORM. The relatively smooth, slightly seaward-dipping surface formed along the coast by the action of waves generally accompanied by abrasive materials.

WEATHERING. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

WETTING FRONT. The greatest depth affected by moisture due to precipitation.

yr B.P. Uncorrected radiocarbon age expressed in years before present, calculated from 1950. Calendar-corrected ages are expressed in ka, or, if warranted, as A.D. or B.C.

Earth Systems
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April 9, 2020 File No.: 303594-001

Mr. William Lee
291 Old Ranch Road
Hollister, CA 95023

PROJECT: LEE PROPERTY
291 OLD RANCH ROAD
APN 0253200040
HOLLISTER, SAN BENITO COUNTY, CALIFORNIA

SUBJECT: Review of Earthquake Fault Investigation

REF.:
1. DRAFT Surface Fault-Rupture Hazard Investigation, Assessor Parcel Number 025-320-004-000, Old Ranch Road, San Benito County, California, prepared by Berlogar Stevens & Associates, dated January 15, 2020.
2. Review of Fault Investigation, Lee Property, 291 Old Ranch Road, APN 0253200040, Hollister, San Benito County, California, prepared by Earth Systems Pacific, dated March 11, 2020.
3. Surface Fault-Rupture Hazard Investigation, Assessor Parcel Number 025-320-004-000, Old Ranch Road, San Benito County, California, prepared by Berlogar Stevens & Associates, dated March 27, 2020.

Dear Mr. Lee:

In accordance with your request, we have prepared this geologic peer review letter conveying our final review of the fault investigation report prepared for your property at 291 Old Ranch Road in the unincorporated Hollister area of San Benito County, California. The report was prepared by Berlogar Stevens & Associates (BSA; Reference 3 above). Portions of the site lie within a State of California Earthquake Fault Zone established around the Tres Pinos fault. Our review was conducted based on our understanding that San Benito County accepted Earth Systems Pacific's qualifications to provide independent peer review services on behalf of the County.

Earth Systems (ESP) previously reviewed a *draft* copy of the report (Reference 1) and prepared a geologic peer review letter (Reference 2). Our peer review letter summarized our Scope of Services and conveyed our field observations and review comments. Our letter recommended that our comments should be addressed, the report revised accordingly, and a copy of the revised report provided to the County's independent geologic peer review consultant (ESP) for review.

Report Review

The report (Reference 3) was reviewed for consistency with CGS Note 49, Guidelines for Evaluating the Hazard of Surface fault Rupture and current common engineering geologic practices in this area.

The report included a discussion of the following topics:

- Review of geologic literature and aerial imagery,
- Regional and local geologic setting,
- Faulting and historic seismicity,
- Geologic reconnaissance,
- Geologic trench exposures, and
- Conclusions.

The investigation and report of findings and conclusions are in general accordance with CGS Notes 48 and 49. Our review comments conveyed in Reference 2 have been adequately addressed. It is our opinion that the site geologic conditions are accurately represented in the referenced report. We recommend that the County of San Benito accept the report as fulfilling State of California Public Resources Code, Division 2, Geology Mines and Mining, Chapter 7.5 Earthquake Fault Zones, Sections 2621, 2621.5, 2621.6, and 2624.

We appreciate the opportunity to have been of service. Please feel free to contact us at your convenience if you have any questions or require additional information.

Sincerely,

Earth Systems Pacific

John Feltman
Engineering Geologist

Doc. No.: 2004-009.LTR/ev

Appendix E

Geotechnical Investigation

Stevens Ferrone & Bailey Engineering Company, Inc

Geotechnical Engineering
Engineering Geology
Storm Water Management
Construction Observation & Testing Services

April 28 2020

GEOTECHNICAL INVESTIGATION
LEE PROPERTY DEVELOPMENT
291 OLD RANCH ROAD
HOLLISTER, CALIFORNIA
SFB PROJECT NO. 819-1

Prepared For:

Mr. William Lee
291 Old Ranch Road
Hollister, CA 95023

Prepared By:

Stevens, Ferrone & Bailey Engineering Company, Inc.

Jonathan Bailey, P.E., G.E.
Civil/Geotechnical Engineer

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Civil/Geotechnical Engineer
Certified Engineering Geologist

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1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for the proposed new residential development to be located at 291 Old Ranch Road in Hollister, California as shown on the Site Plan, Figure 1. The purpose of our investigation was to evaluate the geological and geotechnical conditions at the site and provide recommendations regarding the geotechnical engineering aspects of the project.

Based on the information indicated on the Site Plan, as well as information provided by Mr. William Lee, it is our understanding that the project will consist of developing approximately 38.6 acres for a new subdivision consisting of approximately 127 single-family, wood-frame, detached homes and lots; the actual number of homes and lots may vary depending upon the development of grading plans. The new residential development will also include a stormwater detention basin and possibly the realignment of an existing drainage channel. Cut and fill grading is proposed and retaining walls may be used to develop flat building pads. Associated underground utilities and paved roadways will be constructed.

The conclusions and recommendations provided in this report are based upon the information presented above; Stevens, Ferrone & Bailey Engineering Company, Inc. (SFB) should be consulted if any changes to the project occur to assess if the changes affect the validity of this report.

2.0 SCOPE OF WORK

Our investigation of the site included the following scope of work:

- Reviewing published and unpublished geotechnical and geological literature relevant to the site;
- Reviewing aerial images of the site and surrounding area;
- Reviewing a previous geotechnical engineering report[1], including the results of three exploratory borings and associated laboratory testing;
- Reviewing a previous supplemental geotechnical engineering report[2], including the results of two exploratory borings and associated laboratory testing;
- Reviewing a previous preliminary geotechnical engineering report[3], including the results of five exploratory borings and associated laboratory testing;
- Reviewing a fault-rupture hazard report[4], including the results of six exploratory trenches;
- Performing a reconnaissance of the site and surrounding area;
- Performing a subsurface exploration program to log and sample twelve exploratory borings to a maximum depth of about 21 feet;
- Performing laboratory testing of samples retrieved from the borings;
- Performing engineering analysis of the field and laboratory data; and
- Preparing this report.

The data obtained and the analyses performed were for the purpose of providing geotechnical design and construction criteria for site earthwork, underground utilities, surface and subsurface drainage, building foundations, retaining walls, flatwork, and pavements. Evaluating the potential for toxicity of onsite materials or groundwater (including mold) and flooding were beyond our scope of work.

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[1]Earth Systems Pacific report titled, *Geotechnical Engineering Report, Lee Residence Additions, 291 Old Ranch Road, Hollister, California,* prepared for William and Michelle Lee, dated September 1, 2006.
[2]Earth Systems Pacific supplemental report titled, *Geotechnical Engineering Report Update,* prepared for Bill and Michelle Lee, dated January 10, 2007.
[3]Haro, Kasunich and Associates, Inc. report titled, *Preliminary Geotechnical Investigation for 291 Old Ranch Road, San Benito County, California,* prepared for William Lee, dated July 24, 2008.
[4]Berlogar Stevens & Associates report titled, ***DRAFT** Surface Fault-Rupture Hazard Investigation, Assessor Parcel Number 025-320-0004-000, Old Ranch Road, San Benito County, California,* prepared for Bill Lee, dated January 15, 2020.

3.0 SITE INVESTIGATION

Reconnaissance of the site and surrounding area was performed on June 14, 2018 and April 6, 2020. A subsurface exploration program was performed on April 13 and 14, 2020, using a truck-mounted drill rig equipped with 4-inch diameter, continuous flight, solid stem augers. Twelve exploratory borings were drilled to a maximum depth of about 21 feet.

Previously, three exploratory borings were performed by Earth Systems Pacific (ESP) on July 13, 2006 to a maximum depth of about 21-1/2 feet. ESP also performed supplemental subsurface exploration on December 8, 2006, that included two additional exploratory borings to a maximum depth of about 15 feet. Haro, Kasunich and Associates, Inc. (HKA) previously drilled five exploratory borings on June 19, 2008, to a maximum depth of about 31-1/2 feet. Berlogar, Stevens & Associates (BSA) performed a surface fault-rupture hazard investigation between November 18, 2019 and December 14, 2019 that included six exploratory trenches to a maximum depth of about 15 feet.

The approximate locations of our borings and all previous borings and trenches are shown on the Site Plan, Figure 1. Logs of our borings and details regarding our field investigation are included in Appendix A. The results of our laboratory tests are discussed in Appendix B. Logs of the previous borings and trenches by others, including associated laboratory testing, are provided in Appendix C. It should be noted that changes in the surface and subsurface conditions can occur over time as a result of either natural processes or human activity and may affect the validity of the conclusions and recommendations in this report.

The trenches performed by BSA were either loosely backfilled or not backfilled at the time of our field investigation. These trenches will require over-excavation and re-compaction at the time of mass grading in accordance with the recommendations contained in this report. The approximate locations of the trenches are shown on the attached Figure 1.

3.1 Site History and Surface Description

At the time of our investigation and as shown on Figure 1, the site was bounded by existing residential properties and Old Ranch Road on the west, existing residential properties on the north, and agricultural land/open space on the other sides. The site was rectangular in shape and approximately 38.6 acres in size with gently rolling hills and a seasonal drainage channel traversing through the eastern portion of the property. The drainage channel entered the site near the middle of the eastern property boundary and drained towards the northwest to the approximate middle of the northern property boundary. The site sloped downwards towards the drainage channel with embankment slopes varying from about 4:1 (horizontal to vertical) to 7:1 in steeper areas and 11:1 to 18:1 in more gradual areas. Two fill deposits were also observed near the northern boundary on the eastern half of the site with maximum heights of about 8 to 10 feet.

A single-story, wood-frame residence with a barn and associated facilities occupied the southwestern corner of the site. A gravel covered driveway provided access to the residence from Old Ranch Road. The residence was surrounded by various concrete and paver walkways and a few small diameter trees. Two rows of small to medium diameter trees were observed along the southwestern property boundary. At the time of our field exploration, the site surface vegetation consisted of a heavy growth of grasses and weeds.

Based on our review of historical topographic maps and aerial photographs of the site and vicinity, it is our understanding that the site prior to 1971 was vacant with a seasonal drainage channel traversing through it. Between 1971 and 1981, a house was built near the center of the property at the end of Old Ranch Road along with a barn south of the site entrance. No other improvements were noticed at the site until 2007 when the original house was demolished and a new house was built near the existing barn. Aside from annual tilling and hay farming, the site has had no other improvements as of the date of this report.

3.2 Subsurface Description

Our borings encountered soft to very stiff clayey fills, and loose sandy and soft clayey native soils, that mantle the site to depths of about 1 to 2-1/2 feet. Below these surficial fills and soils, our borings generally encountered interbedded stiff to hard silty clays with varying sand and gravel contents and medium dense to very dense sands that extended to the maximum depth explored of about 21 feet.

The previous Borings B-1 through B-3 performed by ESP encountered interbedded very stiff to hard clays with varying sand and gravel contents and medium dense to dense clayey sands to the maximum depth explored of about 21-1/2 feet. ESP Borings B-4 and B-5 encountered stiff to hard sandy clays that extended to depths of about 3 to 8 feet. Underlying the clays soils, medium dense to dense silty to clayey sands overlaid medium dense to dense silty and clayey gravels to the maximum depth explored of about 15 feet.

The previous borings performed by HKA encountered interbedded stiff to hard silty clays and sandy silts and medium dense to dense sands with varying gravel contents to the maximum depth explored of about 31-1/2 feet.

BSA reported that Trenches T-1, T-4, and T-6 encountered soft to stiff sandy clayey fill materials extending to depths of about 2 to 9 feet whereas the other BSA trenches encountered fill materials or weak soils to depths of about 2 feet, except for Trench T-5 that encountered localized fill (backfill of a septic pit) to a depth of 10 feet. Underlying these fill materials and weak soils, BSA reportedly encountered interbedded stiff to hard sandy clays and loose to dense gravelly sands and sands with varying clay contents to the maximum depth explored in the trenches of about 15 feet.

The upper approximately 1 to 2-1/2 feet of surficial native soils, and the fill materials encountered in the borings and trenches, are weak and potentially compressible due to historical farming practices at the site and also due to season expansion and contraction. The results of laboratory testing indicate that the more clayey, near-surface soils encountered in our borings and previous boring by others have a moderate to high plasticity and a moderate to critical expansion potential.

Detailed descriptions of the materials encountered in our exploratory borings are presented on our boring logs in Appendix A. Logs of the previous borings and trenches by others, including associated laboratory testing, are provided in Appendix C. Our attached boring logs and related information depict location-specific subsurface conditions encountered during our field investigation. The approximate locations of our borings were determined by pacing, measurements, and/or alignment from landmark references, and should be considered accurate only to the degree implied by the method used.

3.3 Groundwater

Groundwater was encountered in Boring SFB-10 (near the drainage channel) at a depth of about 7 feet at the end of drilling. No groundwater was encountered in our other borings to the maximum depth explored of about 21 feet. Our borings were backfilled with lean cement grout in accordance with San Benito County Water District requirements prior to leaving the site. No groundwater was encountered in the previous borings and trenches by others at the site to a maximum depth explored of about 31-1/2 feet.

According to Rosenburg and historical data,[5] groundwater in the vicinity of the site has been measured at depths greater than 50 feet. According to the 2018 San Benito County Water District Annual Groundwater Report, groundwater in the vicinity of the site was reported to be at depth of about 140 feet.[6] Therefore, the groundwater encountered in Boring SFB-10 is likely to be a localized and perched, seasonal zone of water.

It should be noted that borings and trenches might not have been left open for a sufficient period of time to establish equilibrium groundwater conditions. In addition, fluctuations in the groundwater level could occur due to change in seasons, variations in rainfall, and other factors.

[5]Rosenberg, 1998, *Historical High Ground Water Level Map*, Liquefaction Susceptibility of the Hollister Area, San Benito County, California Report, Plate 2.
[6]Todd Groundwater, December 2018, *San Benito County Water District Annual Groundwater Report 2018*, Figure C-4.

3.4 Hydrologic Soil Group

The surface soils of the site have been mapped as Rincon silty clay loam (2 to 9 percent slopes, MLRA 14) in the western half of the site, San Benito clay loam (9 to 15 percent slopes, MLRA 15) in the northeastern portion of the site, and San Benito clay loam (15 to 30 percent slopes, eroded, MLRA 15) the rest of the site by USDA Web Soil Survey (WSS).[7] The soils were assigned to Hydrologic Soil Group C by USDA Natural Resources Conservation Service (NRCS); the soils have been categorized as having very low to moderately high transmission rates (approximately 0.0 to 0.60 inches per hour). Group C soils are defined as having a slow infiltration rate when thoroughly wet (high runoff potential) and may consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture to fine texture.

3.5 Geology and Seismicity

According to Dibblee (1979)[8] and Rosenberg (1998),[9] the majority of the site is underlain by intermediate Pleistocene alluvial fan deposits that are generally composed of moderately consolidated, moderately to poorly sorted gravels, sands, and silts. A small section of the drainage channel near the eastern boundary of the site is mapped by both geologists as Holocene alluvial deposits that may consist of unconsolidated, heterogenous, moderately sorted silts and sands with discontinuous lenses of clay and silty clays. During our reconnaissance, we did not observe evidence of landsliding.

The project site is located in the San Benito Valley which is considered one of the most seismically active regions in the United States. Significant earthquakes have occurred in the area and are believed to be associated with crustal movements along a system of sub-parallel fault zones that generally trend in a northwesterly direction. According to the Special Studies Zones Map of the Tres Pinos Quadrangle (Revised 1986), the southwest portion of the site is located within an Alquist-Priolo Earthquake Fault Zone as designated by the State of California.[10] BSA performed a surface fault-rupture hazard investigation and compiled their findings into a report.[11] Based on their subsurface exploration, BSA concludes that no evidence of faulted Pleistocene strata in the southwest portion of the site was found and the potential for ground surface rupture within the State of California's CGS Special Studies Zone is low. BSA noted, however, that three fault traces

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[7]USDA NRCS, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed 04/10/2020.

[8]Dibblee, 1979, *Preliminary Geologic Map of the Tres Pinos Quadrangle, San Benito County, California*, USGS Open-File Report 79-702.

[9]Rosenberg, 1998, *Quaternary Geologic Map*, Liquefaction Susceptibility of the Hollister Area, San Benito County, California Report, Plate 3.

[10]Byrant and Hart, *Fault-Rupture Hazard Zones in California*, CDMG Special Publication 42, Interim Revision 2007.

[11]Berlogar Stevens & Associates report titled, ***DRAFT** Surface Fault-Rupture Hazard Investigation, Assessor Parcel Number 025-320-0004-000, Old Ranch Road, San Benito County, California*, prepared for Bill Lee, dated January 15, 2020.

were revealed in Trench T-2 near the southeast corner of the site. BSA recommended that a building exclusion zone be established in that area. We recommend referring to the BSA report for further details.

Earthquake intensities will vary throughout the San Benito Valley, depending upon numerous factors including the magnitude of earthquake, the distance of the site from the causative fault, and the type of materials underlying the site. The site will likely be subjected to at least one moderate to severe earthquake that will cause strong ground shaking.

According to the U.S. Geological Survey's Unified Hazard Tool and applying the Dynamic: Conterminous U.S. 2014 model (v4.2.0, accessed 04/23/2020), the resulting deaggregation calculations indicate that the site has a 10% probability of exceeding a peak ground acceleration of about 0.87g in 50 years (design basis ground motion based on stiff soil site condition; mean return time of 475 years). The actual ground surface acceleration might vary depending upon the local seismic characteristics of the underlying bedrock and the overlying unconsolidated soils.

3.6 Liquefaction & Dynamic Densification

Soil liquefaction is a phenomenon primarily associated with saturated, cohesionless, soil layers located close to the ground surface. These soils lose strength during cyclic loading, such as imposed by earthquakes. During the loss of strength, the soil acquires mobility sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface. According to Rosenberg[12] and San Benito County GIS,[13] the site is located in an area that has been characterized as having very low liquefaction susceptibility. As of the date of this report, the liquefaction potential of the site has not been evaluated by the State of California.[14] Based on our review of available literature and the results of field explorations at the site, it is our opinion that the potential for ground surface damage at the site resulting from liquefaction and lateral spreading is very low.

Dynamic densification of soils can occur when the soils are subjected to cyclic loads similar to those generated by earthquakes. The densification can occur within non-saturated, low plasticity, dry, uniformly graded sands and sandy silts of low density. These types of soils are the most susceptible to dynamic densification and have the largest volume change potential. The non-saturated, native, sandy soils encountered in our borings below the soil mantle, however, had high densities, were damp to moist, and have a very low potential for dynamic densification. IN

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[12]Rosenberg, 1998, *Relative Liquefaction Susceptibility Map,* Liquefaction Susceptibility of the Hollister Area, San Benito County, California Report, Plate 4.

[13]San Benito County, https://www.cosb.us/county-departments/geographic-information-systems-gis, accessed 04/10/2020.

[14]State of California, Seismic Hazards Mapping Act, 1990.

addition, the loose, non-saturated surface soils will be densified during the mass grading operations and will not be subject to dynamic densification during earthquake shaking.

4.0 CONCLUSIONS AND RECOMMENDATIONS

It is our opinion that the site is suitable for the proposed project from a geotechnical engineering standpoint. The conclusions and recommendations presented in this report should be incorporated in the design and construction of the project to reduce soil or foundation related issues. The following are the primary geotechnical considerations for development of the site.

WEAK SOIL AND FILL RE-COMPACTION: Weak and highly compressible soils and fills mantle the development area of the site to depths of about 2-1/2 feet except at the location of BSA Trench T-1 (fill to depths of about 9 feet), Trench T-4 (fill to depths of about 4 feet), Trench T-5 (localized septic pit backfill to depths of about 10 feet), and Trench T-6 (fill to depths of about 6 feet). Please refer to the trench logs in Appendix C for actual fill locations and depths. In addition, the existing BSA trenches have been either loosely backfilled or left open and will require over-excavation and re-compaction during the mass grading operations; please refer to Figure 1 for the approximate trench locations.

In order to provide support of the planned improvements (such as fills and graded slopes, building pads, foundations, roadways, detention basins, and driveways), we recommend the weak and highly compressible soils and fills be over-excavated and re-compacted. In the areas beyond the trenches noted above, the process can consist of over-excavating the existing site grades about 2 feet, scarifying and re-compacting the bottom 12 inches in-place, and replacing the excavation with compacted fill materials. In the areas of deeper fill materials, as noted in the trenches listed above, we recommend the fill materials be over-excavated to a depth where competent native soil is encountered. The over-excavation of the fill materials encountered in the trenches can be accomplished at the time of over-excavating and re-compacting the existing trench locations shown on Figure 1. In addition, if the proposed development will extend near the fill deposits shown on Figure 1 in the northeast corner of the site, we recommend these fill deposits also be removed.

There would be no need to over-excavate soils and fills within areas that do not support improvements, such as in planned open spaces beyond the limits of improvements, fills, graded slopes, and the lots. Where the over-excavation limits abut adjacent property, SFB should be consulted to determine the actual vertical and lateral extent of over-excavation so that adjacent property is not adversely impacted. Over-excavations should be performed so that no more than 5 feet of differential fill thickness will occur below the proposed building pads. Removed onsite fills and soils can be used as new fill provided it is placed and compacted in accordance with the recommendations presented in this report.

The extent of the weak soil and fill removal and re-compaction will vary across the site and should be determined in the field by SFB at the time of the earthwork operations. SFB can also provide an over-excavation plan once final grading plans have been prepared.

EXPANSION POTENTIAL: Most of the clayey soils were found to be moderately to highly expansive and will be subjected to volume changes during seasonal moisture content fluctuations. To reduce the potential for post-construction distress to the proposed structures resulting from shrinkage and swelling of these materials, we recommend that the proposed structures be supported on a post-tensioned slab foundation system that is designed to reduce the impact of the expansive soils. It should be noted that special design considerations will also be required for exterior slabs.

Localized pockets of critically expansive clays were encountered in some of the borings. We recommend these expansive clays either (1) be completely over-excavated and mixed into planned fill materials or (2) be capped with at least 3 feet of engineered fill whose source is from elsewhere onsite. If alternative (1) is used, SFB should observe the over-excavation and mixing process so that the highly expansive clays are not placed in any one localized area. SFB should be consulted at the time of the grading operations to identify the locations of these critically expansive clays.

CUT/FILL TRANSITIONS AND DIFFERENTIAL FILL THICKNESS: Proposed grading may result in cut/fill transitions across building pads and differential fill thickness greater than 5 feet below building pads. In order to reduce the potential for excessive differential movement across the proposed home foundations, we recommend that foundations bear entirely on an engineered fill layer at least 3 feet thick and that no more than 5 feet of differential fill thickness exist below foundations. Over-excavation and re-compaction below foundations will likely be necessary in some lots to satisfy this criterion.

EROSION AND SLOPE MAINTENANCE: Drainage and erosion control measures should be maintained during and after construction. Short-term and long-term erosion control are critical for the stability of any exposed cut and fill slopes, and may be necessary for the natural slopes in order to reduce sediment accumulation in the drainage systems. We recommend all exposed cut and fill slopes be seeded or planted with appropriately designed erosion resistant vegetation and fertilizer. The vegetation should be appropriately irrigated in order to establish and maintain growth. Over-watering should be avoided in order to reduce surficial instability and erosion. Vegetation should be deeply rooted to aid in the interlocking of the near-surface soils. Additional seeding and planting may be necessary in localized areas if the initial seeding or planting is unsuccessful. After seeding, fertilizing, and planting, staked erosion control blankets might be necessary to further stabilize the surficial soils.

Additional erosion control measures will need to be designed and implemented prior to the rainy season based upon the site's configuration. The measures could include straw wattles, silt fencing, hay bales, sediment collection basins, and filtration systems. Silt fencing should be designed for the site's soil type. Storm water discharge and release points from silt fencing should be designed to reduce erosion. In areas exposed to winter rains, we recommend an erosion control plan be prepared and implemented at least one month prior to the beginning of the rainy season. The erosion control measures will require inspection, modification, and re-mediation during the rainy season in order to comply with regulatory requirements.

SEEPAGE, SURFACE, AND SUBSURFACE WATER: Water seepage will occur during and after periods of rainfall and as a result of irrigation by "upstream" neighbors. After construction is complete, seepage may occur as the seepage patterns below the ground surface resulting from irrigation and storm water flow develop over time. Surface water should not be allowed to flow over the top of slopes and retaining walls. The actual location and extent of subdrains should be assessed by SFB during the development of the grading and improvement plans, and determined in the field by SFB at the time of construction.

CORROSION POTENTIAL: Four onsite soil sample was tested for pH (ASTM D4972), chlorides (ASTM D4327), sulfates (ASTM D4327), sulfides (ASTM D4658M), resistivity at 100% saturation (ASTM G57), and Redox potential (ASTM D1498) for use in evaluating the potential for corrosion on concrete and buried metal, such as utilities and reinforcing steel. The results of these tests are included under a separate cover. We recommend these test results be forwarded to your underground contractors, pipeline designers, and foundation designers and contractors so that they can design and install corrosion protection measures. Please be aware that we are not corrosion protection experts; we recommend corrosion protection measures be designed and constructed so that all concrete and metal, including foundation post-tensioned cables and their end cut-offs, are protected against corrosion. We also recommend additional testing be performed if the test results are deemed insufficient by the designers and installers of the corrosion protection. Landscaping soils typically contain fertilizers and other chemicals than can be highly corrosive to metals and concrete; landscaping soils commonly are in contact with foundations. Consideration should be given to testing the corrosion potential characteristics of proposed landscaping soils and other types of imported or modified soils in order to design and provide protection against corrosion for the foundation and pipelines.

ADDITIONAL RECOMMENDATIONS: Detailed drainage, earthwork, foundation, retaining wall, and pavement recommendations for use in design and construction of the project are presented below. We recommend SFB review the design and specifications to verify that the recommendations presented in this report have been properly interpreted and implemented in the design, plans, and specifications. We also recommend SFB be retained to provide consulting services and to perform construction observation and testing services during the construction phase of the project to observe and test the implementation of our recommendations, and to provide supplemental or revised recommendations in the event conditions different than those described in this report are encountered. We are not responsible for misinterpretation of our recommendations.

It is the responsibility of the contractors to provide safe working conditions at the site at all times. We recommend all OSHA regulations be followed, and excavation safety be ensured at all times. It is beyond our scope of work to provide excavation safety designs.

4.1 Earthwork

4.1.1 Clearing and Site Preparation

The site should be cleared of all obstructions including designated structures and their entire foundation systems, designated utilities and pipelines and their associated backfill, designated pavements and their underlying baserock, gravel, designated trees and their associated entire root systems, and debris. Holes resulting from the removal of underground obstructions extending below the proposed finish grade should be cleared and backfilled with fill materials as specified in **Section 4.1.5, *Fill Material***, and compacted to the requirements in **Section 4.1.6, *Compaction***. Tree roots may extend to depths of about 3 to 4 feet. Wells and septic systems, if they exist, should be abandoned in accordance with San Benito County standards.

From a geotechnical standpoint, any existing trench backfill materials, clay or concrete pipes, gravel, pavements, and concrete that are removed can be used as new fill onsite provided debris is removed and it is broken up to meet the size requirement for fill material in **Section 4.1.5, *Fill Material***. We recommend fill materials composed of broken up concrete or asphalt concrete not be located within 3 feet of the ground surface in yard areas. Consideration should be given to placing these materials below pavements, directly under building footprints, or in deeper excavations. We recommend backfilling operations for any excavations be performed under the observation and testing of SFB.

At least two weeks prior to grading, areas containing surface vegetation should be mowed and the cut grasses and weeds removed from the site or stockpiled for use in landscaping. After mowing, the site should be disced. Portions of the site containing heavy surface vegetation that is not removed by discing should be stripped to an appropriate depth to remove these materials. The amount of actual stripping should be determined in the field by SFB at the time of construction. Stripped materials should be removed from the site or stockpiled for later use in landscaping, if desired.

4.1.2 Weak Soil and Fill Re-Compaction

As described previously in **Section 4.0**, we recommend the weak and highly compressible soils and fills be over-excavated and re-compacted. In the areas beyond the BSA exploratory trenches, the process can consist of over-excavating the existing site grades 2 feet, scarifying and re-compacting the bottom 12 inches in-place, and replacing the excavation with compacted fill materials. In the areas of deeper fill materials located in the previously noted trenches, we recommend the fill materials be over-excavated to a depth where competent native soil is encountered. The over-excavation of the fill materials encountered in the trenches can be accomplished at the time of over-excavating and re-compacting the existing trench locations shown on Figure 1. In addition, if the proposed development will extend near the fill deposits shown on Figure 1 in the northeast corner of the site, we recommend these fill deposits also be removed to a depth where competent soil is encountered.

Where the over-excavation limits abut adjacent property, SFB should be consulted to determine the actual vertical and lateral extent of over-excavation so that adjacent property is not adversely impacted. Over-excavations should be performed so that no more than 5 feet of differential fill thickness exists below the proposed building foundations. The extent of the removal and re-compaction may vary across the site and should be determined in the field by SFB at the time of the earthwork operations.

Removed fill and soil materials may be used as new fill onsite provided it satisfies the recommendations provided in **Section 4.1.5, *Fill Material***. Compaction should be performed in accordance with the recommendations in **Section 4.1.6, *Compaction***.

4.1.3 Building Pads

Proposed grading may result in cut/fill transitions across building pads and differential fill thickness greater than 5 feet below building pads. In order to reduce the potential for excessive differential movement across the proposed home foundations due to cut/fill transitions and expansive soils, we recommend that foundations bear entirely on an engineered fill layer at least 3 feet thick and that no more than 5 feet of differential fill thickness exist below foundations. Over-excavation and re-compaction below foundations will likely be necessary in some lots to satisfy this criterion. If requested, SFB can prepare an over-excavation plan once the final grading plans have been developed.

4.1.4 Subgrade Preparation

After the completion of clearing, site preparation, and weak soil and fill re-compaction, soil exposed in areas to receive improvements (such as engineered fill, building foundations, driveways, exterior flatwork, and pavements) should be scarified to a depth of about 12 inches, moisture conditioned to approximately 3 to 5 percent over optimum water content, and compacted to the requirements for structural fill.

If building pads or pavement subgrade are allowed to remain exposed to sun, wind, or rain for an extended period of time, or are disturbed by borrowing animals or vehicles, the exposed subgrade or pavement subgrade may need to be reconditioned (moisture conditioned and/or scarified and recompacted) prior to foundation or pavement construction. SFB should be consulted on the need for subgrade reconditioning when the subgrade is left exposed for extended periods of time.

4.1.5 Fill Material

From a geotechnical and mechanical standpoint, onsite soils having an organic content of less than 3 percent by volume can be used as fill. Fill should not contain rocks or lumps larger than 6 inches in greatest dimension with not more than 15 percent larger than 2.5 inches. If required, imported fill should have a plasticity index of 25 or less and have a significant amount of cohesive fines.

In addition to the mechanical properties specifications, all imported fill material should have a resistivity (100% saturated) no less than the resistivity for the onsite soils, a pH of between approximately 6.0 and 8.5, a total water soluble chloride concentration less than 300 ppm, and a total water soluble sulfate concentration less than 500 ppm. We recommend import samples be submitted for corrosion and geotechnical testing at least two weeks prior to being brought onsite.

4.1.6 Compaction

In building lots and roadways, we recommend the upper 5 of fill be compacted between 88 and 92 percent relative compaction, and fill below a depth of 5 feet be compacted to at least 90 percent relative compaction, as determined by ASTM D1557 (latest edition). On fill slopes, we recommend the upper 5 feet be compacted between 90 and 95 percent, and fill below a depth of 5 feet be compacted to at least 95 percent relative compaction. The upper 6 inches of subgrade soils beneath pavements should be compacted to at least 95 percent relative compaction.

We recommend fill be moisture conditioned approximately 3 to 5 percent over optimum water content. Fill material should be spread and compacted in lifts not exceeding approximately 8 to 12 inches in un-compacted thickness.

4.1.7 Engineered Slopes

4.1.7.1 General

We recommend cut and non-reinforced fill slopes not exceed an inclination of 2:1 (horizontal to vertical). Steeper fill slopes are feasible provided they are mechanically reinforced with geogrid; if requested, SFB can provide detailed designs of slope reinforcing. We recommend all cut and fill slopes be constructed with surface drainage collection and discharge facilities. Shallow slope movements such as surficial sloughing, toppling, and flows, however, could still occur as a result of erosion and unanticipated water infiltration. To decrease the potential for shallow slope movement, the drainage and erosion control recommendations presented in this report should be implemented in the design and construction of the site. The implemented drainage and erosion control measures should be maintained during and after construction. Slope benches should be constructed in accordance with the latest edition of the California Building Code. Slope maintenance may include re-establishing drainage patterns, controlling water infiltration, and repairing shallow slope movements.

4.1.7.2 Fill Slopes

We recommend fill slopes be built using well-mixed, moisture conditioned, and well blended engineered fill to reduce the potential for slope expansion and creeping. We also recommend that fill slopes be over-built approximately 2 feet horizontally and then trimmed back to finished grades. Where fills are placed on slopes steeper than 10:1 (horizontal to vertical), the fills should be keyed at least 5 feet into competent native soils. Keyways should be at least 10 feet wide and a subdrain should be placed at the bottom and to the rear of each keyway. The keyway should be sloped toward the back of the key at 2 percent or steeper. A subgrade bench and subdrain should be provided for approximately every 10 to 15 feet of vertical elevation gain, and the bench should extend at least one foot into competent soils. Subdrain construction is described in **Section 4.1.8, *Subsurface Drainage***. The actual extent of the keying, benching, and subdrainage should be determined by SFB during earthwork operations. SFB should also be consulted during the development of grading plans to estimate locations of keyways and subdrains.

4.1.8 Subsurface Drainage

In order to reduce the potential for subsurface water created issues, we recommend subdrains be installed below engineered fill placed on slopes, at the toe of slopes, and where open space areas direct water toward improvements. During the earthwork operations, additional subdrains may be necessary in areas of encountered or anticipated seepage on the slopes. We recommend a subdrain be located below lined ditches or earthen swales that collect surface water from open space areas; the purpose of the subdrain is to intercept water that can flow under ditches and cause damage and distress. The actual location and extent of subdrains should be assessed by SFB during the development of the grading and improvement plans and determined in the field by SFB at the time of construction.

Where used, subdrains should consist of 4-inch diameter, rigid perforated pipe (perforations down) surrounded by free draining, uniformly graded, 1/2 to 3/4-inch crushed gravel wrapped in filter fabric such as Mirafi 140N or equivalent. The pipe should be underlain by about 1/2 to 1 inch of the gravel, and on the sides by at least 4 inches of gravel. The filter fabric should overlap approximately 12 inches or more at joints. Subdrains should be connected to a solid, rigid, collector pipe with a minimum diameter of 4 inches. Subdrain pipes can consist of rigid ABS (SDR-35) or PVC A-2000 (or equal) for fills less than 20 feet in overlying thickness, and rigid

ABS (SDR-23.5) or PVC Schedule 40 (or equal) for fill between 20 and 50 feet in overlying thickness. Collector pipes should be at least 6 inches in diameter and connected to appropriate discharge facilities such as the drainage channel in the eastern portion of the site or storm drains. Energy dissipators should be used at the outlet of each collector pipe if discharging into open space areas. Subdrain clean-outs should be provided. The clean-out locations should be based upon the reach of the rotary cleaning systems and the restrictions of pipe bends. Caltrans Class 2 permeable material may be used in lieu of gravel and filter fabric.

Where used, subdrain trenches should be at least 12 inches wide and about 4 feet deep below adjacent ground surface. If a subdrain trench extends to the ground surface and is not covered with concrete lined ditch or concrete flatwork, we recommend the subdrain trench be covered with a 12-inch thick cap consisting of native soil compacted to at least 90 percent relative compaction.

4.1.9 Utility Trench Backfill

Pipeline trenches should be backfilled with fill placed in lifts of approximately 8 inches in uncompacted thickness. Thicker lifts can be used provided the method of compaction is approved by SFB and the required minimum degree of compaction is achieved. Backfill should be placed by mechanical means only. Jetting is not permitted.

Onsite trench backfill should be compacted to at least 90 percent relative compaction. Imported sand trench backfill should be compacted to at least 95 percent relative compaction and sufficient water is added during backfilling operations to prevent the soil from "bulking" during compaction. The upper 3 feet of trench backfill in foundation, slab, and pavement areas should be entirely compacted to at least 95 percent relative compaction. To reduce piping and settlement of overlying improvements, we recommend rock bedding and rock backfill (if used) be completely surrounded by a filter fabric such as Mirafi 140N (or equivalent); alternatively, filter fabric would not be necessary if Caltrans Class 2 permeable material is used in lieu of rock bedding and rock backfill.

Sand or gravel backfilled trench laterals that extend toward driveways, exterior slabs-on-grade, or under the building foundations, and are located below irrigated landscaped areas such as lawns or planting strips, should be plugged with onsite clays, low strength concrete, or sand/cement slurry. The plug for the trench lateral should be located below the edge of pavement or slabs, and under the perimeter of the foundation. The plug should be at least 24 inches thick, extend the entire width of the trench, and extend from the bottom of the trench to the top of the sand or gravel backfill.

We recommend where utility trenches are sloped 5 percent or steeper, a low permeability plug composed of compacted clays, low strength concrete, or sand/cement slurry be installed in the trench every 50 feet on-center. The plug will reduce piping from water seepage that may cause trench surface settlement. The plug should be at least 12 inches thick, extend at least 1 foot beyond the edges and bottom of the trench, and extend to within 1 foot of the finished ground surface or to the base of the pavement section.

4.1.10 Exterior Flatwork

We recommend that exterior slabs (including roadway curb and gutter, patios, sidewalks, and driveways) be placed directly on the properly compacted fills. We do not recommend using aggregate base, gravel, or crushed rock below these improvements. If imported granular materials are placed below these elements, subsurface water can seep through the granular materials and cause the underlying soils to saturate or pipe. Prior to placing concrete, subgrade soils should be moisture conditioned to increase their moisture content to approximately 3 to 5 percent above laboratory optimum moisture (ASTM D-1557).

The more expansive clayey soils at the site could be subjected to volume changes during fluctuations in moisture content. As a result of these volume changes, some vertical movement of exterior slabs should be anticipated. This movement could result in damage to the exterior slabs and might require periodic maintenance or replacement. Adequate clearance should be provided between the exterior slabs and building elements that overhang these slabs, such as window sills or doors that open outward.

We recommend reinforcing exterior slabs with steel bars in lieu of wire mesh. To reduce potential crack formation, the installation of #4 bars spaced at approximately 18 inches on center in both directions should be installed. Score joints and expansion joints should be used to control cracking and allow for expansion and contraction of the concrete slabs. We recommend appropriate flexible, relatively impermeable fillers be used at all cold/expansion joints. The installation of dowels at all expansion and cold joints will reduce differential slab movements; the dowels should be at least 30 inches long and should be spaced at a maximum lateral spacing of 18 inches. Although exterior slabs that are adequately reinforced will still crack, trip hazards requiring replacement of the slabs will be reduced if the slabs are properly reinforced.

4.1.11 Construction during Wet Weather Conditions

If construction proceeds during or shortly after wet weather conditions, the moisture content of the onsite soils could be significantly above optimum. Consequently, subgrade preparation, placement and/or reworking of onsite soil or fills as structural fill might not be possible. Alternative wet weather construction recommendations can be provided by our representative in the field at the time of construction, if appropriate. All the drainage measures recommended in this report should be implemented and maintained during and after construction, especially during wet weather conditions.

4.1.12 Surface Drainage, Irrigation, and Landscaping

Ponding of surface water must not be allowed on pavements, adjacent to foundations, at the top or bottom of slopes, and at the top or adjacent to retaining walls. Ponding of water should also not be allowed on the ground surface adjacent to or near exterior slabs, including driveways, walkways, and patios. Surface water should not be allowed to flow over the top of slopes, down slope faces, or over retaining walls.

We recommend positive surface gradients of at least 2 percent be provided adjacent to foundations to direct surface water away from the foundations and toward suitable discharge facilities. Roof downspouts and landscaping drainage inlets should be connected to solid pipes that discharge the collected water into appropriate water collection facilities. We recommend the surface drainage be designed in accordance with the latest edition of the California Building Code.

In order to reduce differential foundation movements, landscaping (where used) should be placed uniformly adjacent to the foundation and exterior slabs. We recommend trees be no closer to the structure or exterior slabs than half the mature height of the tree; in no case should tree roots be allowed to extend near or below the foundations or exterior slabs.

Drainage inlets should be provided within enclosed planter areas and the collected water should be discharged onto pavement, into drainage swales, or into storm water collection systems. In order to reduce the potential for heaving, consideration should be given to lining planting areas and collecting the accumulated surface water in subdrain pipes that discharge to appropriate collection facilities. The drainage should be designed and constructed so that the moisture content of the soils surrounding the foundations do not become elevated and no ponding of water occurs. The inlets should be kept free of debris and be lower in elevation than the adjacent ground surface.

We recommend regular maintenance of the drainage systems be performed, including maintenance prior to rainstorms. The inspection should include checking drainage patterns to make sure they are performing properly, making sure drainage systems and inlets are functional and not clogged, and checking that erosion control measures are adequate for anticipated storm events. Immediate repairs should be performed if any of these measures appears to be inadequate.

Irrigation should be performed in a uniform, systematic manner as equally as possible on all sides of the foundations and exterior slabs to maintain moist soil conditions. Over-watering must be avoided. To reduce moisture changes in the natural soils and fills in landscaped areas, we recommend that drought resistant plants and low flow watering systems be used. All irrigation systems should be regularly inspected for leakage.

4.1.13 Storm Water Runoff Structures

To satisfy local and state permit requirements, most new development projects must control pollutant sources and reduce, detain, retain, and/or treat specified amounts of storm water runoff. The intent of these types of improvements is to conserve and incorporate on-site natural features, together with constructed hydrologic controls, to more closely mimic pre-development hydrology and watershed processes.

We recommend storm water collection improvements that are designed to detain, retain, and/or treat water such as bio-swales, porous pavement structures, and water detention basins, be lined with a relatively impermeable membrane in order to reduce water seepage and the potential for damage and distress to other infrastructure improvements (such as pavements, foundations, and walkways) which can occur as a result of volumetric soil/fill changes (heaving and shrinking of the surrounding soil/fill). We recommend a relatively impermeable membrane such as STEGO Wrap 15-mil or equivalent be installed below and along the sides of these facilities that direct the collected water into subdrain pipes. The membrane should be lapped and sealed in accordance with the manufacture's specifications, including taping joints where pipes penetrate the membrane. A subdrain pipe should be used at the base of the infiltration materials to collect accumulated water and transmit the water to an appropriate facility or discharge location. If these storm water collections structures will be installed in open spaces significantly away from improvements, we recommend SFB be consulted on the option of eliminating the membrane from the base of the storm water collection structures.

Soil filter materials within basins and swales will consolidate over time causing long-term ground surface settlement. Additional filling within the basins and swales over time will be needed to maintain design surface elevations. The soil filter materials, infiltration testing and procedures, and associated compaction requirements should be specified by the Civil Engineer and shown in detail on the grading and improvement plans.

Sidewalls of earthen swales and basins steeper than 3:1 (horizontal to vertical) will experience downward and lateral movements that can cause significant ground surface movements, including movement of adjacent improvements such as foundations, utilities, pavements, driveways, walkways, and curbs and gutters. The magnitude and rate of movement depends upon the swale and basin backfill material type and compaction. To reduce the potential for damaging movements, we recommend 3:1 sidewall slopes be used for earthen swales and basins, sidewalks be setback at least 3 feet from the top of the slope, creep sensitive improvements (such as roadway curbs) be setback at least 5 feet from the top of the slopes, or the slopes/sidewalls be appropriately restrained using an engineered retaining system, such as deepened curbs and foundations that are designed to resist lateral earth pressures and act as a retaining wall.

SFB should be consulted regarding the use, locations, and design of storm water detention and filtration facilities. We also recommend SFB observe and document the installation of liners, subdrain pipes, and soil filter materials during construction for conformance to the recommendations in this report and the development's plans and specifications.

4.1.14 Future Maintenance

In order to reduce water related issues, we recommend regular maintenance of the site and each lot be performed, including maintenance prior to rainstorms. Maintenance should include the re-compaction of loosened soils, collapsing and infilling holes with compacted soils or low strength sand/cement grout, removal and control of digging animals, modifying storm water drainage patterns to allow for sheet flow into drainage inlets or ditches rather than concentrated flow or ponding, removal of debris within drainage ditches and inlets, and immediately repairing any erosion or soil flow. The inspection should include checking drainage patterns, making sure drainage systems are functional and not clogged, and erosion control measures are adequate for anticipated storm events. Immediate repair should be performed if any of these measures appear to be inadequate. Temporary and permanent erosion and sediment control measures should be installed over any exposed soils immediately after repairs are made.

Differential movement of exterior slabs can occur over time as a result of numerous factors. We recommend homeowners, the HOA, and development owners perform inspections and maintenance of slabs, including infilling significant cracks, providing fillers at slab offsets, and replacing slabs if severely damaged.

4.1.15 Additional Recommendations

We recommend that drainage, irrigation, landscaping, and maintenance recommendations provided in this report be forwarded to your designers and contractors, and we recommend they be included in disclosure statements given to homeowners, development owners, and their maintenance associations.

4.2 Foundation Support

4.2.1 Post-Tensioned Slabs

The proposed residential buildings can be supported on a post-tensioned slab foundation that is designed for the expansion potential of onsite soils. The slab foundation should bear entirely on properly prepared, compacted structural fill. Prior to the concrete pour, we recommend the moisture content of the pad subgrade materials be approximately 3 to 5 percent above laboratory optimum moisture. If the building pads are left exposed for an extended period of time prior to constructing foundations, we recommend SFB be contacted for recommendations to re-condition pads in order provide adequate building support.

The post-tensioned slab thickness should be determined by the Structural Engineer; however, we recommend the post-tensioned slabs be at least 10 inches thick. An allowable bearing pressure of 1,500 pounds per square foot can be used for localized point and line loads. Deflection of the slab foundations should not exceed the values recommended in the most recent PTI Manual. Lateral loads, such as derived from earthquakes and wind, can be resisted by friction between the post-tensioned slab foundation bottom and the supporting subgrade. A friction coefficient of 0.25 is considered applicable.

At least 10 feet of cover should be provided between the outer face of slabs and un-retained slope faces, as measured laterally between slope faces and the slabs. Where less than 10 feet of cover exists, deepening of the edge of slabs may be necessary in order to achieve 10 feet of cover for buildings located near tops of slopes. Where slabs are located adjacent to utility trenches, the slab bearing surface should bear below an imaginary 1 horizontal to 1 vertical plane extending upward from the bottom edge of the adjacent utility trench. Alternatively, the slab reinforcing could be increased to span the area defined above assuming no soil support is provided.

A vapor retarder must be placed between subgrade soils and the bottom of the slabs-on-grade. We recommend the vapor retarder consist of a single layer of Stego Wrap Vapor Barrier 15 mil Class A or equivalent provided the equivalent satisfies the following criteria: a permeance as tested before and after mandatory conditioning of less than 0.01 Perms and strength of Class A as determined by ASTM E 1745 (latest edition), and a thickness of at least 15 mils. Installation of the vapor retarder should conform to the latest edition of ASTM E 1643 (latest edition) and the manufacturers requirements, including all joints should be lapped at least 6 inches and sealed with Stego Tape or equal in accordance with the manufacturer's specifications. Protrusions where pipes or conduit penetrate the membranes should be sealed with either one or a combination of Stego Tape, Stego Mastic, Stego Pipe Boots, or a product of equal quality as determined by the manufacturer's instructions and ASTM E 1643. Care must be taken to protect the membrane from tears and punctures during construction. We do not recommend placing sand or gravel over the membrane.

Concrete slabs retain moisture and often take many months to dry; construction water added during the concrete pour further increases the curing time. If the slabs are not allowed to completely cure prior to constructing the super-structure, the concrete slabs will expel water vapor and the vapor will be trapped under impermeable flooring. The concrete mix design for the slabs should have a maximum water/cement ratio of 0.45; the actual water/cement ratio may need to be reduced if the concentration of soluble sulfates or chlorides in the supporting subgrade is detrimental to the concrete. The results of sulfate and chloride testing of four onsite soil samples are included under separate cover. We recommend you consult with your concrete slab designers and concrete contractors regarding methods to reduce the potential for differential concrete curing.

An experienced Structural Engineer should design the post-tensioned slabs to resist the differential soil movement. The preliminary soil design parameters presented below were generated using the procedures presented in the Post-Tensioning Institute (PTI) design manual and PTI published specifications, and the PTI preferred computer program VOLFLO was employed to simulate the wetting and drying scenarios of the soils beneath the post-tensioned slabs.

The values provided below are based upon the post-tensioned slab foundations being entirely surrounded by uniform, properly drained, moderately irrigated landscaping; if differing conditions exist that will cause differential soil moisture adjacent or below the slabs, or if portions of the foundations will be located adjacent to relatively dry or wet soils, then we should be consulted and modifications to the values below would need to be modified in writing. Please refer to **Section 4.1.12, *Surface Drainage, Irrigation, and Landscaping***, for additional recommendations. We recommend that slab-subgrade friction values provided in the most recent PTI Manual be used in order to determine the friction that might be expected to exist during tendon stressing.

SWELLING MODE

	Center Lift	Edge Lift
Edge Moisture Variation Distance (e_m)	9.0 feet	5.0 feet
Differential Soil Movement (y_m)	1.0 inch	1.3 inch

We recommend SFB review the foundation drawings and specifications prior to submittal to verify that the recommendations provided in this report have been used and properly interpreted in the design of the slabs.

4.2.2 Retaining Walls

If segmental block walls with geogrid will be used at the site, SFB should be contacted to provide block wall and geogrid designs and specifications.

Where walls retain soil, they must be designed to resist both lateral earth pressures and any additional lateral loads caused by surcharging such as building and roadway loads. Where walls are used to retain soil, we recommend unrestrained walls (walls free to deflect and disconnected from other structures) be designed to resist an equivalent fluid pressure of 50 pounds per cubic foot. This assumes a level backfill. Restrained walls (walls restrained from deflection) should be designed to resist an equivalent fluid pressure of 50 pounds per cubic foot plus a uniform pressure of 10H pounds per square foot, where H is the height of the wall in feet. Walls with inclined backfill should be designed for an additional equivalent fluid pressure of 1 pound per cubic foot for every 1 degrees of slope inclination. Walls subjected to surcharge loads should be designed for an additional uniform lateral pressure equal to one-third and one-half the anticipated surcharge load for unrestrained and restrained walls, respectively. These lateral pressures depend upon the moisture content of the retained soils to be constant over time; if the moisture content of the retained soils will fluctuate or increase compared to the moisture content at time of construction, then SFB should be consulted and provide written modifications to this design criteria.

For retaining walls that need to resist earthquake induced lateral loads from nearby foundations, walls that are to be designed to resist earthquake loads, and any retaining walls that are higher than 6 feet (as required by the 2019 CBC), we recommend the walls also be designed to resist a triangular pressure distribution equal to an equivalent fluid pressure of 47 pounds per cubic foot based on the ground acceleration from a design basis earthquake. This seismic induced earth pressure is in addition to the pressures noted above. Due to the transient nature of the seismic loading, a factor of safety of at least 1.1 can be used in the design of the walls when they resist seismic lateral loads. Some movement of the walls may occur during moderate to strong earthquake shaking and may result in distress as is typical for all structures subjected to earthquake shaking.

The recommended lateral pressures assume walls are fully-back drained to prevent the build-up of hydrostatic pressures. This can be accomplished by using ½ to ¾ inch crushed, uniformly graded gravel entirely wrapped in filter fabric such as Mirafi 140N or equal (an overlap of at least 12 inches should be provided at all fabric joints). The gravel and fabric should be at least 8 inches wide and extend from the base of the wall to within 12 inches of the finished grade at the top (Caltrans Class 2 permeable material (Section 68) may be used in lieu of gravel and filter fabric). A 4-inch diameter, perforated pipe should be installed at the base and centered within the gravel. The perforated pipe should be connected to a solid collector pipe that transmits the water directly to a storm drain, drainage inlet, or onto pavement. If weep holes are used in the wall, the perforated pipe within the gravel is not necessary provided the weep holes are kept free of animals and debris, are located no higher than approximately 6 inches from the lowest adjacent grade, and are able to function properly. As an alternative to using gravel, drainage panels (such as AWD SITEDRAIN Sheet 94 for walls or equal) may be used behind the walls in conjunction with perforated pipe (connected to solid collector pipe), weep holes, or strip drains (such as SITEDRAIN Strip 6000 or equal). If used, the drainage panels can be spaced on-center at approximately 2 times the panel width.

If heavy compaction equipment is used behind the walls, the walls should be appropriately designed to withstand loads exerted by the heavy equipment and/or temporarily braced. Fill placed behind walls should conform to the recommendations provided in **Section 4.1.5, *Fill Material***, and **Section 4.1.6, *Compaction***.

Retaining walls can be supported on drilled, cast-in-place, straight shaft friction piers that develop their load carrying capacity in the materials underlying the site. The piers should have a minimum diameter of 12 inches and a center-to-center spacing of at least three times the shaft diameter. We recommend that piers be at least 6 feet long. The pier reinforcing should be based on structural requirements but in no case should less than two #4 bars for the entire length of the pier be used.

The actual design depth of the piers should be determined using an allowable skin friction of 500 pounds per square foot (psf) for dead plus live loads, with a one-third increase for all loads including wind or seismic. Seventy percent of the skin friction value can be used to resist uplift. Lateral load resistance can be developed in passive resistance for pier foundations. A passive resistance equal to an equivalent fluid weighing 350 pounds per cubic foot acting against twice the projected diameter of pier shafts can be used. The upper two feet of pier embedment should be neglected in the vertical and passive resistance design as measured from finished grade. The portion of the pier shaft located within 10 feet (as measured laterally) of the nearest slope face should also be ignored in the design.

We recommend the pier foundations be located outside of (or beyond) a 1:1 (horizontal to vertical) plane projected upward from the base of any wall or utility trench, or the portion of a pier located within this zone should be ignored in the design of the pier.

The bottoms of the pier excavations should be relatively dry and free of all loose cuttings or slough prior to placing reinforcing steel and concrete. Any accumulated water in pier excavations should be removed prior to placing concrete. We recommend that the excavation of all piers be performed under the direct observation of SFB to confirm that the pier foundations are founded in suitable materials and constructed in accordance with the recommendations presented herein. Preliminarily, we recommend concrete pours of pier excavations be performed within 24 hours of excavation and prior to any rainstorms. Where caving or high groundwater conditions exist, additional measures such as using casing, tremie methods, and pouring concrete immediately after excavating may be necessary. SFB should be consulted on the need for additional measures for pier construction as needed during construction.

Footing foundations can be used as an alternative to using piers to support the retaining walls. If footing foundations will be used, SFB should be consulted to provide footing foundation design and construction criteria.

4.2.3 Seismic Design Criteria

The following parameters were calculated using the U.S. Seismic Design Map program,[15] and are based on the site being located at approximate latitude 36.823°N and longitude 122.357°W. For

[15]SEAONC/OSHPD, https://seismicmaps.org/, accessed 04/23/2020.

seismic design using the 2019 California Building Code (CBC), we recommend the following seismic design parameters be used. These values are based on applying the ASCE 7-16 model, assuming the residential structures are categorized as Risk Category II, and assuming that *Exception Number (2) of ASCE 7-16 Section 11.4.8 – Site Specific Ground Procedure* applies. We should be contacted if any of these assumptions are incorrect or a site-specific ground motion hazard analysis is required.

SEISMIC PARAMETER	DESIGN VALUE
Site Class	D
S_S	2.119
S_1	0.787
S_{MS}	2.119
S_{M1}	Null (See Section 11.4.8 of ASCE 7-16)
S_{DS}	1.413
S_{D1}	Null (See Section 11.4.8 of ASCE 7-16)
SDC	Null (See Section 11.4.8 of ASCE 7-16)
F_a	1.0
F_v	Null (See Section 11.4.8 of ASCE 7-16)
PGA_M	0.972

4.3 Pavements

4.3.1 Asphalt Concrete

Based on the results of laboratory testing of onsite materials, we recommend that an R-value of 5 be used in preliminary asphalt concrete pavement design. We recommend additional R-value tests be performed once the pavement subgrade is established to confirm the R-value used in the design. Pavement subgrade completely composed of sandy and gravelly fills will result in higher R-values and thinner pavement sections.

We developed the following alternative preliminary pavement sections using Topic 608 of the State of California Department of Transportation Highway Design Manual, the recommended R-value, and typical traffic indices for residential developments. The project's Civil Engineer or appropriate public agency should determine actual traffic indices. The pavement thicknesses shown below are SFB's recommended minimum values; governing agencies may require pavement thicknesses greater than those shown.

PRELIMINARY PAVEMENT DESIGN ALTERNATIVES SUBGRADE R-VALUE = 5			
Location	Pavement Components		Total Thickness (inches)
	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	
T.I. = 4.5 (auto & light truck parking)	3.0	9.0	12.0
T.I. = 5.0 (access ways/courts)	3.0	11.0	14.0

If the pavements are planned to be placed prior to or during construction, the traffic indices and pavement sections may not be adequate for support of what is typically more frequent and heavier construction traffic. If the pavement sections will be used for construction access by heavy trucks or construction equipment (especially fork lifts with support footings), SFB should be consulted to provide recommendations for alternative pavement sections capable of supporting the heavier use and heavier loads. If requested, SFB can provide recommendations for a phased placement of the asphalt concrete to reduce the potential for mechanical scars caused by construction traffic in the finished grade. Preliminary pavement sections should be revised, if necessary, when actual traffic indices are known and pavement subgrade elevations are determined.

Pavement baserock and asphalt concrete should be compacted to at least 95 percent relative compaction. The asphalt concrete compacted unit weight should be determined using Caltrans Test Method 308-A or ASTM Test Method D1188. Asphalt concrete should also satisfy the S-value requirements by Caltrans.

We recommend regular maintenance of the asphalt concrete be performed at approximately five-year intervals. Maintenance may include sand slurry sealing, crack filling, and chip seals as necessary. If regular maintenance is not performed, the asphalt concrete layer could experience premature degradation requiring more extensive repairs

5.0 CONDITIONS AND LIMITATIONS

SFB is not responsible for the validity or accuracy of information, analyses, test results, or designs provided to SFB by others or prepared by others. The analysis, designs, opinions, and recommendations submitted in this report are based in part upon the data obtained from our field work and upon information provided by others. Site exploration and testing characterizes subsurface conditions only at the locations where the explorations or tests are performed; actual subsurface conditions between explorations or tests may be different than those described in this report. Variations of subsurface conditions from those analyzed or characterized in this report are not uncommon and may become evident during construction. In addition, changes in the condition of the site can occur over time as a result of either natural processes (such as earthquakes, flooding, or changes in ground water levels) or human activity (such as construction adjacent to the site, dumping of fill, or excavating). If changes to the site's surface or subsurface conditions occur since the performance of the field work described in this report, or if differing subsurface conditions are encountered, we should be contacted immediately to evaluate the differing conditions to assess if the opinions, conclusions, and recommendations provided in this report are still applicable or should be amended.

We recommend SFB be retained to provide geotechnical services during design, reviews, earthwork operations, paving operations, and foundation installation to confirm and observe compliance with the design concepts, specifications and recommendations presented in this report. Our presence will also allow us to modify design if unanticipated subsurface conditions are encountered or if changes to the scope of the project, as defined in this report, are made.

This report is a design document that has been prepared in accordance with generally accepted geological and geotechnical engineering practices for the exclusive use of William Lee and his consultants for specific application to the proposed new residential development to be located at 291 Old Ranch Road in Hollister, California, and is intended to represent our design recommendations to William Lee for specific application to the residential development project. The conclusions and recommendations contained in this report are solely professional opinions. It is the responsibility of William Lee to transmit the information and recommendations of this report to those designing and constructing the project. We will not be responsible for the misinterpretation of the information provided in this report. We recommend SFB be retained to review geological and geotechnical aspects of the construction calculations, specifications, and plans; we should also be retained to participate in pre-bid and pre-construction conferences to clarify the opinions, conclusions, and recommendations contained in this report.

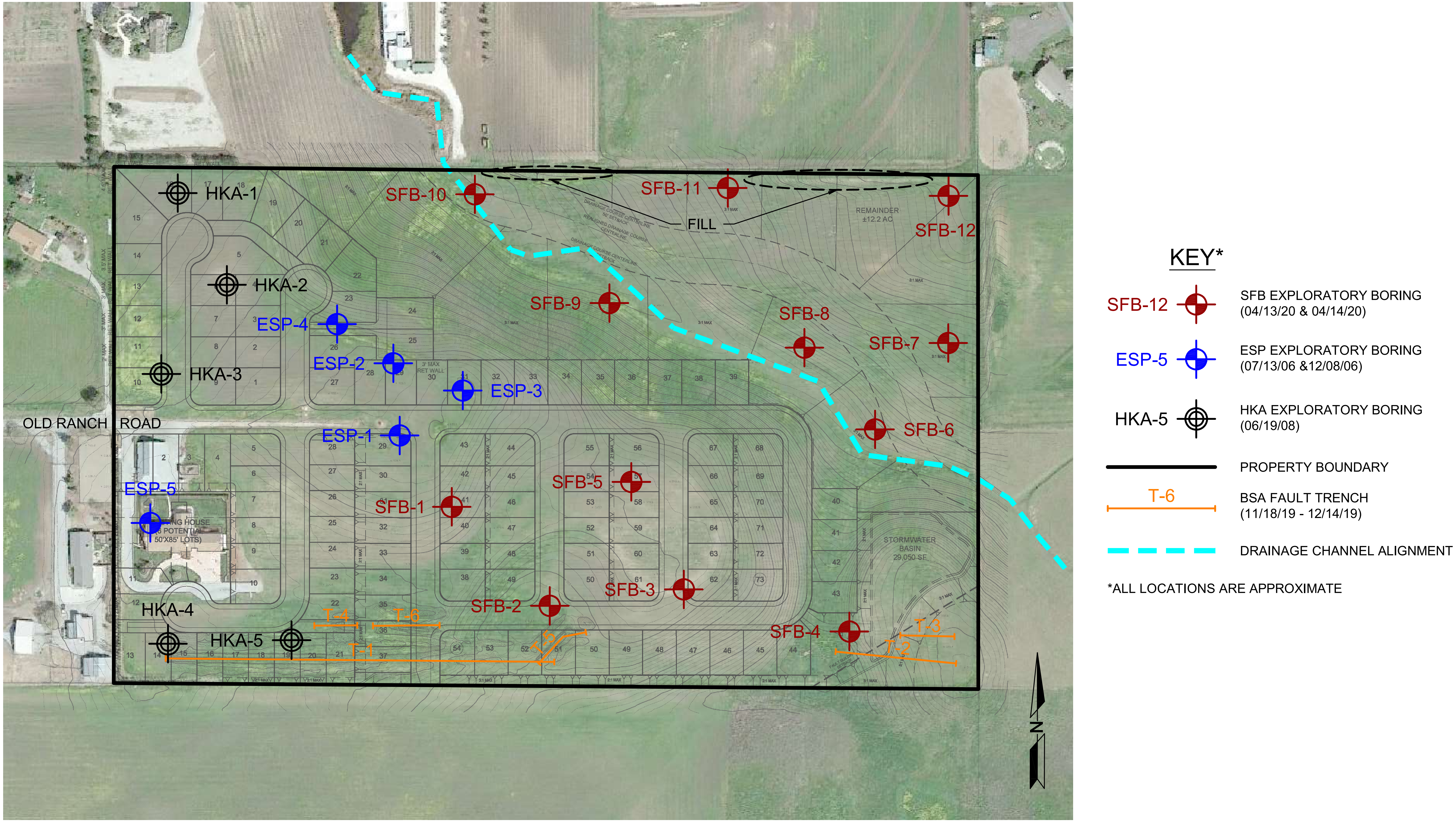
It should be understood that advancements in the practice of geotechnical engineering and engineering geology, or discovery of differing surface or subsurface conditions, may affect the validity of this report and are not uncommon. SFB strives to perform its services in a proper and professional manner with reasonable care and competence but we are not infallible. Geological engineering and geotechnical engineering are disciplines that are far less exact than other engineering disciplines; therefore, we should be consulted if it is not completely understood what the limitations to using this report are.

In the event that there are any changes in the nature, design or location of the project, as described in this report, or if any future additions are planned, the conclusions and recommendations contained in this report shall not be considered valid unless we are contacted in writing, the project changes are reviewed by us, and the conclusions and recommendations presented in this report are modified or verified in writing. The opinions, conclusions, and recommendations contained in this report are based upon the description of the project as presented in the introduction section of this report.

This report does not necessarily represent all of the information that has been communicated by us to William Lee and his consultants during the course of this engagement and our rendering of professional services to William Lee. Reliance on this report by parties other than those described above must be at their own risk unless we are first consulted as to the parties' intended use of this report and only after we obtain the written consent of William Lee to divulge information that may have been communicated to William Lee. We cannot accept consequences for use of segregated portions of this report.

Please refer to Appendix D for additional guidelines regarding use of this report.

FIGURES



BASE: Yield Study D Site Plan prepared by Ruggeri-Jensen-Azar and dated 03/23/20 on a Google Earth image dated 03/28/18.

APPROXIMATE SCALE: 1" = 180' (0, 180', 360')	DATE: April 2020; PROJECT NO.: 819-1	Stevens Ferrone & Bailey Engineering Company, Inc; 1600 Willow Pass Court, Concord, CA 94520, Tel 925.688.1001, Fax 925.688.1005, www.SFandB.com	SITE PLAN: LEE PROPERTY DEVELOPMENT, Hollister, California	FIGURE 1

APPENDIX A

Field Investigation

APPENDIX A
Field Investigation

Our field investigation for the proposed new residential development to be located at 291 Old Ranch Road in Hollister, California, consisted of surface reconnaissance and a subsurface exploration program. Reconnaissance of the site and surrounding area was performed on June 14, 2018 and April 6, 2020. Subsurface exploration was performed using a truck-mounted drill rig equipped with 4-inch diameter, continuous flight, solid stem augers. Twelve exploratory borings were drilled on April 13 and 14, 2020. Our representative continuously logged the soils encountered in the borings in the field. The soils are described in general accordance with the Unified Soil Classification System (ASTM D2487). The logs of the borings, as well as, a key for the classification of the soil (Figure A-1) are included as part of this appendix.

Representative samples were obtained from our exploratory borings at selected depths appropriate to the investigation. Relatively undisturbed samples were obtained using a 3-inch O.D. split barrel sampler with liners, and disturbed samples were obtained using a 2-inch O.D. split spoon sampler. All samples were transmitted to our offices for evaluation and appropriate testing. Both sampler types are indicated in the "Sampler" column of the boring logs as designated in Figure A-1.

Resistance blow counts were obtained in our borings with the samplers by dropping a 140-pound safety hammer through a 30-inch free fall. The sampler was driven 18 inches and the number of blows were recorded for each 6 inches of penetration. The blows per foot recorded on the boring logs represent the accumulated number of converted blows that were required to drive the last 12 inches, or the number of inches indicated where hard resistance was encountered. The blow counts recorded on the boring logs have been converted to equivalent SPT field blow-counts, but have not been corrected for overburden, silt content, or other factors.

The attached boring logs and related information show our interpretation of the subsurface conditions at the dates and locations indicated, and it is not warranted that they are representative of subsurface conditions at other locations and times.

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description	Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel Gravelly Soils		GW	Well-graded gravels or gravel sand mixtures, little or no fines	Soils	Silts And Clays LL < 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			GM	Silty gravels, gravel-sand-silt mixtures				OL	Organic silts and organic silt-clays of low plasticity
			GC	Clayey gravels, gravel-sand-clay mixtures		Silts And Clays LL > 50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
	Sand And Sandy Soils		SW	Well-graded sands or gravelly sands, little or no fines				CH	Inorganic clays of high plasticity, fat clays
			SP	Poorly-graded sands or gravelly sands, little or no fines				OH	Organic clays of medium to high plasticity
			SM	Silty sands, sand-silt mixtures					
			SC	Clayey sands, and-clay mixtures	Highly Organic Soils			PT	Peat and other highly organic soils

GRAIN SIZES

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

200 40 10 4 3/4" 3" 12"

Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot*
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

CONSISTENCY

Silts and Clays	Blows/Foot*	Strength (tsf)**
Very Soft	0 - 2	0 - 1/4
Soft	2 - 4	1/4 - 1/2
Firm	4 - 8	1/2 - 1
Stiff	8 - 16	1 - 2
Very Stiff	16 - 32	2 - 4
Hard	Over 32	Over 4

*Number of Blows for a 140-pound hammer falling 30 inches, driving a 2-inch O.D. (1-3/8" I.D.) split spoon sampler.
**Unconfined compressive strength.

SYMBOLS & NOTES

Standard Penetration sampler (2" OD Split Barrel)

Modified California sampler (3" OD Split Barrel)

California Sampler (2.5" OD Split Barrel)

Shelby Tube

Pitcher Barrel

HQ Core

Ground Water level initially encountered

Ground Water level at end of drilling

PI = Plasticity Index
LL = Liquid Limit
R = R-Value

Increasing Visual Moisture Content

Saturated
Wet
Moist
Damp
Dry

Constituent Percentage

trace	<5%
some	5-15%
with	16-30%
-y	31-49%

Stevens, Ferrone & Bailey Engineering Company, Inc.
1600 Willow Pass Court
Concord, CA 94520
Tel: (925) 688-1001

KEY TO EXPLORATORY BORING LOGS

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	FIGURE NO.
819-1	April 2020	A-1

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 529 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND CLASSIFICATION										
DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
FILL: CLAY (CL), dark brown, silty, with sand(fine- to coarse-grained), trace gravel(fine, subrounded to subangular), tilled, dry to damp.	soft very stiff		0			24	11			At 2': Liquid Limit = 40% Plasticity Index = 27 Percent Passing #200 Sieve = 59%
SAND (SC), mottled brown, fine- to coarse-grained, with clay, some silt, dry. Some gravel(fine, subrounded to subangular). Some gravel(fine to coarse, rounded to subrounded).	dense medium dense		5 10	525 520		40 33	9			
SAND (SM), light brown, fine-grained, silty, trace clay, dry.	medium dense dense		15	515		24				
SAND (SP), mottled brown, fine- to coarse-grained, some gravel(fine, subangular to subrounded), dry.	dense					45				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.			20	510 505						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-1**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 513 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
FILL: CLAY (CL), dark brown, silty, some sand(fine- to coarse-grained), trace gravel(fine, subangular), tilled, dry to damp.	soft		0							
	very stiff					25	12	108	13.0	
CLAY (CL), brown, silty, some sand(fine- to coarse-grained), dry to damp.	hard									
	very stiff			510		30				
Some sand(fine- to medium-grained).			5			22				
SAND (SC), brown, fine- to coarse-grained, gravelly(fine to coarse, rounded to subrounded), with clay, some silt, dry.	medium dense			505						
	dense		10			32				
SAND (SP), mottled gray-brown, fine- to coarse-grained, with gravel(fine to coarse, angular to subrounded), trace silt, dry.	dense			500						
			15			36				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.				495						
			20							
				490						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-2**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 519 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
FILL: CLAY (CL), brown, silty, some sand(fine- to coarse-grained), some gravel(fine, subrounded to subangular), tilled, dry to damp.	firm		0							
CLAY (CH), grayish olive-brown, silty, some sand(fine-grained), with chert, dry.	hard					33	18	95	5.9	
Change color to mottled light olive-brown.						42				
				515						
			5			33				
				510						
SAND (SM), mottled gray-brown, fine-grained, silty, some clay, dry.	dense		10			33				
Bottom of Boring = 11.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.										
				505						
			15							
				500						
			20							
				495						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-3**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 495 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
SAND (SC), mottled brown, fine- to coarse-grained, with gravel(fine, subrounded to subangular), with clay, some silt, damp.	loose / medium dense		0	495		12	6			
SAND (SP), mottled brown, fine- to coarse-grained, trace silt, with rock fragments, dry. Some gravel(fine, subrounded to subangular).	medium dense					22				
			5	490		24				
With gravel(fine to coarse, rounded to subrounded).			10	485		27				
Gravelly(fine to coarse, rounded to subrounded).										
Bottom of Boring = 15 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.			15	480						
			20	475						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	April 2020	SFB-4

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 519.5 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/14/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
FILL: CLAY (CL), dark brown, silty, some sand(fine- to coarse-grained), trace gravel(fine, subrounded to subangular), tilled, dry to damp.	soft stiff		0							
CLAY (CH), mottled grayish olive-brown, silty, some sand(fine- to medium-grained), with chert, dry.	very stiff					32	22	92	3.5	At 2': Liquid Limit = 70% Plasticity Index = 49 Medium Sand = 8% Fine Sand = 4% Silt = 14% Clay = 74%
	hard					58				
			5	515		30/6"				
SAND (SM), light brown, fine-grained, with silt, trace clay, dry.	medium dense									
			10	510		27				
			15	505						
Thin lense of coarse-grained sand.	dense					40				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.										
			20	500						
				495						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-5**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 469 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), brown, silty, with sand(fine- to coarse-grained), some gravel(fine, subrounded), dry to damp.	soft		0							
	very stiff					23	12	120	6.4	
With gravel(fine, subrounded to subangular), dry.	hard					50/4"				
				465						
			5			50/6"				
CLAY (CL), light brown, silty, trace sand(fine- to medium-grained), dry.	hard									
				460						
			10			33				
Bottom of Boring = 11.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.										
				455						
			15							
				450						
			20							
				445						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-6**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 490 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled brown, silty, sandy(fine- to coarse-grained), dry.	soft		0	490						
	hard					30/6"	6	112		
	hard					50/6"				
			5	485						
SAND (SC), mottled gray-brown, fine- to coarse-grained, with gravel(fine, subangular to subrounded), with clay, some silt, dry.	very dense					50/6"				
Bottom of Boring = 6 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.										
			10	480						
			15	475						
			20	470						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-7**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 473 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/14/20

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled dark brown, silty, some sand(fine- to coarse-grained), with chert, dry.	soft		0						
	very stiff				23	13	103	4.4	
With cobbles.	hard			470	33				
			5		33				
CLAY (CL), brownish gray, silty, with chert, dry.	hard			465					
			10		39				
Change of color to mottled gray-brown, some sand(fine-grained).				460					
Sandy(fine- to coarse-grained).			15		40				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.				455					
			20						
				450					

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-8**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 466 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/14/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled gray and light brown, fine- to coarse-grained, silty, with sand(fine- to medium-grained), trace chert, dry.	soft very stiff		0	465		22	11	94	3.3	At 2': Liquid Limit = 37% Placticity Index = 23 Medium Sand = 5% Fine Sand = 21% Silt = 33% Clay = 41%
CLAY (CL), dark brown, silty, some sand(fine- to coarse-grained), trace gravel(fine, rounded), dry.	hard		5	460		33 30/6"				
SAND (SC), mottled gray and olive-brown, fine- to medium-grained, with clay, some silt, trace gravel(fine, subangular), dry.	dense		10	455		45				
CLAY (CL), mottled grayish brown, silty, some sand(fine-grained), dry.	hard		15	450		40				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.			20	445						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-9**

EXPLORATORY BORING LOG 819-1.GPJ STEVENS FERRONE BAILEY.GDT 4/24/20

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 457.5 feet	LOGGED BY RAC
DEPTH TO GROUND WATER 7 feet	BORING DIAMETER 4-inch	DATE DRILLED 04/14/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled dark and light brown, silty, with sand(fine- to coarse-grained), trace gravel(fine, subrounded to subangular), dry to damp.	soft		0							
	stiff					11	15	99	2.6	
Change color to brown.				455						
Change color to mottled gray-brown, trace sand(fine-grained), damp to moist.						16	22			
			5							
SILT (ML), mottled brownish gray, clayey, with chert, damp to moist.	stiff					15				
				450						
			10							
Change color to brown, trace sand(fine-grained), wet.	very stiff					22				
Change color to mottled brownish gray, moist.										
				445						
			15							
Damp.	hard					35				
With rock fragments.										
				440						
			20			50/6"				
Bottom of Boring = 21 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.										
				435						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-10**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 482 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/14/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled brown, silty, with sand(fine- to coarse-grained), trace gravel(fine, subangular to subrounded), with chert, dry.	soft		0							
	very stiff			480		22	12	101	3.5	
SAND (SC), grayish light brown, fine- to medium-grained, with clay, some silt, dry.	medium dense					18				
			5			30/6"	16	106	8.7	
CLAY (CL), mottled gray and dark brown, silty, some sand(fine- to coarse-grained), dry.	hard									
CLAY (CL), gray, silty, with chert, dry.	hard			475						
			10			45				
Bottom of Boring = 11.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.				470						
			15	465						
			20	460						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-11**

DRILL RIG Mobile B-24, CFA	SURFACE ELEVATION 507 feet	LOGGED BY RAC
DEPTH TO GROUND WATER Not Encountered	BORING DIAMETER 4-inch	DATE DRILLED 04/13/20

DESCRIPTION AND REMARKS	CONSIST	SOIL TYPE	DEPTH (FEET)	ELEVATION	SAMPLER	SPT N-VALUE	WATER CONTENT (%)	DRY DENSITY (PCF)	UNC. COMP. (KSF)	OTHER TESTS
CLAY (CL), mottled brown, silty, some sand(fine- to coarse-grained), some gravel(fine, subrounded to subangular), dry.	soft very stiff		0							
SAND (SC), brown, fine-grained, with clay, some silt, dry.	medium dense			505		18 22	9	102		At 2': Percent Passing #200 Sieve = 29%
SAND (SP), mottled brown, fine- to coarse-grained, trace silt, trace gravel(fine, subrounded), dry. Some gravel(fine, subrounded to subangular).	medium dense		5	500		11				
SAND (SP), brownish gray, fine- to medium-grained, trace silt, dry.	medium dense dense		10			30				
SAND (SP), brown, fine- to coarse-grained, with gravel(fine to coarse, rounded to subrounded), trace silt, dry.	dense		15	495		38				
Bottom of Boring = 16.5 feet Notes: Stratification is approximate, variations must be expected. Blowcounts converted to SPT N-values. See Report for additional details.			20	490 485						

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EXPLORATORY BORING LOG

LEE PROPERTY DEVELOPMENT
Hollister, California

PROJECT NO.	DATE	BORING NO.
819-1	**April 2020**	**SFB-12**

APPENDIX B

Laboratory Investigation

APPENDIX B

Laboratory Investigation

Our laboratory testing program for the proposed new residential development to be located at 291 Old Ranch Road in Hollister, California, was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on fifteen samples of the subsurface soils. The water contents are recorded on the boring logs at the appropriate sample depths.

Dry density determination was performed on eleven samples of the subsurface soils to evaluate their physical properties. The results of this test are shown on the boring logs at the appropriate sample depths.

Atterberg Limit determinations were performed on three near-surface soil samples to determine the range of water content over which these materials exhibit plasticity. These values were used to classify the soil in accordance with the Unified Soil Classification System and to indicate the soil's compressibility and expansion potentials. The results of these tests are presented on the boring logs at the appropriate sample depths and are also attached to this appendix.

Gradation and hydrometer tests were performed on two near-surface soil samples to assist in the classification of the soils and to determine their grain size distribution. The results of these tests are presented on the boring logs at the appropriate sample depths and are also attached to this appendix.

The percent passing the #200 sieve was performed on two samples of the subsurface soils to assist in the classification of the soil and to determine their grain size distribution. The results of this test are presented on the boring logs at the appropriate sample depths.

Unconfined compression testing was performed on nine relatively undisturbed near-surface soil samples to evaluate the undrained shear strengths of these materials. Failure was taken as the peak normal stress. The results of this test are presented on the boring logs at the appropriate sample depths and are also attached to this appendix.

Four onsite soil samples were tested for pH (ASTM D4972), chlorides (ASTM D4327), sulfates (ASTM D4327), sulfides (ASTM D4658M), resistivity at 100% saturation (ASTM G57), and Redox potential (ASTM D1498) for use in evaluating the potential for corrosion on concrete and buried metal, such as utilities and reinforcing steel. The results of these tests are included under a separate cover. We recommend these test results be forwarded to your underground contractors, pipeline designers, and foundation designers and contractors.

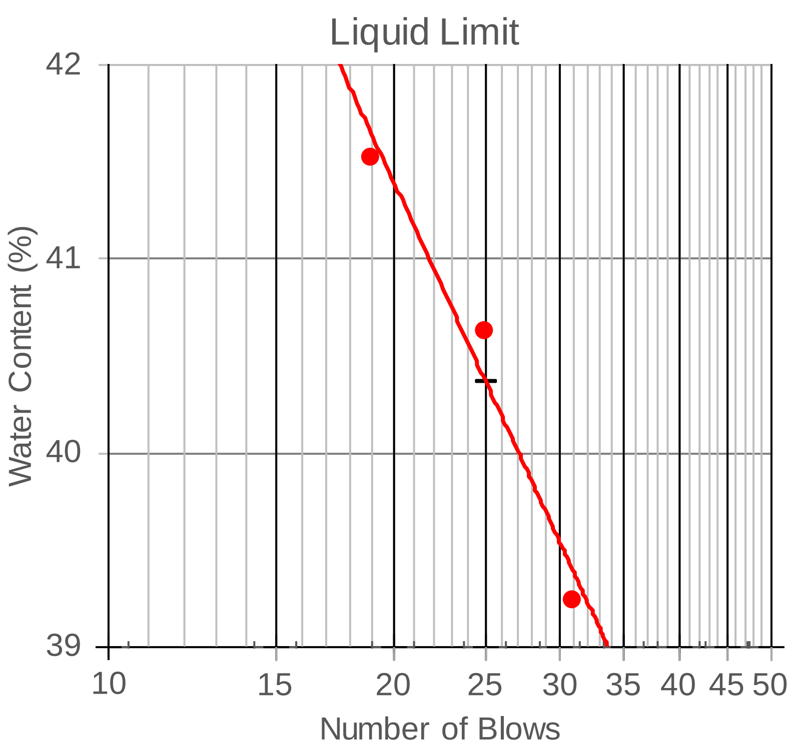
Stevens Ferrone & Bailey Engineering Company, Inc

Atterberg Limits Test – ASTM D4318

Project Number: 819-1 **Boring/Sample No:** SFB-1 **Depth:** 2

Project Name: Lee Property Development **Test Date:** 04-16-20

Description: Dark brown sandy silty CLAY (CL) **Tested By:** R

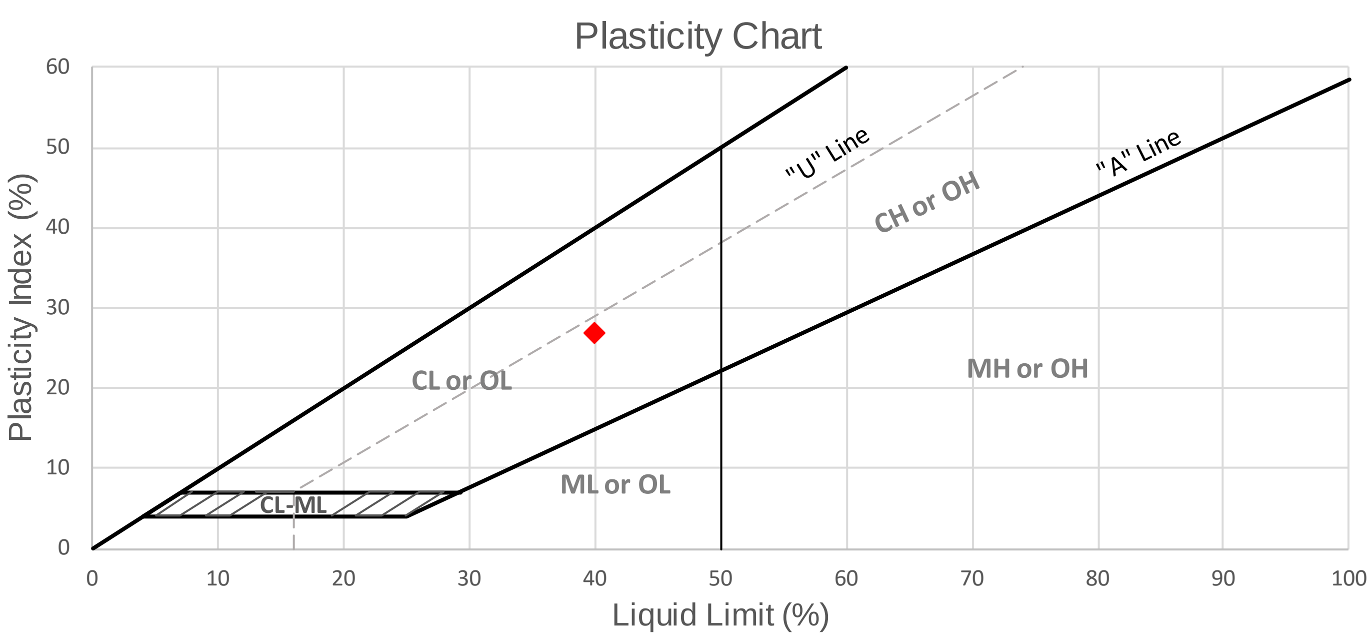


Plastic Limit Data

Trial	1	2	Ave
Water Content (%)	13.2	12.7	13.0

Data Summary

Liquid Limit	**40**
Plastic Limit	**13**
Plasticity Index	**27**
Natural Water Content	**11.1**
Liquidity Index	**-0.070**
% Passing #200 Sieve	**59.1**

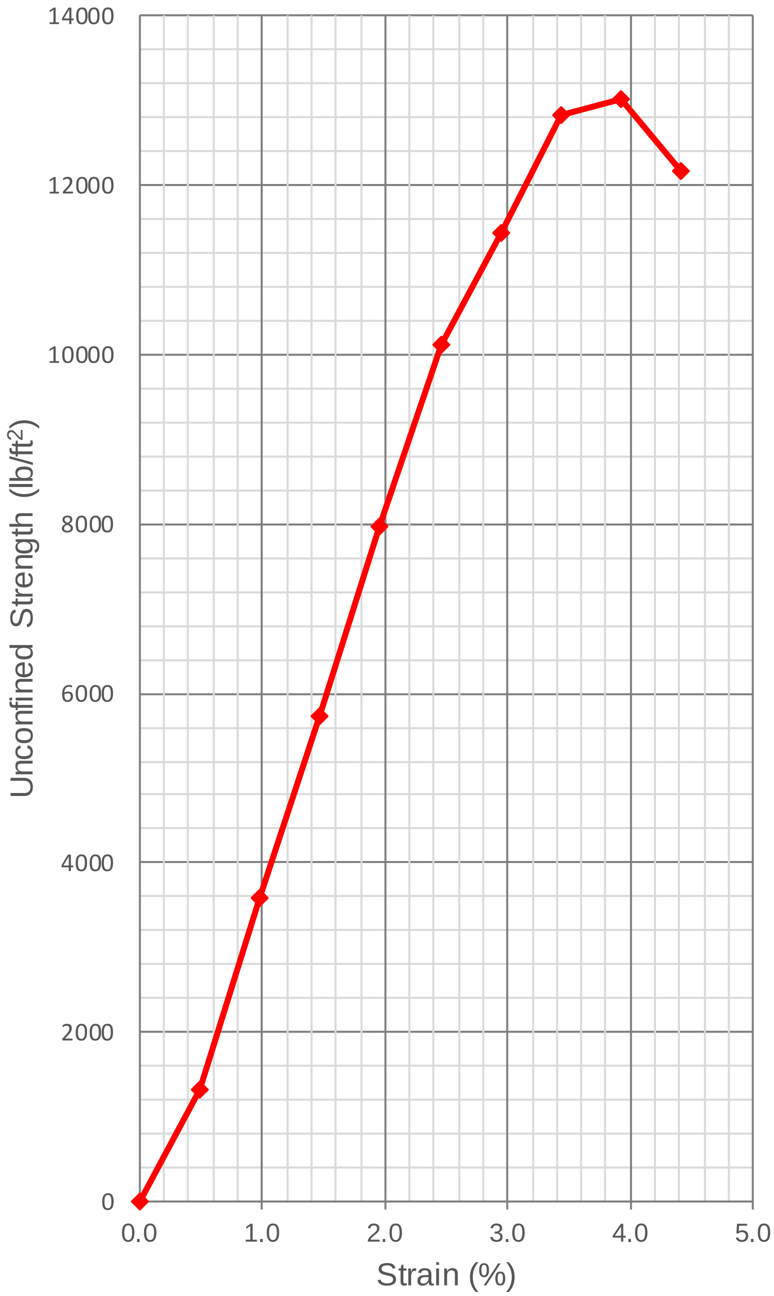


UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-2 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-15-20

Description: Dark brown silty CLAY some sand (CL) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.1 in
Volume	0.01358 ft^3
Water Content	11.9 %
Wet Density	120.5 pcf
Dry Density	107.7 pcf

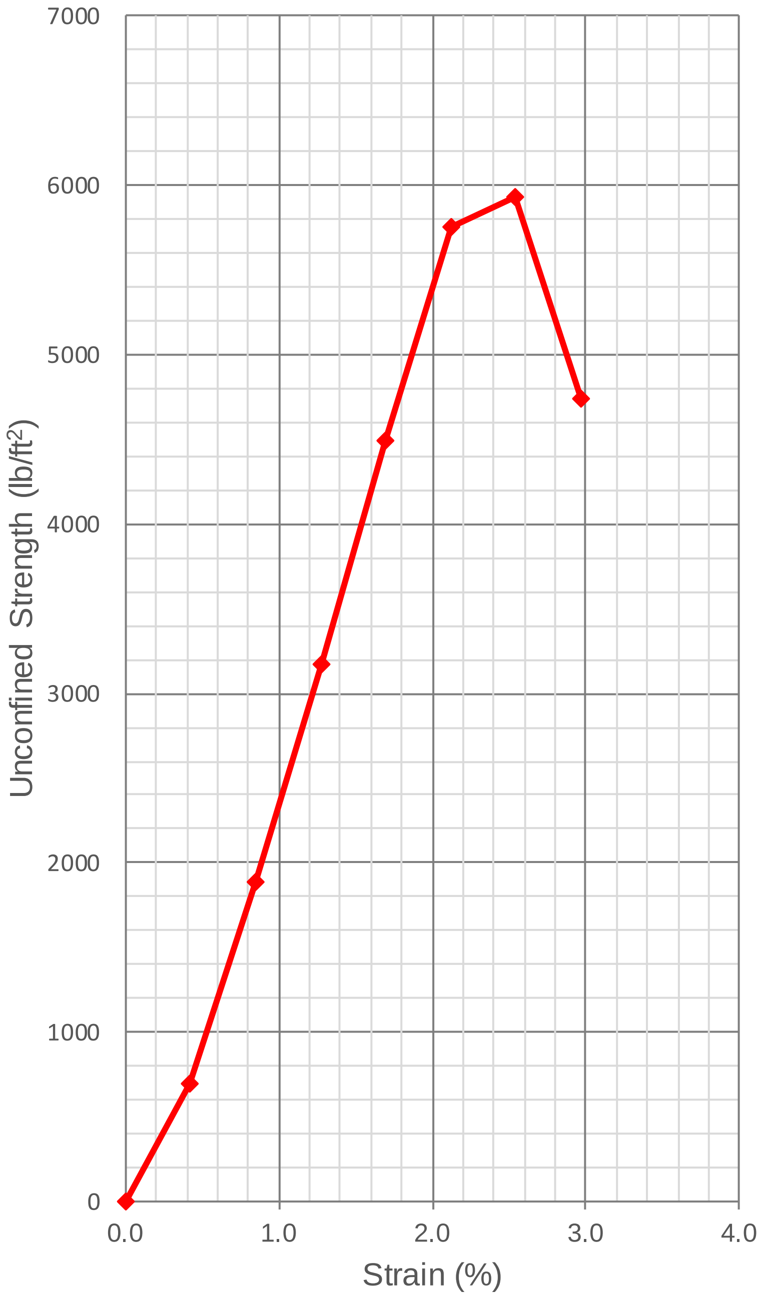
Max Unconfined Compressive Strength	
Elapsed Time	4.0 min
Vertical Dial	0.2 in
Strain	3.9 %
Area	0.03325 ft^2
Axial Load	433.0 lbs
Compressive Strength	13,023 psf

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-3 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-15-20

Description: Olive gray silty CLAY some sand (CH) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.9 in
Volume	0.01570 ft^3
Water Content	18.1 %
Wet Density	112.3 pcf
Dry Density	95.0 pcf

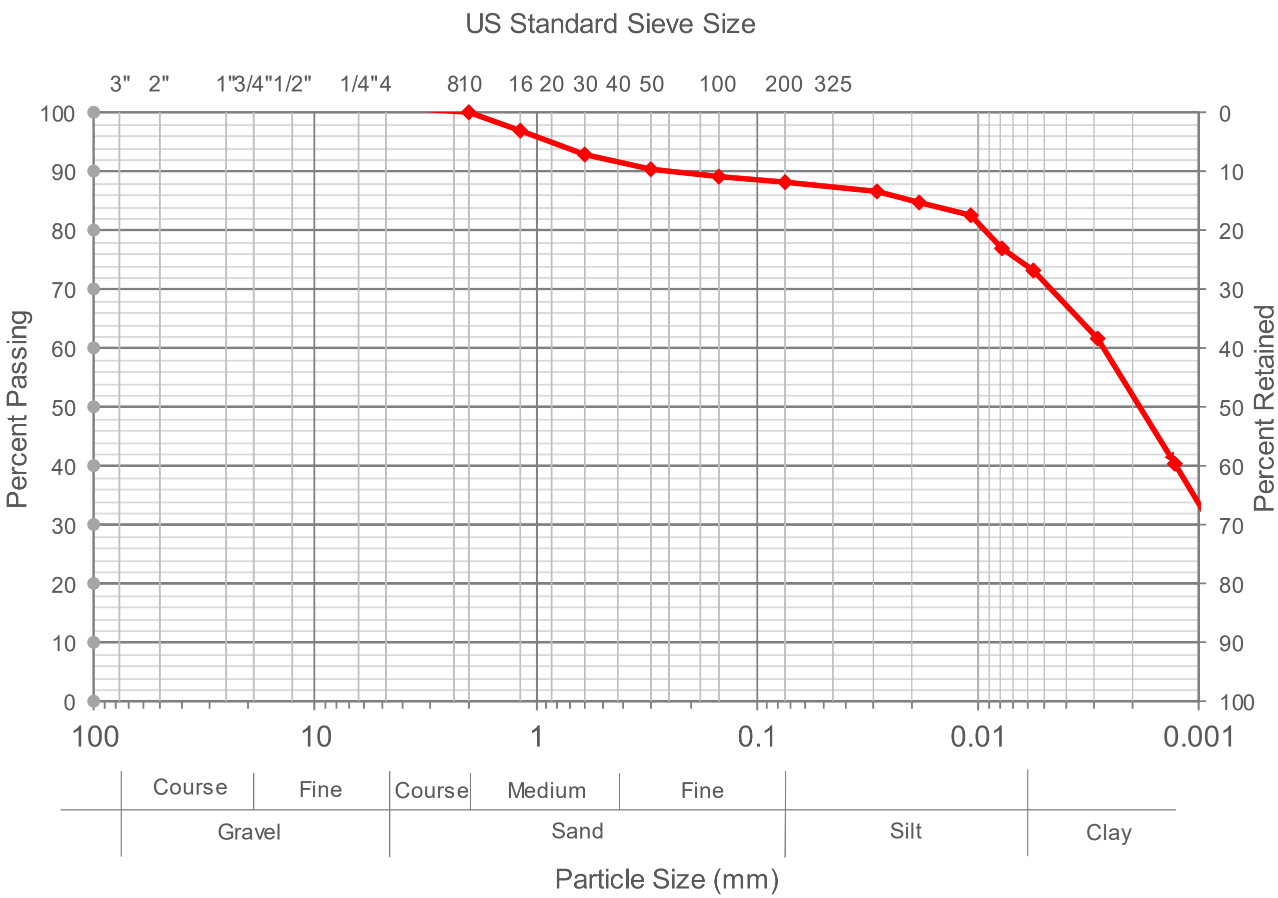
Max Unconfined Compressive Strength	
Elapsed Time	3.0 min
Vertical Dial	0.15 in
Strain	2.5 %
Area	0.03277 ft^2
Axial Load	194.4 lbs
Compressive Strength	5,931 psf

Hydrometer Analysis – ASTM D422

Project Number: 819-1 **Boring/Sample No:** SFB-5 **Depth:** 2

Project Name: Lee Property Development **Test Date:** 04-20-20

Description: Olive brown silty CLAY some sand (CH) **Tested By:** R



Composite Sieve Data

Standard Sieve Size	Percent Passing
3"	
1.5"	
3/4"	
3/8"	
#4	
#10	100.0
#16	96.9
#30	93.1
#50	90.6
#100	89.2
#200	88.3

Particle Diameter (mm)	Percent Soil in Suspension
0.0288	86.6
0.0184	84.7
0.0107	82.8
0.0078	77.0
0.0056	73.2
0.0029	61.6
0.0013	40.4

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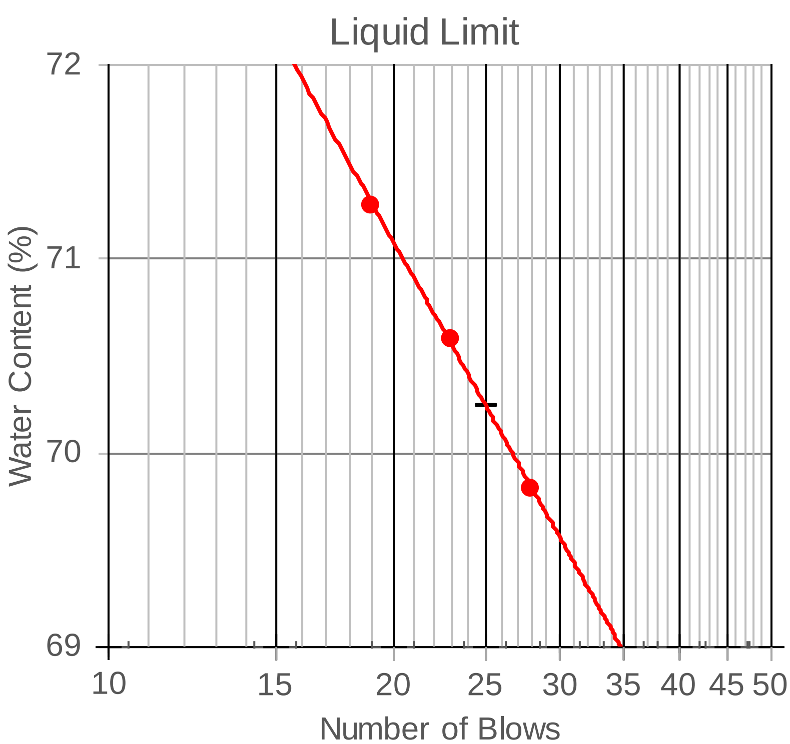
Atterberg Limits Test – ASTM D4318

Project Number: 819-1 **Boring/Sample No:** SFB-5 **Depth:** 2

Project Name: Lee Property Development **Test Date:** 04-17-20

Description: Olive brown silty CLAY some sand (CH) **Tested By:** R

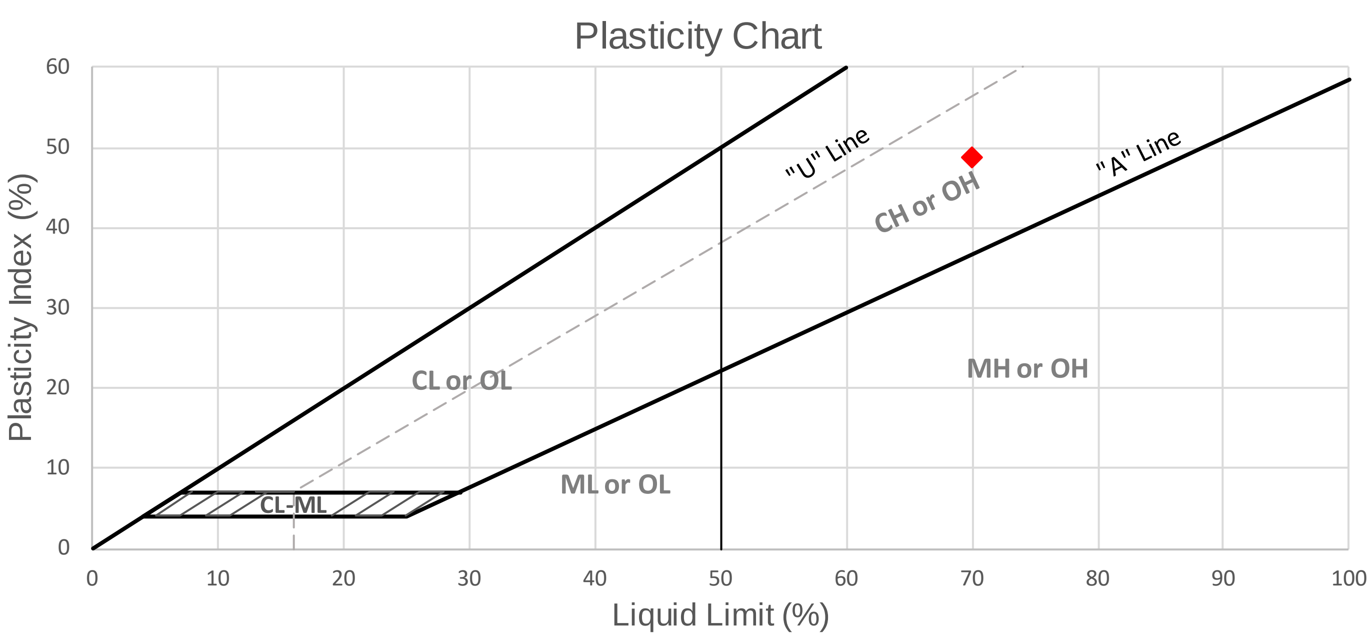


Plastic Limit Data

Trial	1	2	Ave
Water Content (%)	20.9	21.2	21.1

Data Summary

Liquid Limit	**70**
Plastic Limit	**21**
Plasticity Index	**49**
Natural Water Content	**21.8**
Liquidity Index	**0.016**
% Passing #200 Sieve	**88.3**

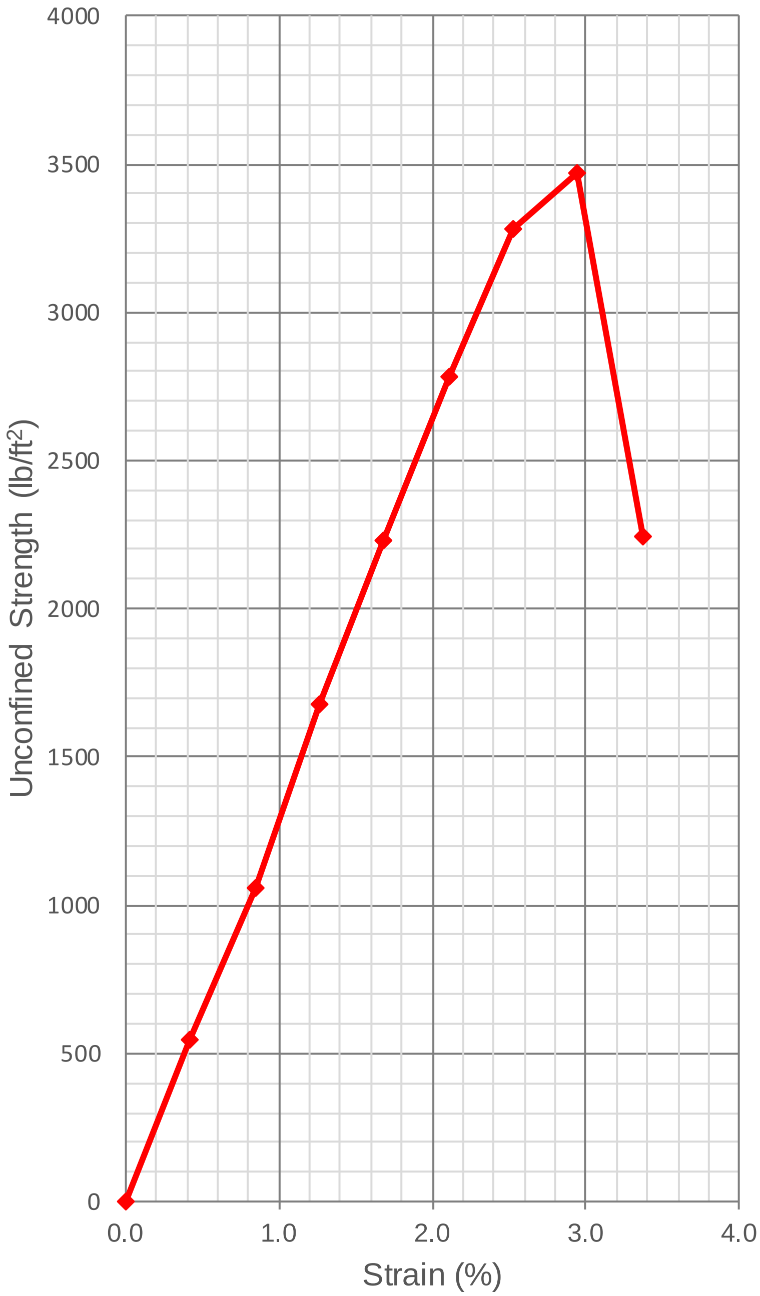


UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-5 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-15-20

Description: Olive brown silty CLAY some sand (CH) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.94 in
Volume	0.01581 ft^3
Water Content	21.8 %
Wet Density	111.5 pcf
Dry Density	91.6 pcf

Max Unconfined Compressive Strength	
Elapsed Time	3.5 min
Vertical Dial	0.175 in
Strain	2.9 %
Area	0.03291 ft^2
Axial Load	114.3 lbs
Compressive Strength	3,473 psf

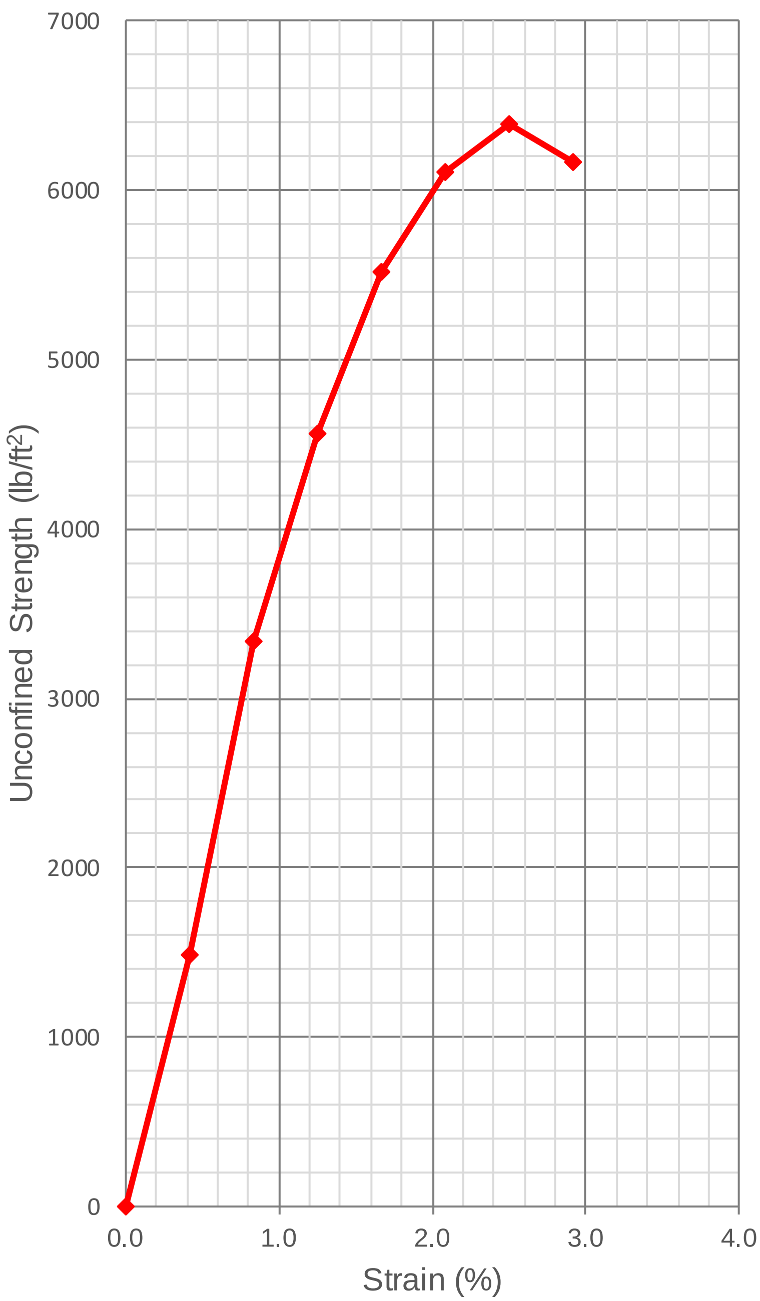
Stevens Serrone & Bailey Engineering Company, Inc

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-6 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-15-20

Description: Dark brown silty CLAY with sand some gravel (CL) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	6 in
Volume	0.01597 ft^3
Water Content	11.8 %
Wet Density	133.7 pcf
Dry Density	119.7 pcf

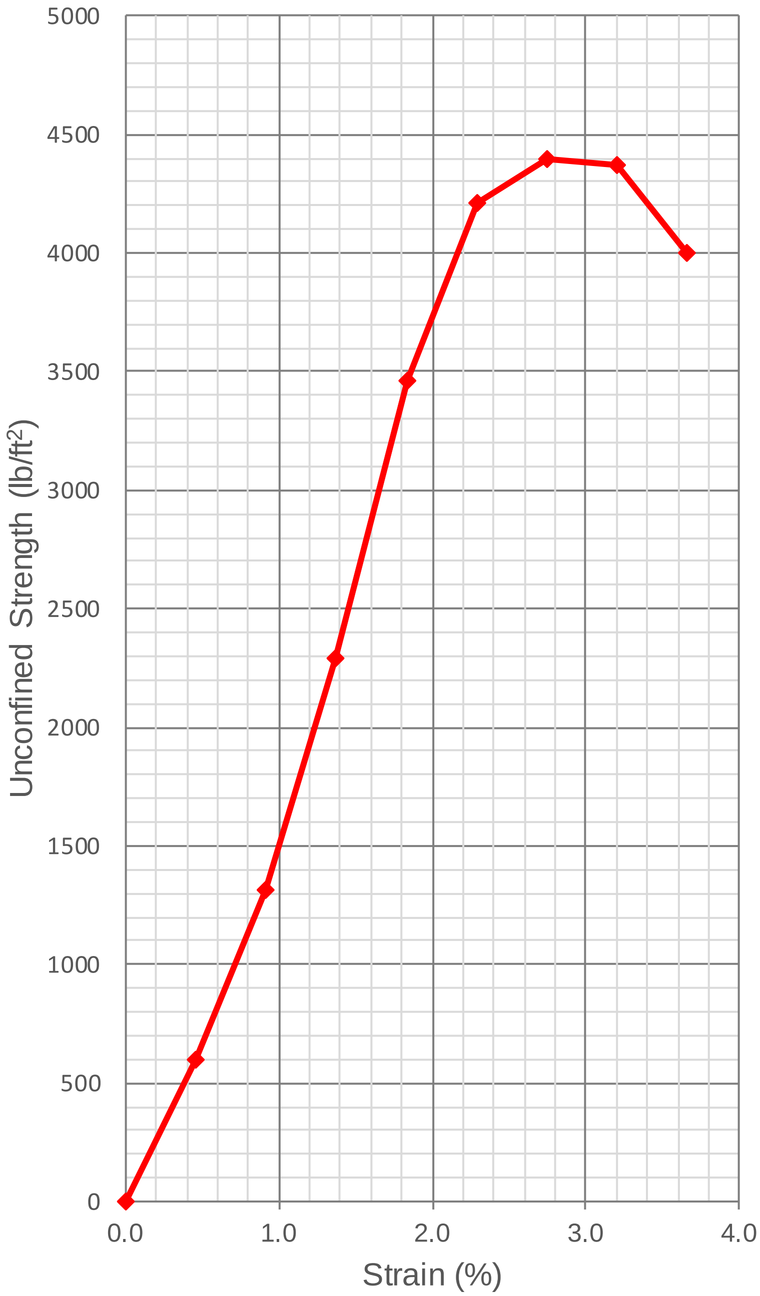
Max Unconfined Compressive Strength	
Elapsed Time	3.0 min
Vertical Dial	0.15 in
Strain	2.5 %
Area	0.03276 ft^2
Axial Load	209.4 lbs
Compressive Strength	6,391 psf

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-8 **Depth :** 1.5

Project Name: Lee Property Development **Date:** 04-15-20

Description: Dark brown silty CLAY some sand (CL) **Tested By:** R



Soil Specimen Initial Measurements

Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.46 in
Volume	0.01453 ft^3
Water Content	13.3 %
Wet Density	116.3 pcf
Dry Density	102.7 pcf

Max Unconfined Compressive Strength

Elapsed Time	3.0 min
Vertical Dial	0.15 in
Strain	2.7 %
Area	0.03284 ft^2
Axial Load	144.3 lbs
Compressive Strength	4,393 psf

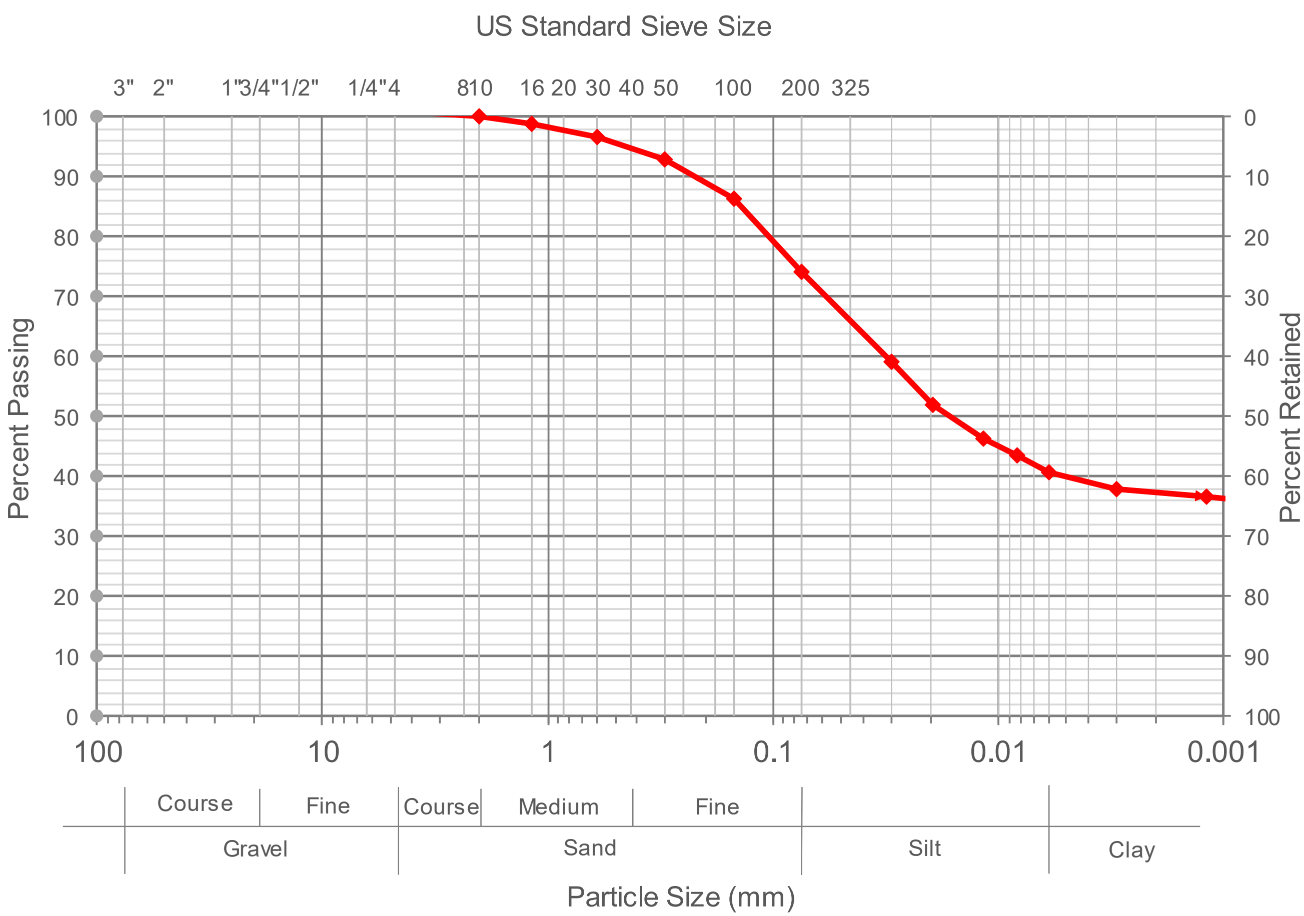
Stevens Ferrone & Bailey Engineering Company, Inc

Hydrometer Analysis – ASTM D422

Project Number: 819-1 **Boring/Sample No:** SFB-9 **Depth:** 2

Project Name: Lee Property Development **Test Date:** 04-20-20

Description: Light red brown silty CLAY with sand (CL) **Tested By:** R



Composite Sieve Data

Standard Sieve Size	Percent Passing
3”	
1.5”	
3/4”	
3/8”	
#4	
#10	100.0
#16	99.0
#30	96.8
#50	93.1
#100	86.4
#200	74.3

Particle Diameter (mm)	Percent Soil in Suspension
0.0296	59.2
0.0195	52.1
0.0116	46.5
0.0083	43.7
0.0060	40.9
0.0030	38.1
0.0012	36.6

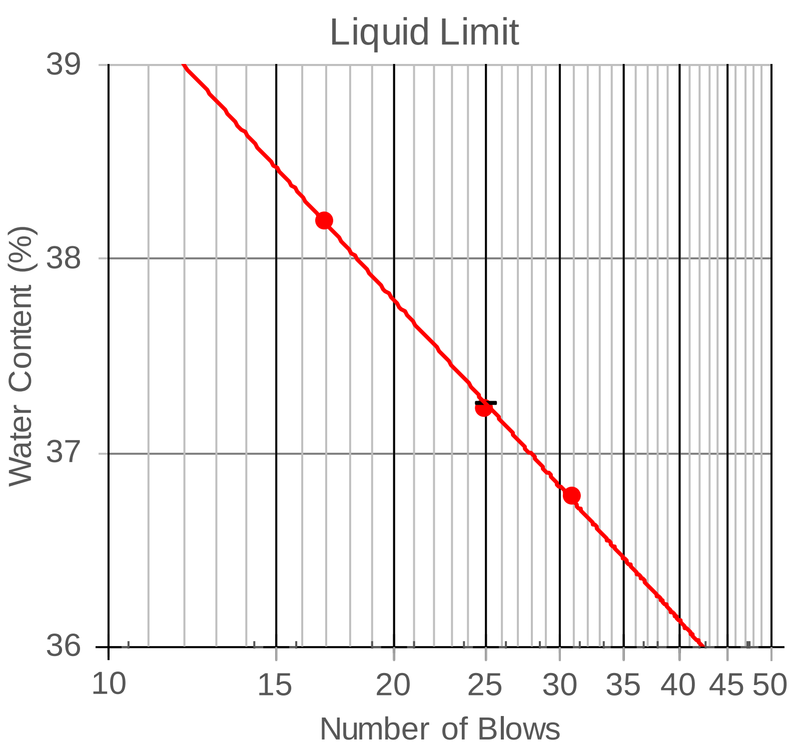
Stevens Ferrone & Bailey Engineering Company, Inc

Atterberg Limits Test – ASTM D4318

Project Number: 819-1 **Boring/Sample No:** SFB-9 **Depth:** 2

Project Name: Lee Property Development **Test Date:** 04-17-20

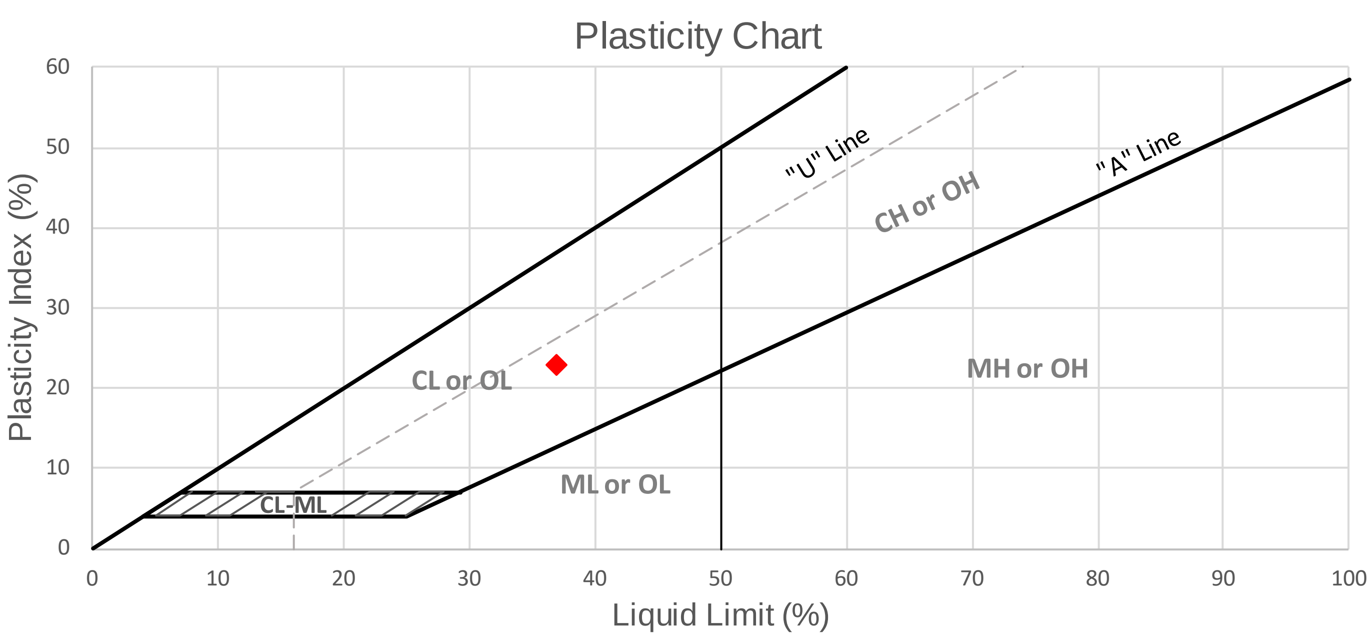
Description: Light red brown silty CLAY with sand (CL) **Tested By:** R



Plastic Limit Data

Trial	1	2	Ave
Water Content (%)	14.0	13.5	13.8

Data Summary	
Liquid Limit	**37**
Plastic Limit	**14**
Plasticity Index	**23**
Natural Water Content	**10.6**
Liquidity Index	**-0.148**
% Passing #200 Sieve	**74.3**

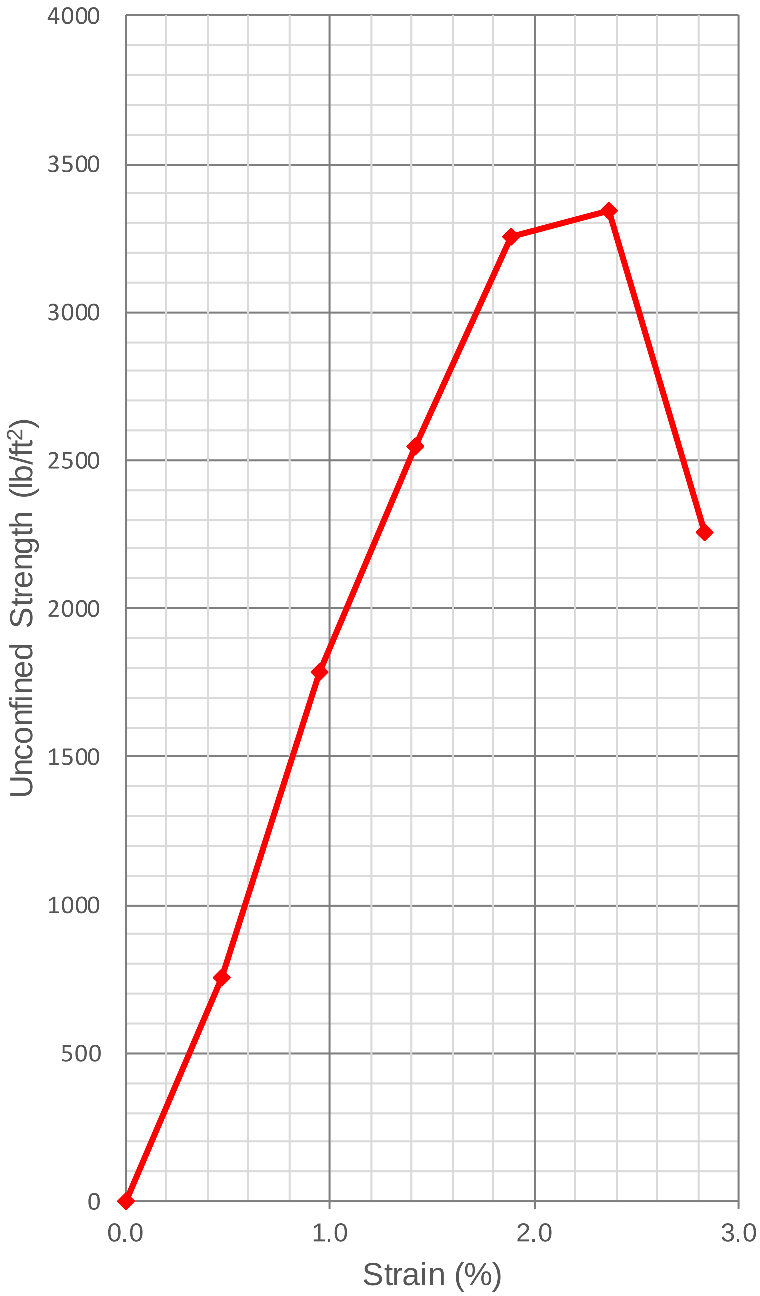


UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-9 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-15-20

Description: Light red brown silty CLAY with sand (CL) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.3 in
Volume	0.01411 ft^3
Water Content	10.6 %
Wet Density	104.0 pcf
Dry Density	94.1 pcf

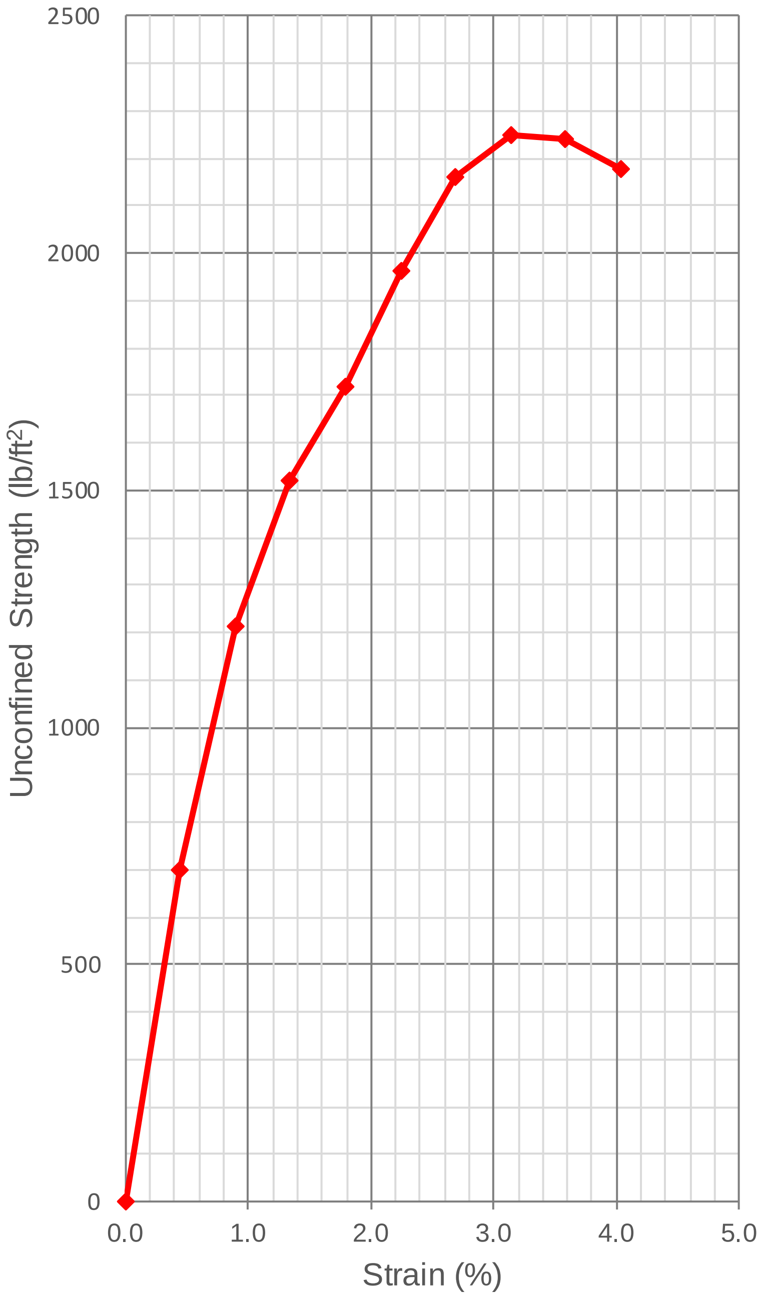
Max Unconfined Compressive Strength	
Elapsed Time	2.5 min
Vertical Dial	0.125 in
Strain	2.4 %
Area	0.03271 ft^2
Axial Load	109.2 lbs
Compressive Strength	3,338 psf

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-10 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-16-20

Description: Brown silty CLAY with sand (CL) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.58 in
Volume	0.01485 ft^3
Water Content	15.3 %
Wet Density	114.2 pcf
Dry Density	99.0 pcf

Max Unconfined Compressive Strength	
Elapsed Time	3.5 min
Vertical Dial	0.175 in
Strain	3.1 %
Area	0.03298 ft^2
Axial Load	74.2 lbs
Compressive Strength	2,250 psf

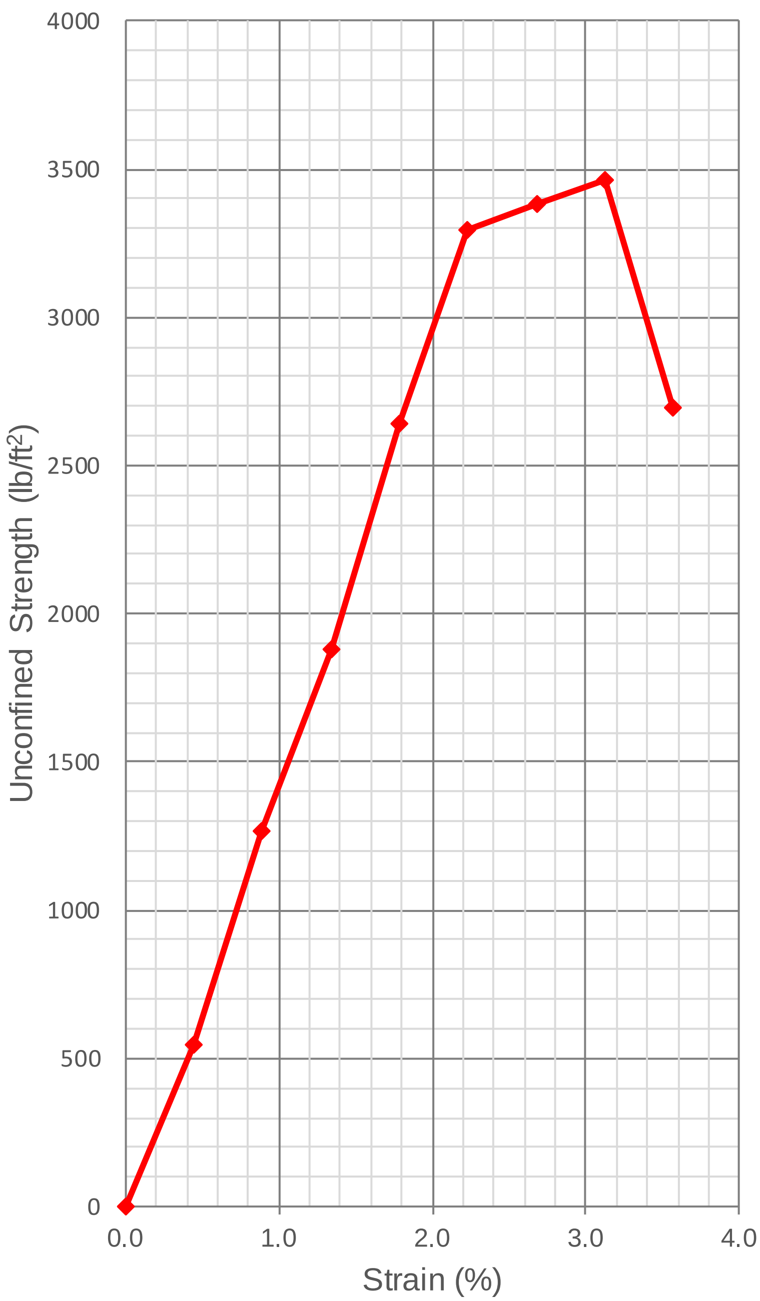
Stevens Ferrone & Bailey Engineering Company, Inc

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-11 **Depth :** 2

Project Name: Lee Property Development **Date:** 04-16-20

Description: Light brown silty CLAY with sand trace gravel (CL) **Tested By:** R



Soil Specimen Initial Measurements	
Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.6 in
Volume	0.01491 ft^3
Water Content	12.2 %
Wet Density	112.7 pcf
Dry Density	100.5 pcf

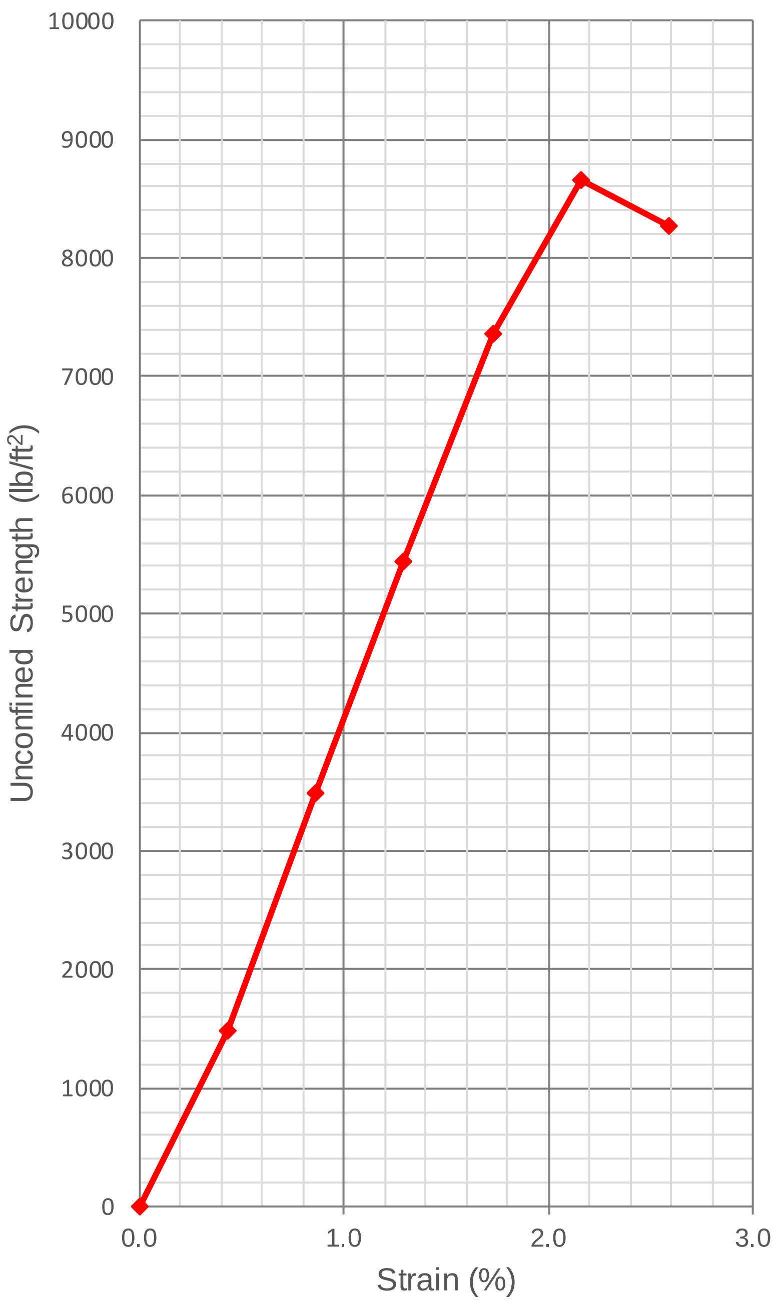
Max Unconfined Compressive Strength	
Elapsed Time	3.5 min
Vertical Dial	0.175 in
Strain	3.1 %
Area	0.03297 ft^2
Axial Load	114.3 lbs
Compressive Strength	3,466 psf

UNCONFINED COMPRESSIVE STRENGTH – D2166

Project Number: 819-1 **Boring/Sample No:** SFB-11 **Depth :** 5.5

Project Name: Lee Property Development **Date:** 04-16-20

Description: Dark gray brown silty CLAY some sand (CL/CH) **Tested By:** R



Soil Specimen Initial Measurements

Diameter	2.42 in
Initial Area	4.60 in^2
Initial Length	5.8 in
Volume	0.01544 ft^3
Water Content	16.0 %
Wet Density	123.4 pcf
Dry Density	106.3 pcf

Max Unconfined Compressive Strength

Elapsed Time	2.5 min
Vertical Dial	0.125 in
Strain	2.2 %
Area	0.03265 ft^2
Axial Load	282.8 lbs
Compressive Strength	8,662 psf

APPENDIX C

Previous Exploratory Boring Logs, Trench Logs, and Laboratory Testing

Earth Systems Pacific

Boring No. 1

LOGGED BY: J. Feltman
DRILL RIG: Concord 9201
AUGER TYPE: 4" Solid Stem

PAGE 1 OF 1
JOB NO.: SH-10640-SA
DATE: 7/13/06

LEE RESIDENCE
Old Ranch Road
Hollister, San Benito County, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 12 IN.
0	CL		Dark brown sandy lean CLAY, moist, very stiff	0.0–2.0	Grab Sample			
2			–yellowish brown, very stiff, with caliche staining common	2.0–3.5	Ring Sample	107.3	18.8	30
5				5.0–6.5	Ring Sample	105.8	19.5	28
6	SC		Red brown clayey SAND, moist, medium dense, fine to medium grained					
8.5	CL		Yellowish brown sandy lean CLAY with gravel, moist, very stiff, fine sand and gravel					
10			–gravelly at base	10.0–11.5	SPT			17
11	SC		Red brown clayey SAND, moist, medium dense					
15			–yellow brown	15.0–16.5	SPT			23
16.5			End of Boring @ 16.5' No subsurface water was encountered					

Depth scale: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

LEGEND: ■ Ring Sample ○ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 2

LOGGED BY: J. Feltman
DRILL RIG: Concord 9201
AUGER TYPE: 4" Solid Stem

PAGE 1 OF 1
JOB NO.: SH-10640-SA
DATE: 7/13/06

LEE RESIDENCE
Old Ranch Road
Hollister, San Benito County, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 12 IN.
0	CL		Dark brown lean CLAY with sand, moist, very stiff	0.0–2.0	Grab Sample			
1				1.0–2.5	Ring Sample	106.3	17.5	34
3	CL		Light brown to tan sandy lean CLAY, moist, very stiff, with rock fragments	3.0–4.5	Ring Sample	90.7	22.5	32
4			–olive, hard					
5			–olive gray to orange brown –tan (caliche staining) –olive gray	5.0–6.5	Ring Sample	89.8	26.6	47
9			–very stiff					
10			–olive gray, mottled with orange brown	10.0–11.5	SPT			24
15				15.0–16.5	SPT			27
20				20.0–21.5	SPT			20
21			–olive gray, trace fine sand					
22			End of Boring @ 21.5' No subsurface water was encountered					

LEGEND: Ring Sample ◯ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 3

LOGGED BY: J. Feltman
DRILL RIG: Concord 9201
AUGER TYPE: 4" Solid Stem

PAGE 1 OF 1
JOB NO.: SH-10640-SA
DATE: 7/13/06

LEE RESIDENCE
Old Ranch Road
Hollister, San Benito County, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 12 IN.
0	CL		Dark brown lean CLAY with sand, moist, very stiff	0.0–2.0	Grab Sample			
1				1.0–2.5	Ring Sample	109.1	14.7	30
3			–olive brown, moist, hard, mottled with caliche					
4				4.0–5.5	Ring Sample	95.6	19.4	56
8			–very stiff					
10				10.0–11.5	SPT			21
10.5			–light olive gray					
12.5			–hard					
15			–yellow olive, sandy	15.0–16.5	SPT			38
16	SC		Pale gray to olive clayey SAND, moist, dense					
17			End of Boring @ 16.5' No subsurface water was encountered					

LEGEND: Ring Sample, Grab Sample, Shelby Tube Sample, SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Lee Residence Additions

SH-10640-SA
September, 2006

BULK DENSITY & MOISTURE TEST RESULTS

ASTM D 2937-04 (modified for ring liners)

SAMPLE NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
B1-1	3.0 - 3.5	18.8	127.5	107.3
B1-2	6.0 - 6.5	19.5	126.5	105.8
B2-1	2.0 - 2.5	17.5	125.0	106.3
B2-2	4.0 - 4.5	22.5	111.1	90.7
B2-3	6.0 - 6.5	26.6	113.6	89.8
B3-1	2.0 - 2.5	14.7	125.2	109.1
B3-2	5.0 - 5.5	19.4	114.2	95.6

PLASTICITY INDEX TEST RESULTS

ASTM D 4318-05

SAMPLE NO.	DEPTH feet	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
Bag A, B-1	0.0 - 2.0	39	9	30
Bag C, B-3	0.0 - 2.0	36	11	25

Lee Residence Additions

SH-10640-SA

MAXIMUM DENSITY / OPTIMUM MOISTURE

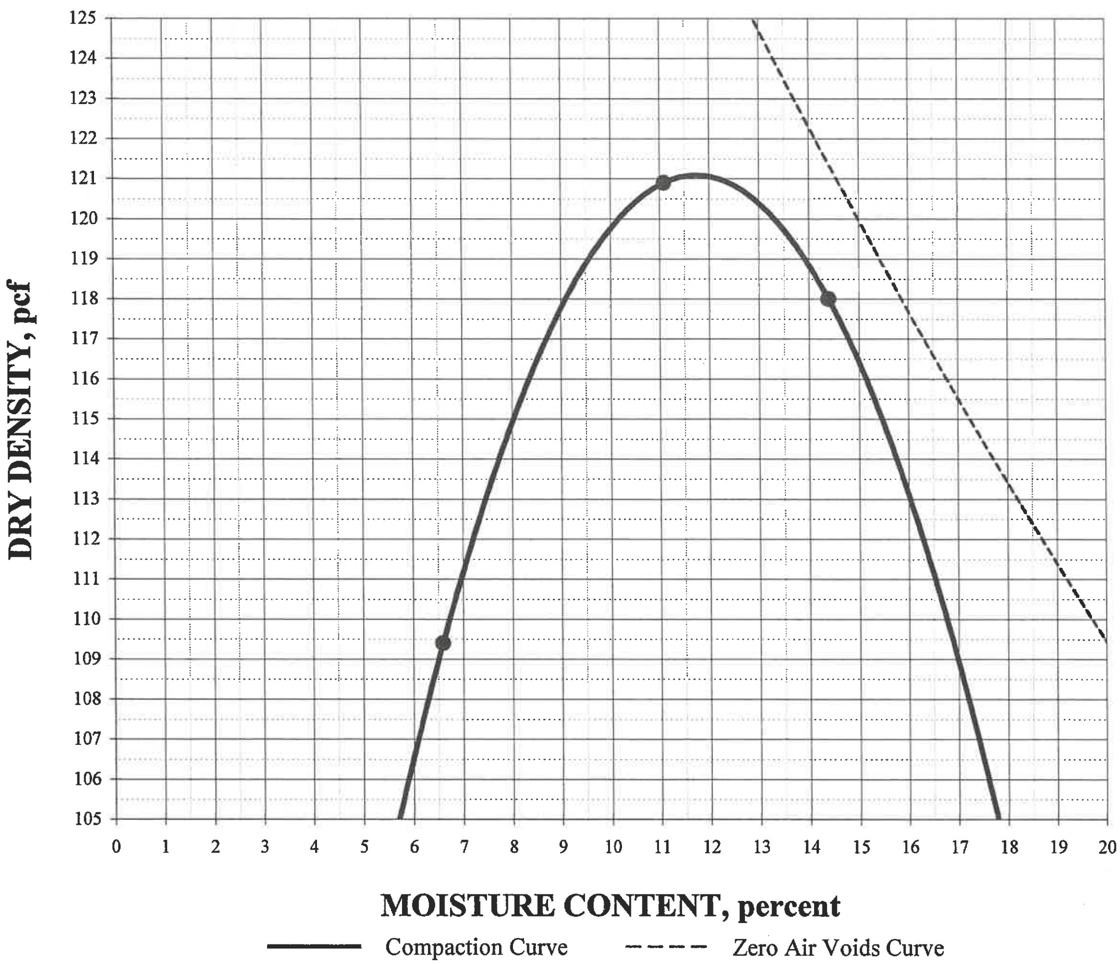
ASTM D 1557-02 (Modified)

September, 2006

Dark brown sandy lean CLAY (CL)
Bag A , Boring #1 @ 0.0' - 2.0'

MAXIMUM DENSITY: 121.0 pcf
OPTIMUM MOISTURE: 12.0%

PROCEDURE USED: A
PREPARATION METHOD: Moist
RAMMER TYPE: Manual
SPECIFIC GRAVITY: 2.70 (assumed)



Lee Residence Additions

SH-10640-SA

September, 2006

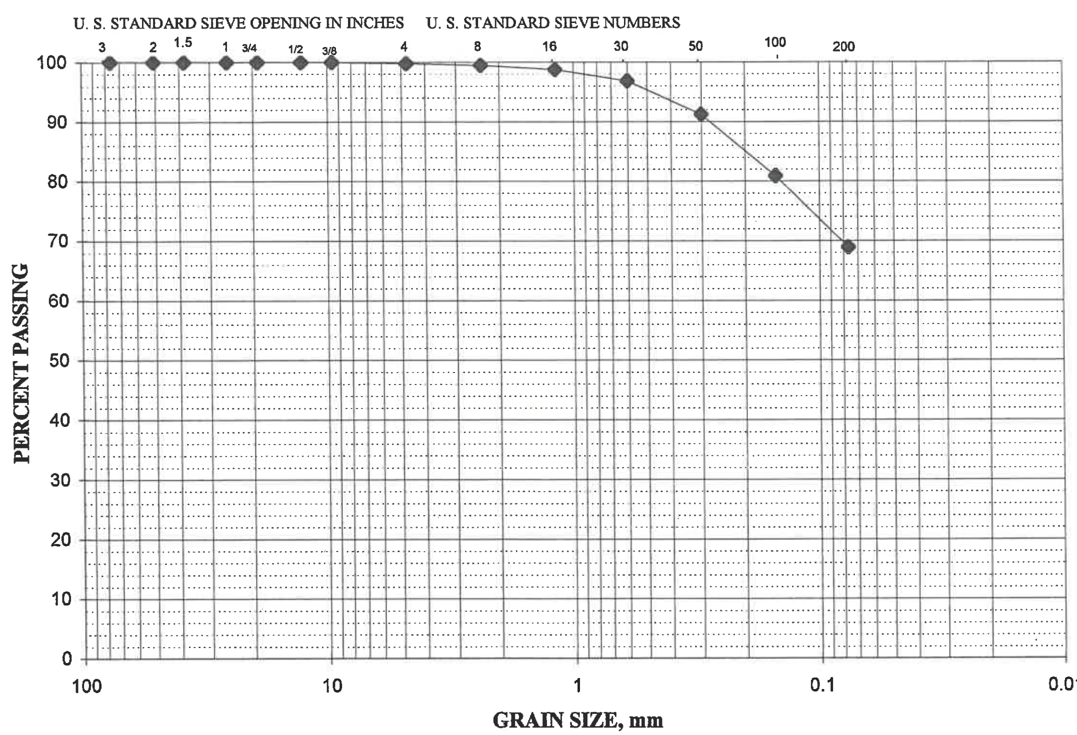
ASTM D 422-63(2002); D 1140-00

PARTICLE SIZE ANALYSIS

Bag A, B-1 @ 0.0' - 2.0'

Dark brown sandy lean CLAY (CL)

Sieve size	% Retained	% Passing
3"	0	100
2"	0	100
1.5"	0	100
1"	0	100
3/4"	0	100
1/2"	0	100
3/8"	0	100
#4	0	100
#8	1	99
#16	1	99
#30	3	97
#50	9	91
#100	19	81
#200	31	69



Lee Residence Additions

SH-10640-SA
September, 2006

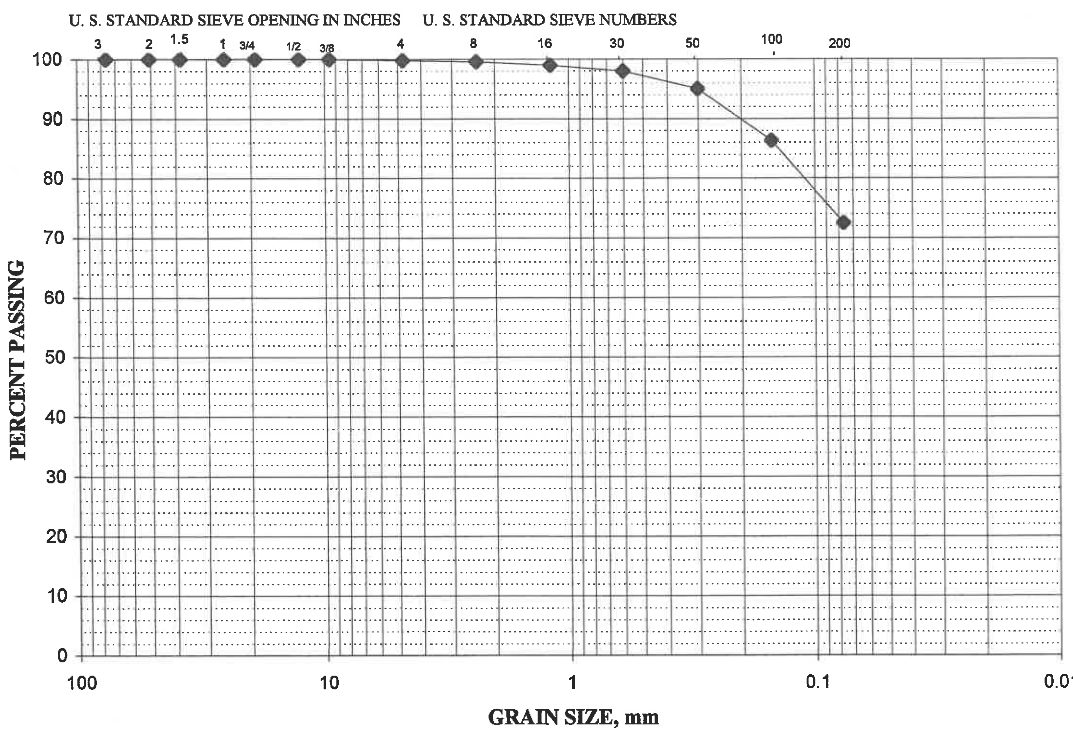
PARTICLE SIZE ANALYSIS

ASTM D 422-63(2002); D 1140-00

Bag C, B-3 @ 0.0' - 2.0'

Dark brown lean CLAY with sand (CL)

Sieve size	% Retained	% Passing
3"	0	100
2"	0	100
1.5"	0	100
1"	0	100
3/4"	0	100
1/2"	0	100
3/8"	0	100
#4	0	100
#8	0	100
#16	1	99
#30	2	98
#50	5	95
#100	14	86
#200	28	72



Earth Systems Pacific

Boring No. 4

PAGE 1 OF 1
JOB NO.: SH-10640-SA
12/08/06

LOGGED BY: J. Feltman
DRILL RIG: B-40
AUGER TYPE: 8" Hollow Stem

LEE PROPERTY
Old Ranch Road
San Benito County, California

DEPTH (feet)	USCS CLASS	SOIL DESCRIPTION	INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 12 IN.
0	CH	Dark brown FAT CLAY, slightly moist, medium stiff; Fill					
1	CL	Dark brown sandy lean CLAY with sand, moist, stiff to very stiff; Native	1.0–2.5	Ring Sample	87.8	9.8	14
			1.5–5.0	Grab Sample			
3			3.0–4.5	Ring Sample	103.6	10.4	25
5		–brown, hard	5.0–6.5	Ring Sample	94.0	11.9	43
6		–locally tan					
8	SC	Yellowish brown clayey SAND, moist, dense, fine grained	8.5–10.0	SPT			32
12.7	GC–GM	Gray to yellow brown silty clayey GRAVEL, moist, very dense, coarse grained	13.5–15.0	SPT			50/5"
14.5		End of Boring @ 14.5' No subsurface water was encountered					

Depth scale: 0 – 26 feet

LEGEND: Ring Sample; Grab Sample; Shelby Tube Sample; SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 5

LOGGED BY: J. Feltman
DRILL RIG: B-40
AUGER TYPE: 8" Hollow Stem

PAGE 1 OF 1
JOB NO.: SH-10640-SA
12/08/06

LEE PROPERTY
Old Ranch Road
San Benito County, California

DEPTH (feet)	USCS CLASS	SOIL DESCRIPTION	INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 12 IN.
0–3	CL	Brown to red brown sandy lean CLAY, very moist, hard –light yellow brown, sandy	0.0–5.0	Grab Sample			
			1.0–2.5	Ring Sample	114.1	16.7	50
3–5	SC	Yellowish brown clayey SAND, moist, medium dense, fine to medium grained with fine gravel	3.0–4.5	Ring Sample	113.6	7.3	26
5–7.5	SW	Gray to yellow brown well graded SAND, moist, medium dense, fine to coarse sand, fine gravel, variably silty	5.0–6.5	Ring Sample	113.2	3.9	17
7.5–12.5	GW–GM	Dark yellow to olive brown well graded gravel with silt, moist, medium dense, fine to coarse sand and gravel –variably well graded sand with silt and gravel	8.5–10.0	SPT			29
12.5–15	GM	Gray silty GRAVEL, moist, dense, coarse grained	13.5–15.0	SPT			42
15		End of Boring @ 15.0' No subsurface water was encountered					

LEGEND: Ring Sample, Grab Sample, Shelby Tube Sample, SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Lee Property

SH-10640-SA
January, 2007

BULK DENSITY & MOISTURE TEST RESULTS

ASTM D 2937-04 (modified for ring liners)

SAMPLE NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
B4-1	2.0 - 2.5	9.8	96.4	87.8
B4-2	4.0 - 4.5	10.4	114.3	103.6
B4-3	6.0 - 6.5	11.9	105.3	94.0
B5-1	2.0 - 2.5	16.7	133.1	114.1
B5-2	4.0 - 4.5	7.3	121.9	113.6
B5-3	6.0 - 6.5	3.9	117.7	113.2

PLASTICITY INDEX TEST RESULTS

ASTM D 4318-05

SAMPLE NO.	DEPTH feet	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
Bag C, B-4	1.5 - 5.0	50	13	37

Lee Property

SH-10640-SA

January, 2007

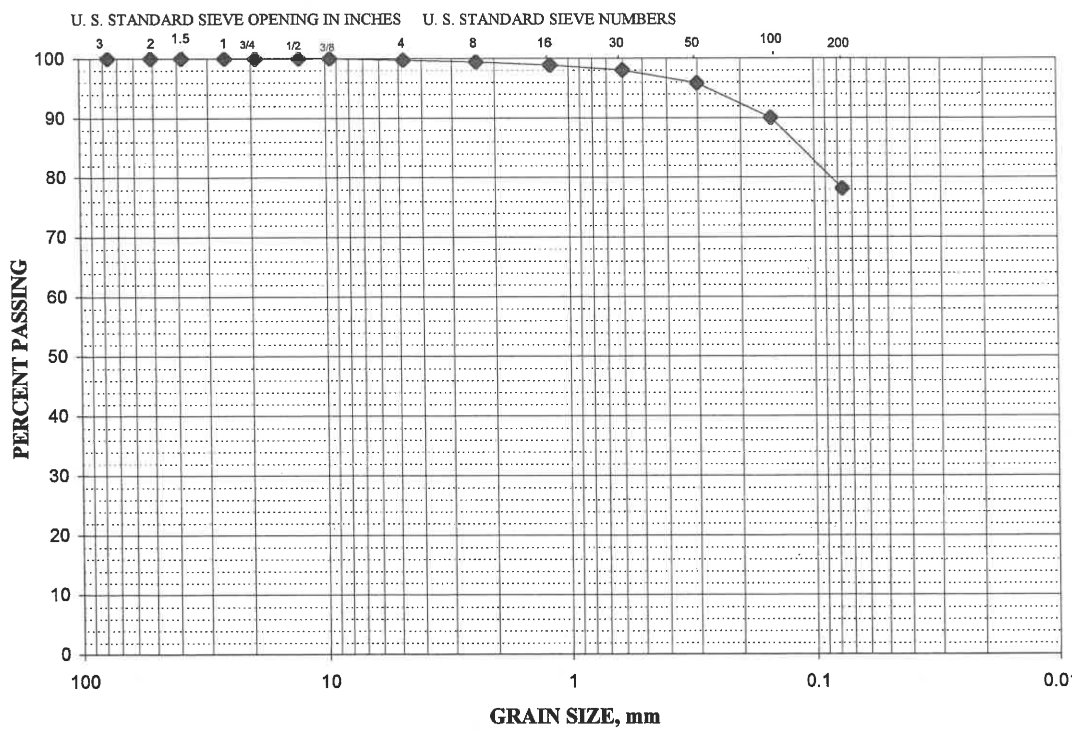
ASTM D 422-63(2002); D 1140-00

PARTICLE SIZE ANALYSIS

Bag C, B-4 @ 1.5' - 5.0'

Dark brown fat CLAY with sand (CH)

Sieve size	% Retained	% Passing
3"	0	100
2"	0	100
1.5"	0	100
1"	0	100
3/4"	0	100
1/2"	0	100
3/8"	0	100
#4	0	100
#8	1	99
#16	1	99
#30	2	98
#50	4	96
#100	10	90
#200	22	78



PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE: 200, 40, 10, 4

CLEAR SQUARE SIEVE OPENINGS: 3/4", 3", 12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS PER FOOT*
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH (TSF)**	BLOWS PER FOOT*
VERY SOFT	0 - ¼	0 - 2
SOFT	¼ - ½	2 - 4
FIRM	½ - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

SAMPLING METHOD

STANDARD PENETRATION TEST	T	
MODIFIED CALIFORNIA	L or M	
PITCHER BARREL	P	
SHELBY TUBE	S	
BULK	B	

H_2O

Final	▽
Initial	▼
Water level designation	

*Number of blows of 140 lb hammer falling 30 inches to drive a 2" O.D. (1⅜" I.D.) split spoon sampler (ASTM D-1586)

**Unconfined compressive strength in tons/ft² as determined by laboratory testing or approximated by the Standard Penetration Test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

Haro Kasunich & Associates	KEY TO LOGS 291 Old Ranch Road Hollister, California	Project No. SB9644 July 2008	Figure No.3

Haro, Kasunich & Associates, Inc.

291 Old Ranch Road

PROJECT NO. SB9644

LOGGED BY JAH **DATE DRILLED** June 19, 2008 **BORING DIAMETER** 4 " **BORING NO.** B-1

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0			Dark brown/black Silty CLAY (desication crocks - 2" +-)	CL-ML					
	1-1 (L)		Very stiff		34				
	1-2 (T)		Light brown Sandy SILT, dry, stiff to very stiff	SM	28			7.2	% Passing #200 Sieve = 57.8
5	1-3 (L)		Yellow brown fine grain SAND with fines, dry, medium dense		32		98	2.9	% Passing #200 Sieve = 8.0
10	1-4 (T)		Streaked orange brown Sands Dense, Gravelly, rounded to subrounded		31				
15	1-5 (T)		Gravelly SAND, rounded Gravels to 1" +-		19				
20	1-6 (T)				49				
			Boring terminated at 21.5 feet						
25									
30									
35									

HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk FIGURE NO. 4

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

291 Old Ranch Road

PROJECT NO. SB9644

LOGGED BY JAH **DATE DRILLED** June 19, 2008 **BORING DIAMETER** 4 1/2" **BORING NO.** B-2

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0			Black CLAY, stiff, damp (desication cracks - 2" +-)	CL	22				
	2-1 (L)						102	7.7	
			Light brown Sandy SILT, dry, stiff to very stiff	SC	28				
	2-2 (T)							7.7	% Passing #200 Sieve = 70.1
5					35				
	2-3 (T)		Yellow brown Silty SAND with Gravel (small rounded Gravel) - dense	SM				3.8	% Passing #200 Sieve = 19.5
			Grading to medium to coarse grain Gravelly SAND, damp, dense						
10	2-4 (T)				32				
			Boring terminated at 11.5 feet						
15									
20									
25									
30									
35									

HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk **FIGURE NO.** 5

291 Old Ranch Road

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

PROJECT NO. SB9644

LOGGED BY JH **DATE DRILLED** June 19, 2008 **BORING DIAMETER** 4 1/2" **BORING NO.** B-3

Depth, ft.	Sample No. and type	Soil Description	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	Misc. Lab Results
0		Dark brown CLAY (desication cracks - 2" +-)	CL					
	3-1 (L)			27				
	3-2 (T)			21			14.6	
		Stiff CLAY						
5		Yellow brown fine Sandy SILT, dry, stiff	SC					
	3-3 (T)			19			8.9	% Passing #200 Sieve = 44.7
		Brown fine grain SAND with fines and trace small Gravel	SP					
10	3-4 (T)			34				
		Grading to Gravelly medium grain SAND, medium dense to dense						
15		Yellow brown, lean CLAY, moist, stiff	CL/CH					
	3-5 (T)			14			23.0	
20	3-6 (T)			89	4.5+			
		Boring terminated at 21.5 feet						
25								
30								
35								

HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk **FIGURE NO.** 6

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

291 Old Ranch Road

PROJECT NO. SB9644

LOGGED BY JAH **DATE DRILLED** June 19, 2008 **BORING DIAMETER** 4 1/2" **BORING NO.** B-4

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0			Dark brown CLAY, dry, stiff (desiccation cracks - 2"+-)	CL					
	4-1 (L)				41				
			Gravelly, very stiff to hard		43				
	4-2 (T)		Grey brown coarse grain Gravelly SAND, damp, dense					5.4	% Passing #200 Sieve 16.9
5					52				
	4-3 (T)							4.1	
			Sandy GRAVEL, subrounded, damp, dense						
10					27				
	4-4 (T)		Brown lean CLAY @ tip of sampler					5.3	
			Boring terminated at 11.5 feet						
15									
20									
25									
30									
35									

HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk **FIGURE NO.** 7

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

291 Old Ranch Road

PROJECT NO. SB9644

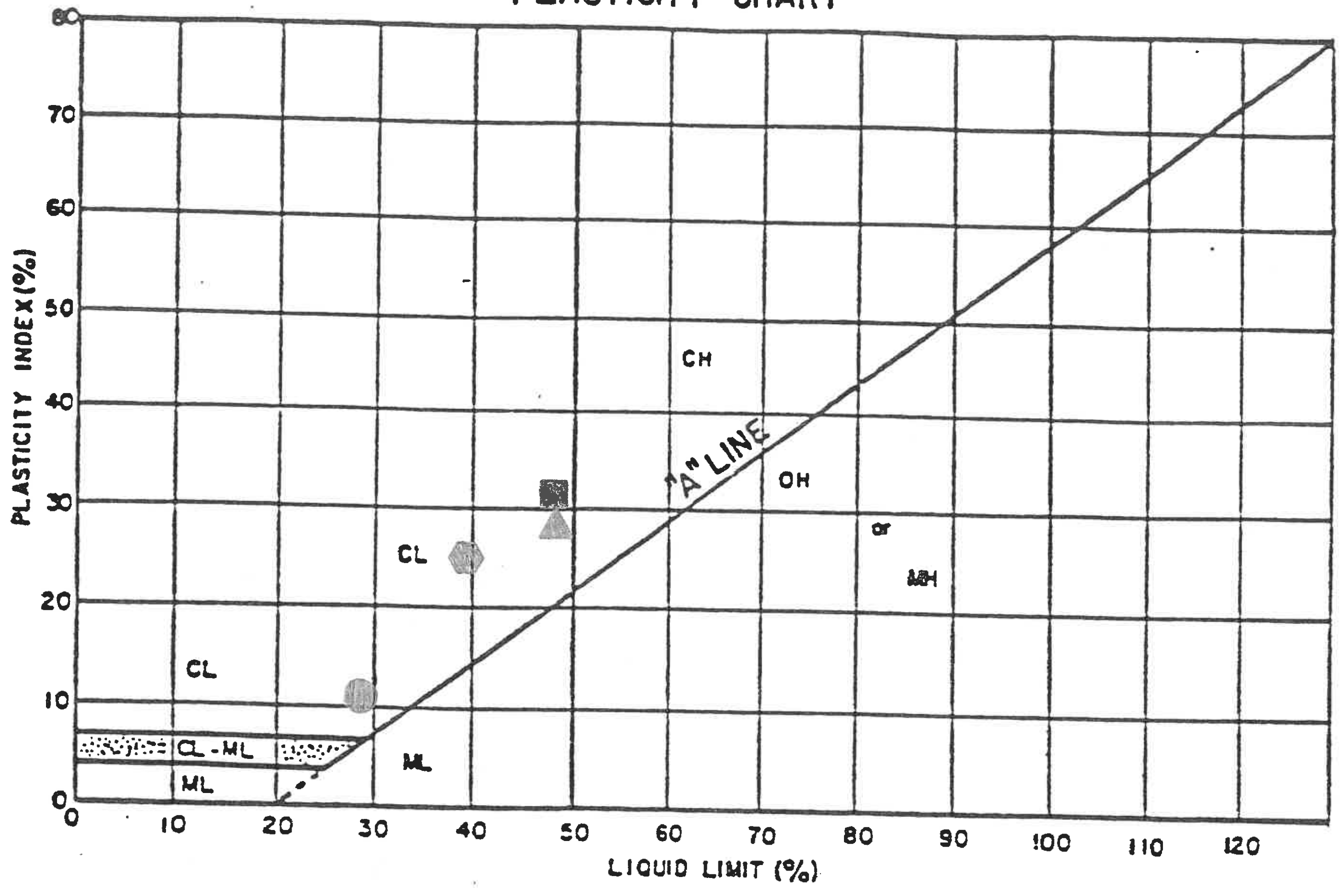
LOGGED BY JAH **DATE DRILLED** June 19, 2008 **BORING DIAMETER** 4 1/2" **BORING NO.** B-5

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0			Dark brown CLAY (desiccation cracks - 2" +-)	CL					
	5-1 (L)				44				
	5-2 (T)				26			10.4	
5	5-3 (L)		Consistency hard		52	4.5+	110	11.0	% Passing #200 Sieve = 81.1
			Silt, lense						
			Yellow brown fine SAND with fines, dry to damp, medium dense						
10	5-4 (T)				15			3.3	% Passing #200 Sieve = 9.9
15	5-5 (T)				62				
			Mottled grey brown lean CLAY, moist, very stiff to hard	CL					
20	5-6 (T)				43			21.5	% Passing #200 Sieve = 80.0
			Break in Log						
25									
			Silty fine SAND with thin lense of fine to medium grain SAND & Gravels, moist, dense						
30	5-7 (T)				57				
			Boring terminated at 31.5 feet						
35									

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\HKALOGS\SB9644.log Date: 7/18/2008

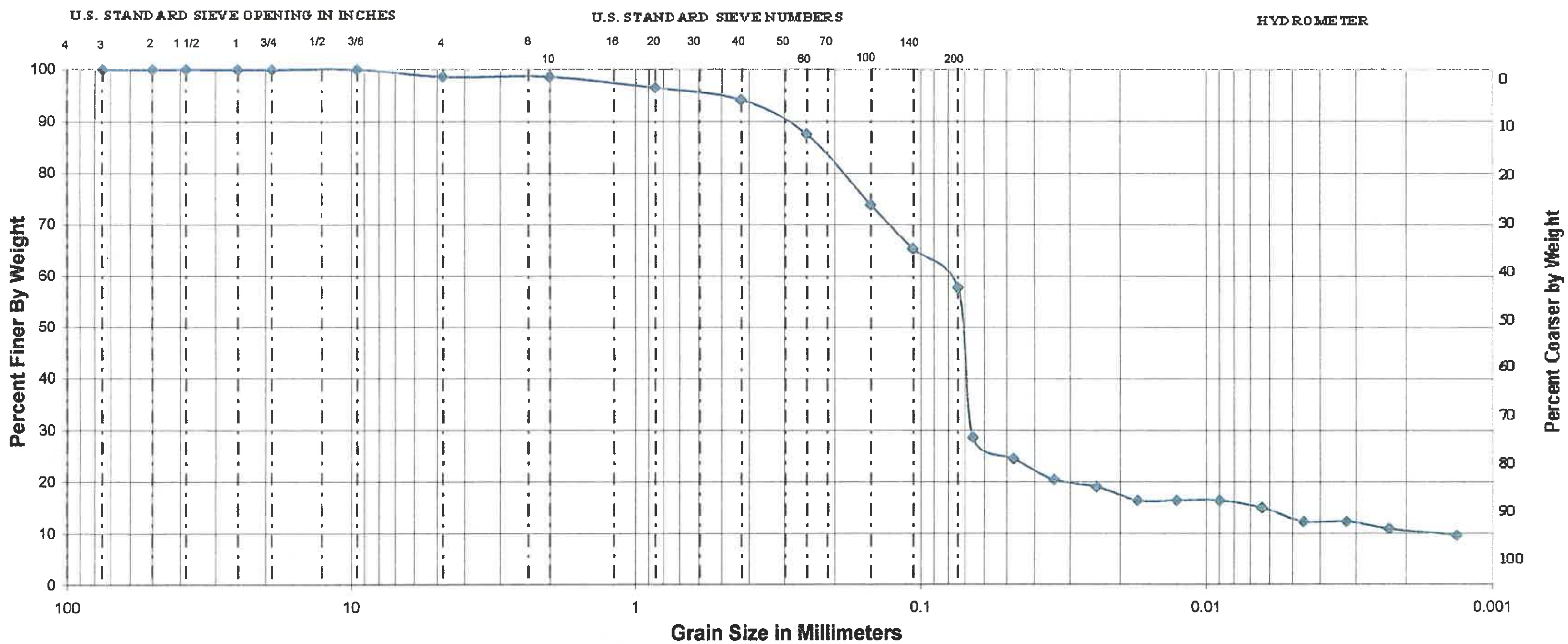
HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk **FIGURE NO. 8**



PLASTICITY DATA

KEY SYMBOL	HOLE NUMBER	DEPTH (feet)	NATURAL WATER CONTENT W (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX $\left(\frac{W-PL}{LL-PL}\right)$	UNIFIED SOIL CLASSIFICATION SYMBOL
●	2	2	7.7	17.9	28.2	11	-0.93	CL
■	3	3	14.6	17.2	47.4	31	-0.08	CL
▲	3	16	23.0	20.5	48.0	28	+0.09	CL
⬢	5	3	11.0	15.3	39.5	25	-0.17	CL



Gravel Content: 0.0%
Sand Content: 42.2%
Fines Content: 57.8%

Sample Description: Brown Silty sand
Group Symbol:

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

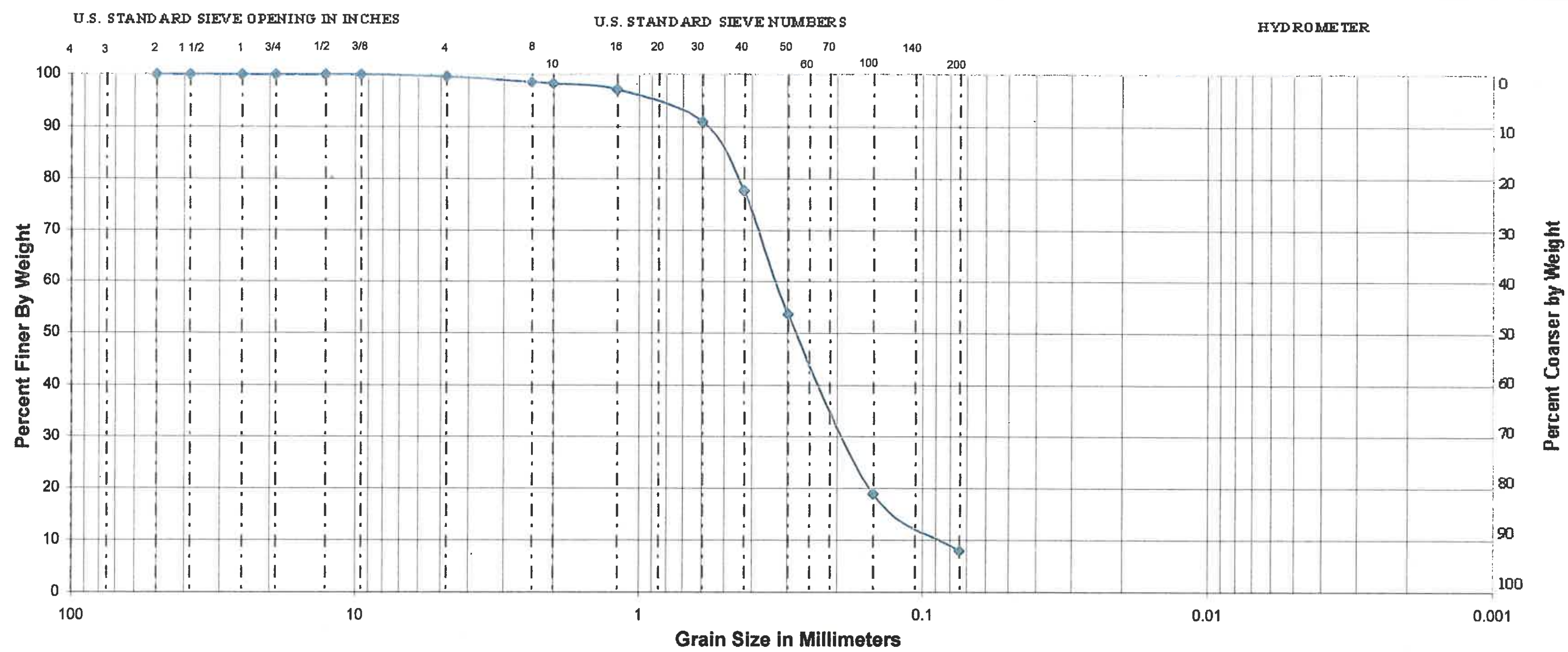
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	1-2
Date:	July 3, 2008

GRAIN SIZE DISTRIBUTION

291 Old Ranch Rd

Figure No. 10



Gravel Content:	**1.7%**
Sand Content:	**90.3%**
Fines Content:	**8.0%**

Sample Description: Tan Sand
Group Symbol: 0

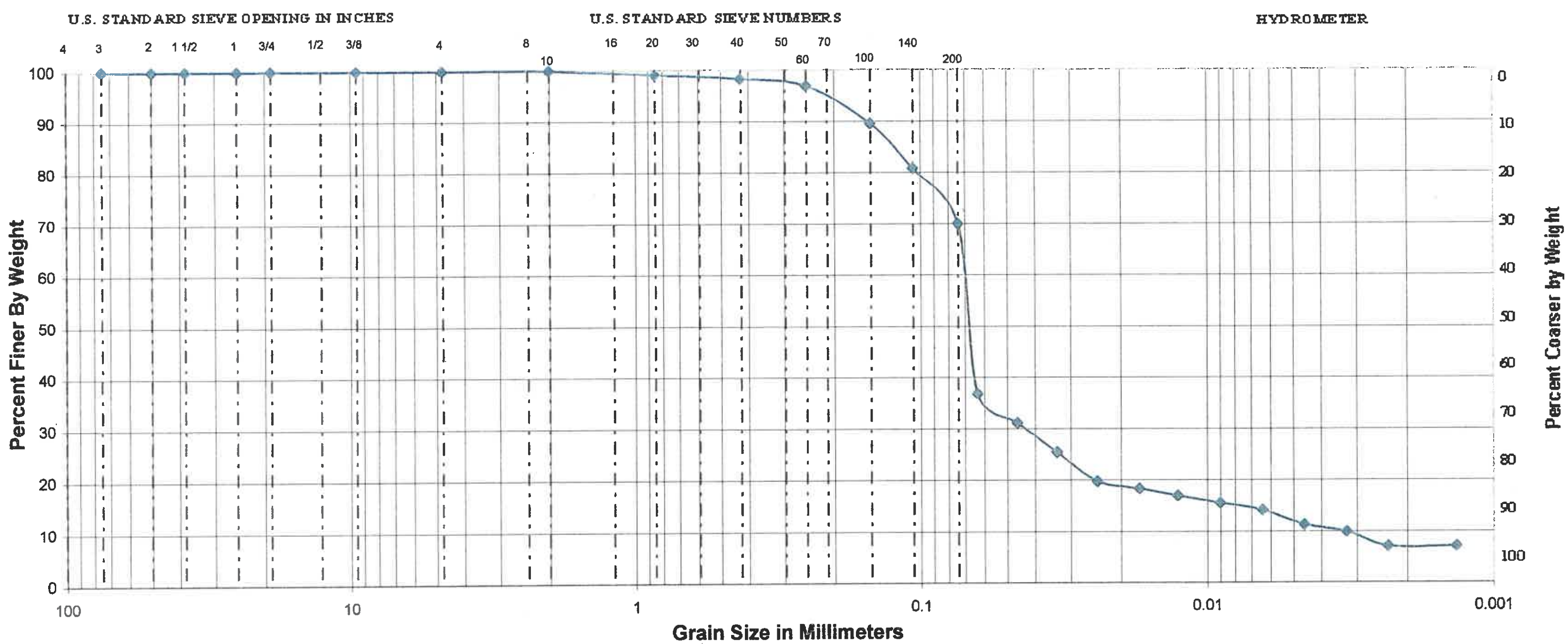
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	1-3-1
Date:	June 30, 2008

GRAIN SIZE DISTRIBUTION

291 Old Ranch Rd.

Figure No. 11



Gravel Content:	0.0%
Sand Content:	29.9%
Fines Content:	70.1%

Sample Description: Brown Silty sand
Group Symbol:

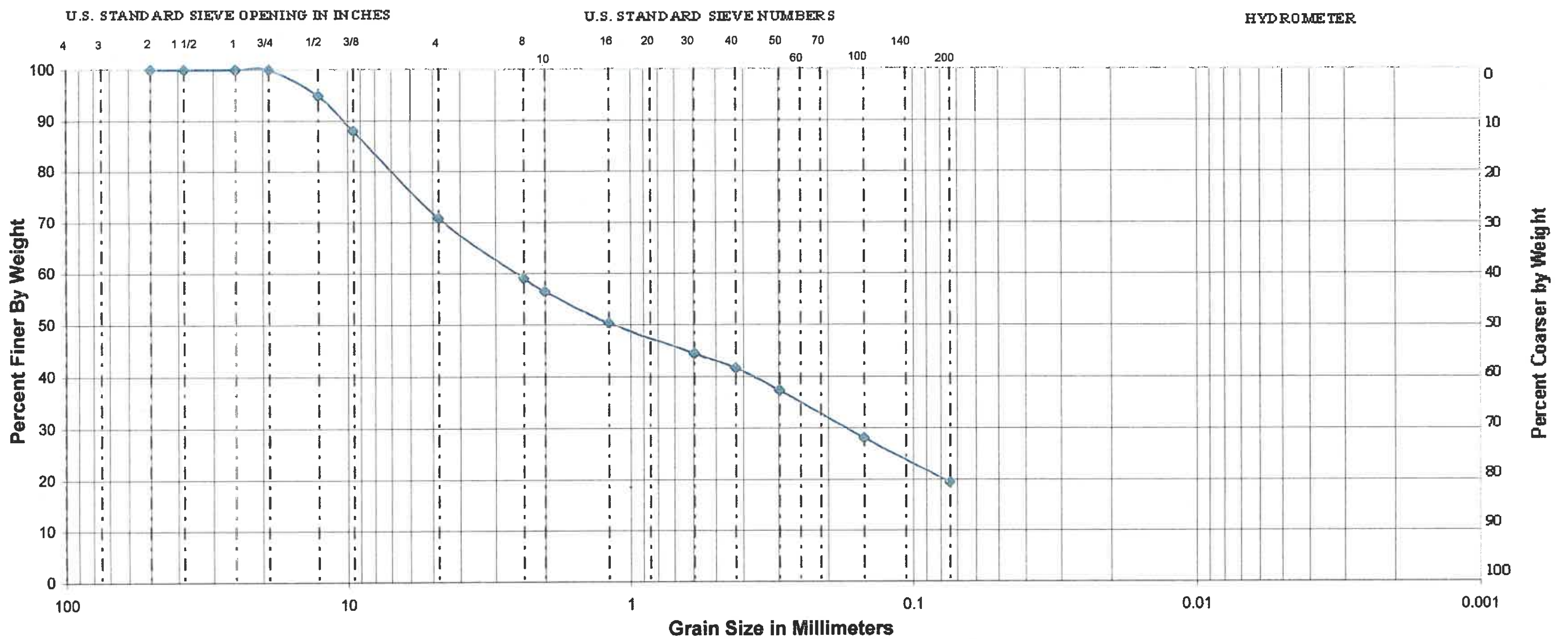
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	2-2
Date:	July 3, 2008

GRAIN SIZE DISTRIBUTION

291 Old Ranch Rd

Figure No. 12



Gravel Content: 43.4%
Sand Content: 37.1%
Fines Content: 19.5%

Sample Description: Brown Silty Sand w\ gravels
Group Symbol: 0

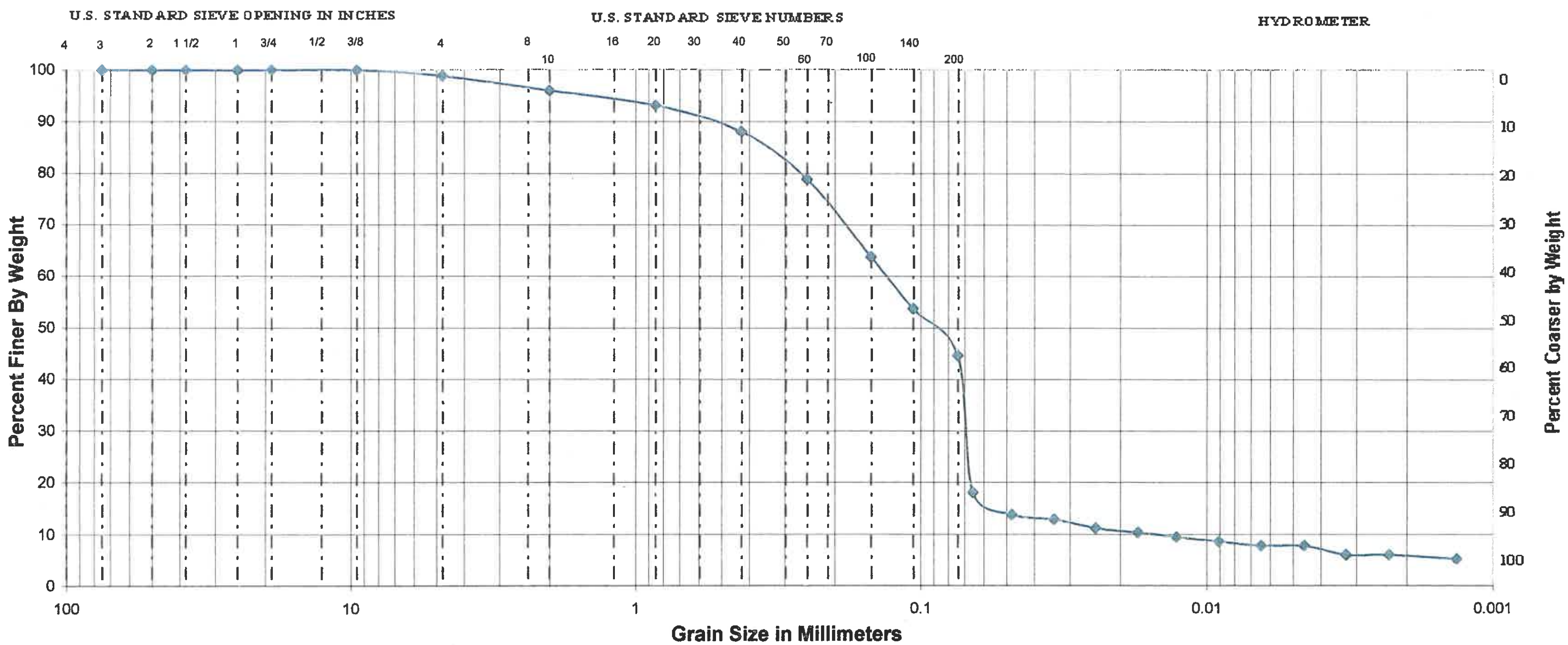
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	2-3
Date:	June 30, 2008

GRAIN SIZE DISTRIBUTION

291 Old Ranch Rd.

Figure No. 13



Gravel Content:	0.0%
Sand Content:	55.3%
Fines Content:	44.7%

Sample Description: Brown Silty Sand
Group Symbol:

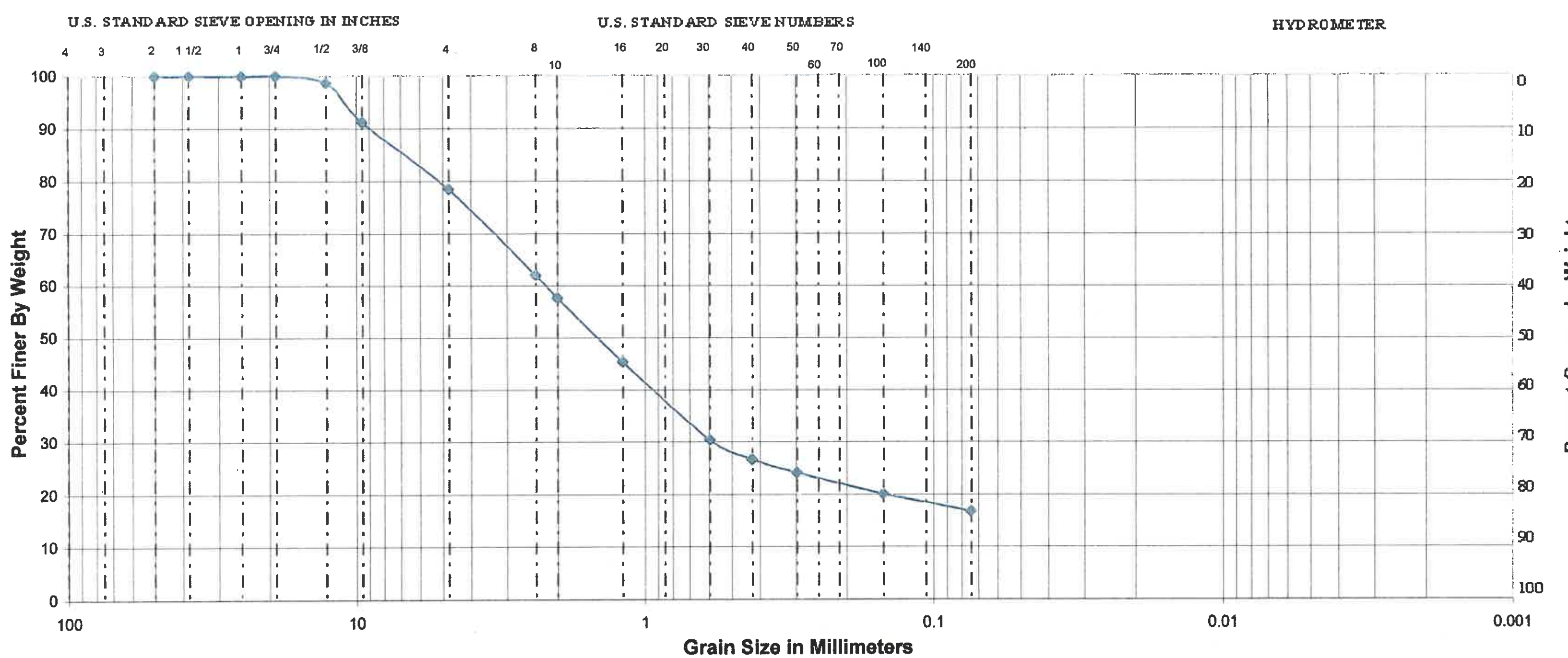
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	3-3
Date:	July 2, 2008

GRAIN SIZE DISTRIBUTION

Old Ranch Rd

Figure No. 14



Gravel Content:	**42.3%**
Sand Content:	**40.9%**
Fines Content:	**16.9%**

Sample Description: Brown Silty Sand w\ gravels
Group Symbol: 0

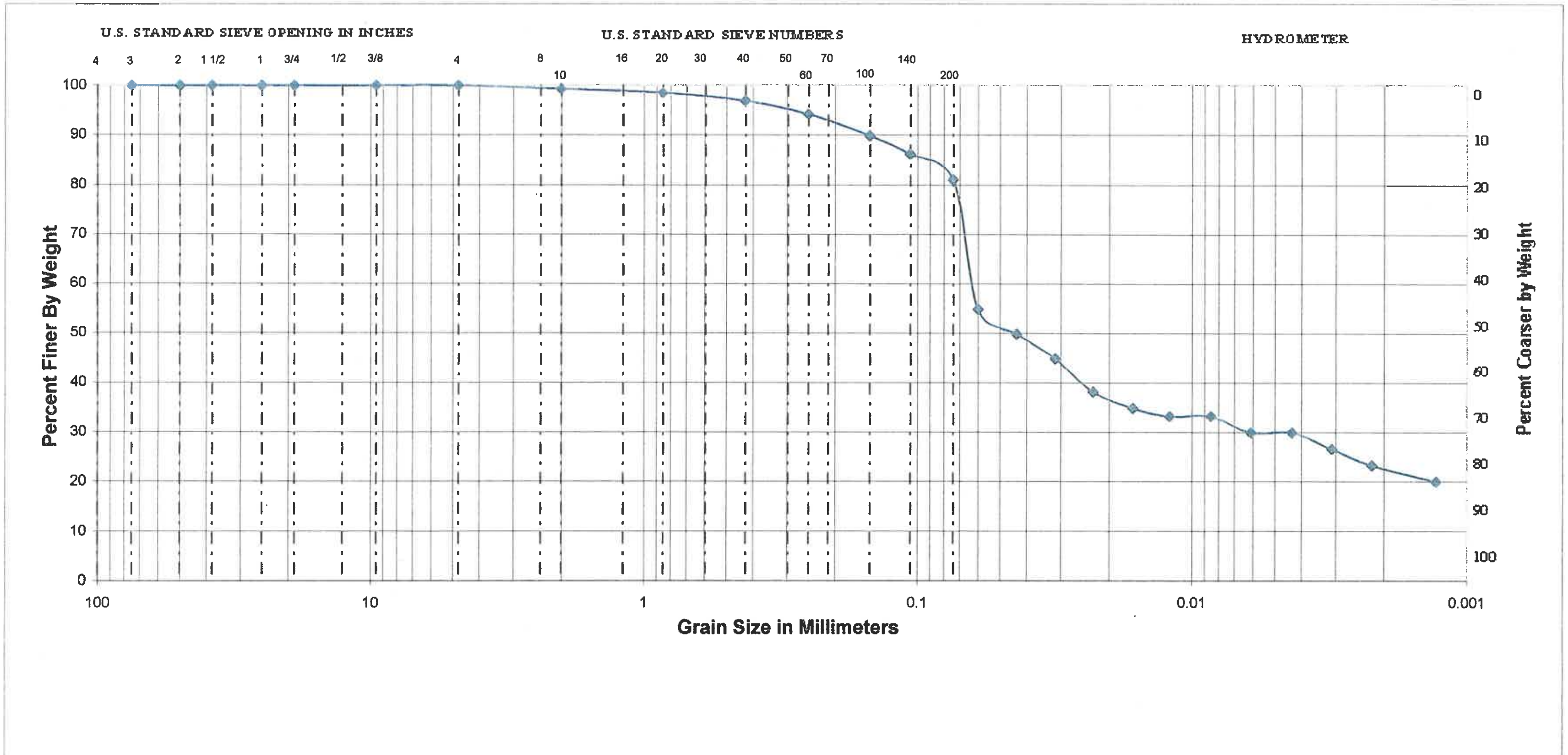
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	4-2
Date:	June 30, 2008

GRAIN SIZE DISTRIBUTION

291 Old Ranch Rd.

Figure No. 15



Gravel Content: 0.0%
Sand Content: 18.9%
Fines Content: 81.1%

Sample Description: Brown Silty Sand w/trace of clay
Group Symbol:

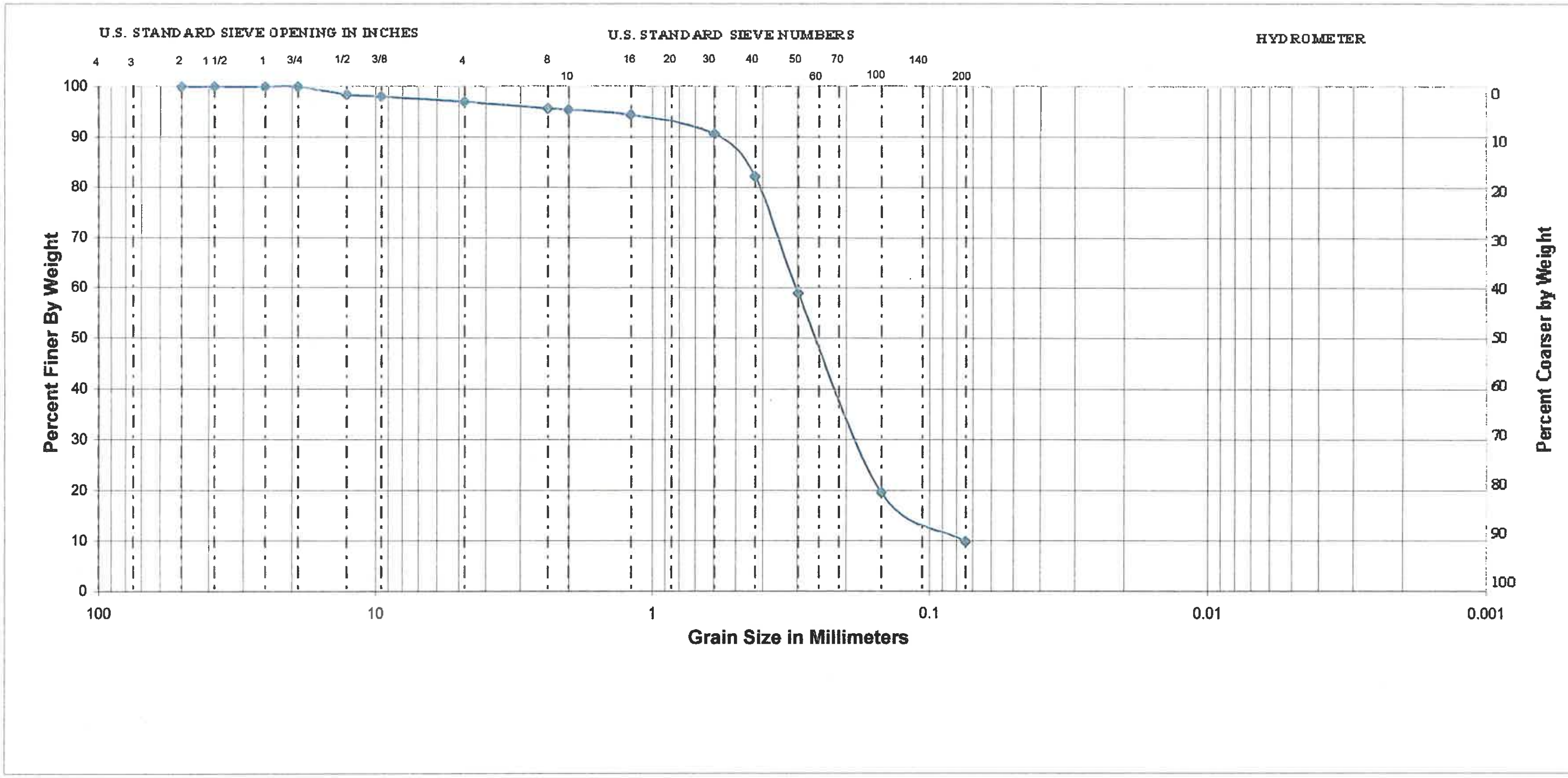
Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers
116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644
Sample No:	5-3-1
Date:	July 2, 2008

GRAIN SIZE DISTRIBUTION

Old Ranch Rd

Figure No. 16



Gravel Content:	4.5%
Sand Content:	85.5%
Fines Content:	9.9%

Sample Description: Brown Sand w\ Lt. gravels
Group Symbol: 0

Haro, Kasunich & Associates, Inc.
Coastal and Geotechnical Engineers

116 East Lake Avenue, Watsonville, California
(831) 722-4175 ~ Fax (831) 722-3202

HKA Project No:	SB 9644	**GRAIN SIZE DISTRIBUTION**
Sample No:	5-4	**291 Old Ranch Rd.**
Date:	June 30, 2008	Figure No. 7

Consolidation Test Report
Astm D2435

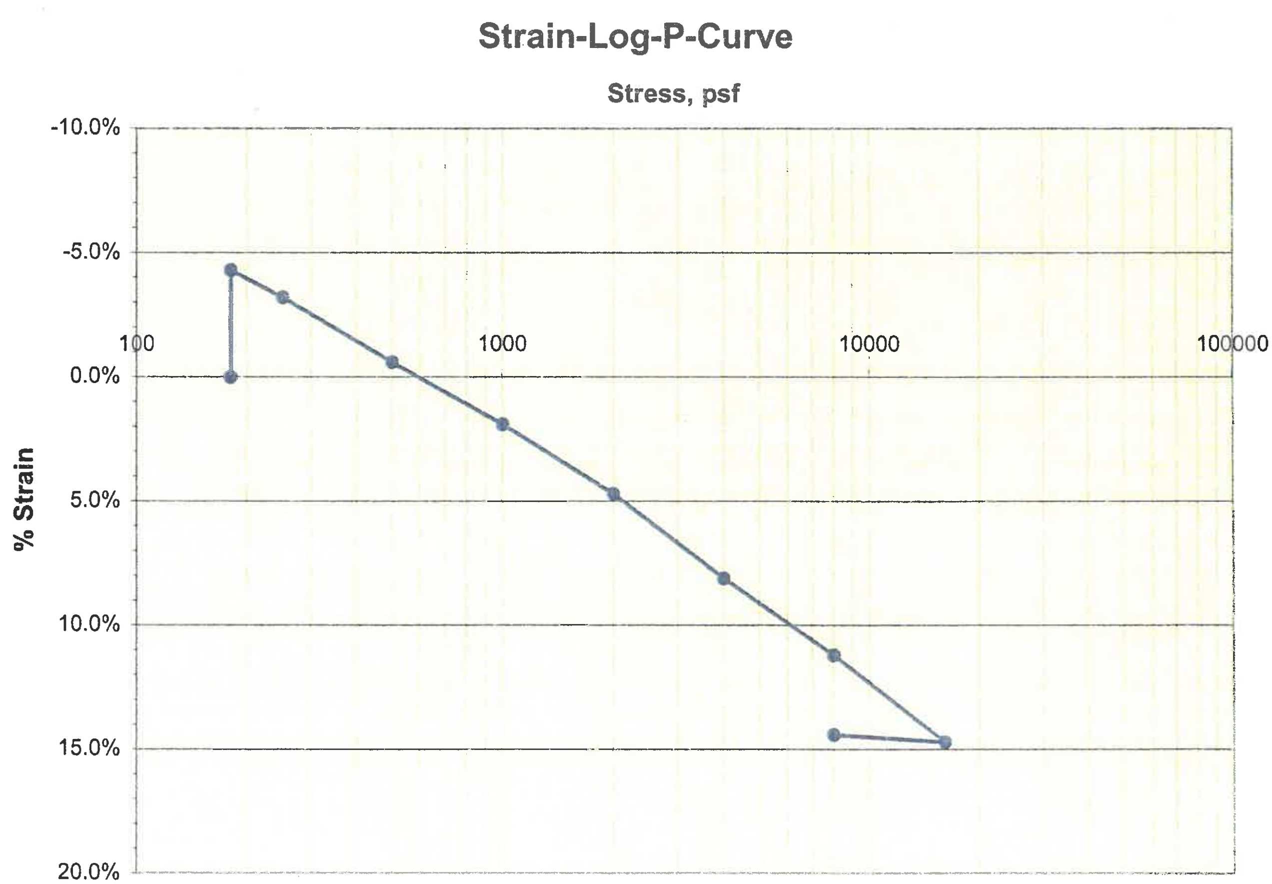
Haro, Kasunich & Associates, Inc.

Job No.:	SB9644	**Source:**	Test Boring 3	**Date:**	6/26/2008
Client:	San Benito Shutter Inc.	**Sample**	3-1-1	**Tested By:**	JR
Project:	291 Old Ranch Road	**Depth, ft:**	1.5	**Initial Sample Height, in.**	1
Soil Description:	Yellow Brown Silty Sand	**Initial Dial Reading, In**	0.700	**Final Sample Height, in.**	0.55

Stress, psf:	180	180	250	***500***	1000	2000	4000	8000	16000	8000
Final Dial Reading	0.7	0.743	0.732	0.706	0.681	0.653	0.619	0.588	0.553	0.556
Deformation, in.:	0.0000	-0.0430	-0.0320	-0.0060	0.0190	0.0470	0.0810	0.1120	0.1470	0.144
Strain,%	0.00%	-4.30%	-3.20%	-0.60%	1.90%	4.70%	8.10%	11.20%	14.70%	14.40%

Italic Font Indicates preconsolidation Stress
Bold Font Indicates Stress at Inundation

	Initial	Final			Remarks
Moisture Content %	5.7%	15.1%	**% Swell**		
Dry Density, pcf	107	194	**4.3%**		
Void Ratio	0.570	-0.132	**Stress For 0% Swell**		
Saturation %	27.0%	-308.3%	**600 psf**		
Specific Gravity -	**Assumed:**	2.7	**Measured:**	*	



Haro, Kasunich & Associates, Inc.

Consolidation Test Report
Astm D2435

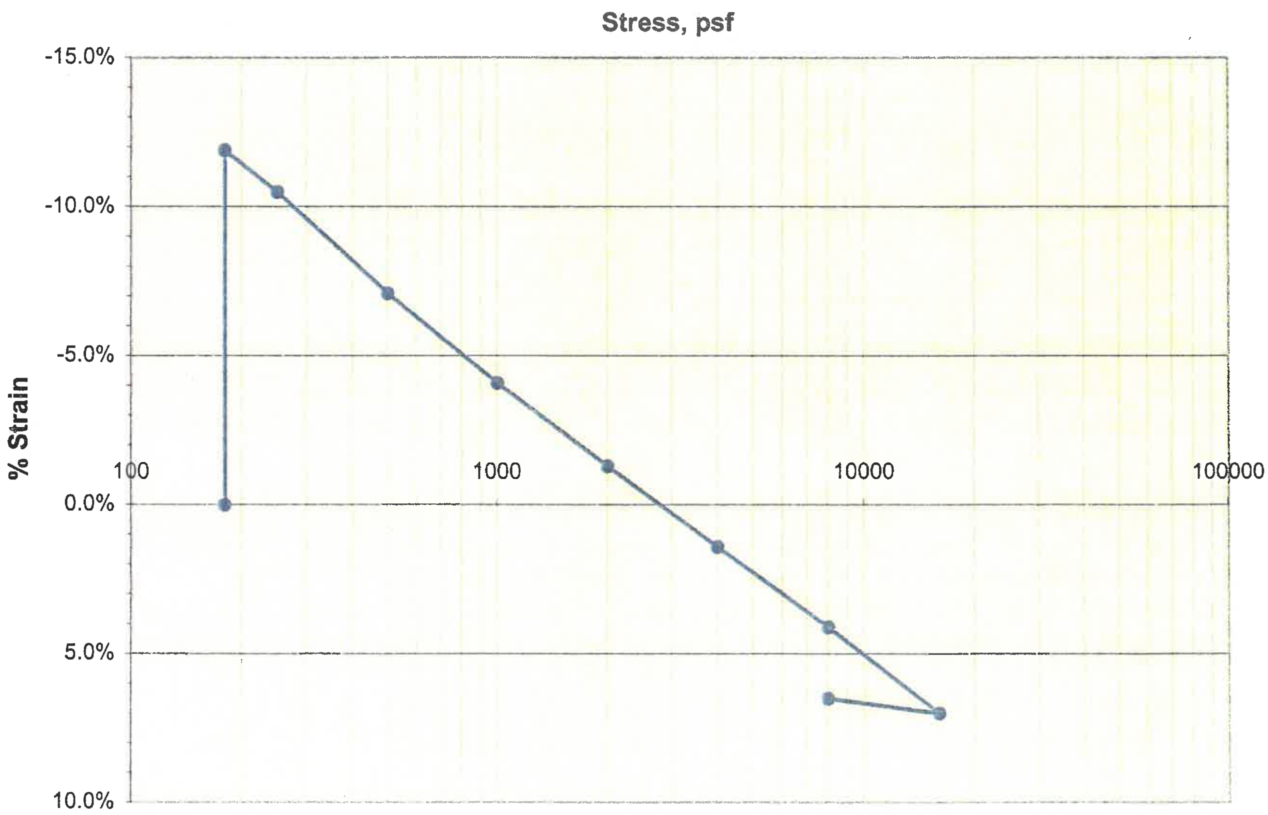
Job No.:	SB9644	Source:	Test Boring 4	Date:	6/26/2008
Client:	San Benito Shutter Inc.	Sample	4-1-1	Tested By:	JR
Project:	291 Old Ranch Road	Depth, ft:	1.5	Initial Sample Height, in.	1
Soil Description:	Dark Brown Clay	Initial Dial Reading, In	0.700	Final Sample Height, in.	0.90

Stress, psf:	180	180	250	*500*	1000	2000	4000	8000	16000	8000
Final Dial Reading	0.7	0.819	0.805	0.771	0.741	0.713	0.686	0.659	0.63	0.635
Deformation, in.:	0.0000	-0.1190	-0.1050	-0.0710	-0.0410	-0.0130	0.0140	0.0410	0.0700	0.065
Strain,%	0.00%	-11.90%	-10.50%	-7.10%	-4.10%	-1.30%	1.40%	4.10%	7.00%	6.50%

Italic Font Indicates preconsolidation Stress
Bold Font Indicates Stress at Inundation

	Initial	Final			Remarks
Moisture Content %	19.2%	24.0%	**% Swell**		
Dry Density, pcf	104	115	**11.9%**		
Void Ratio	0.627	0.464	**Stress For 0% Swell**		
Saturation %	82.6%	100.0%	**2800 psf**		
Specific Gravity - Assumed:		2.7	Measured:	*	

Strain-Log-P-Curve

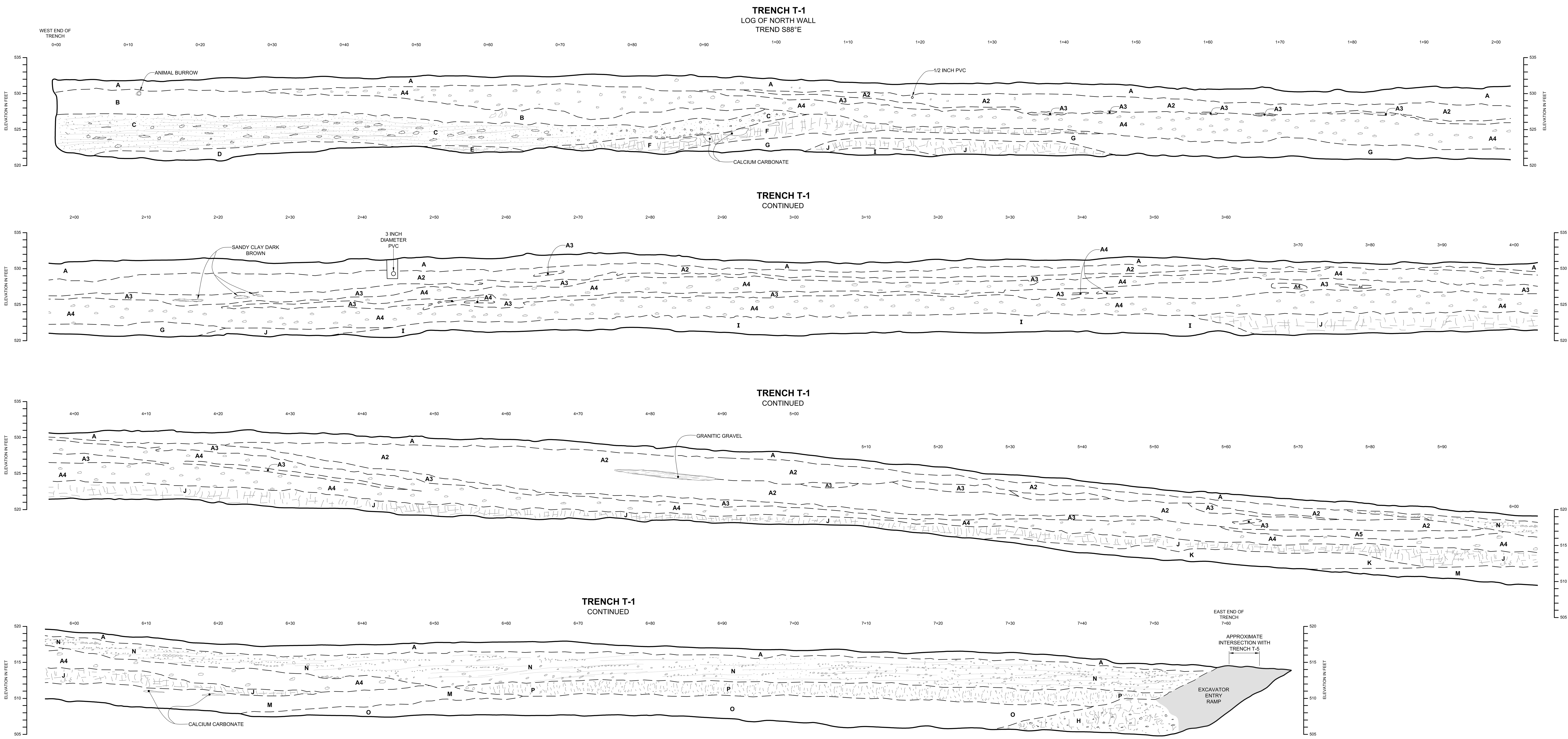


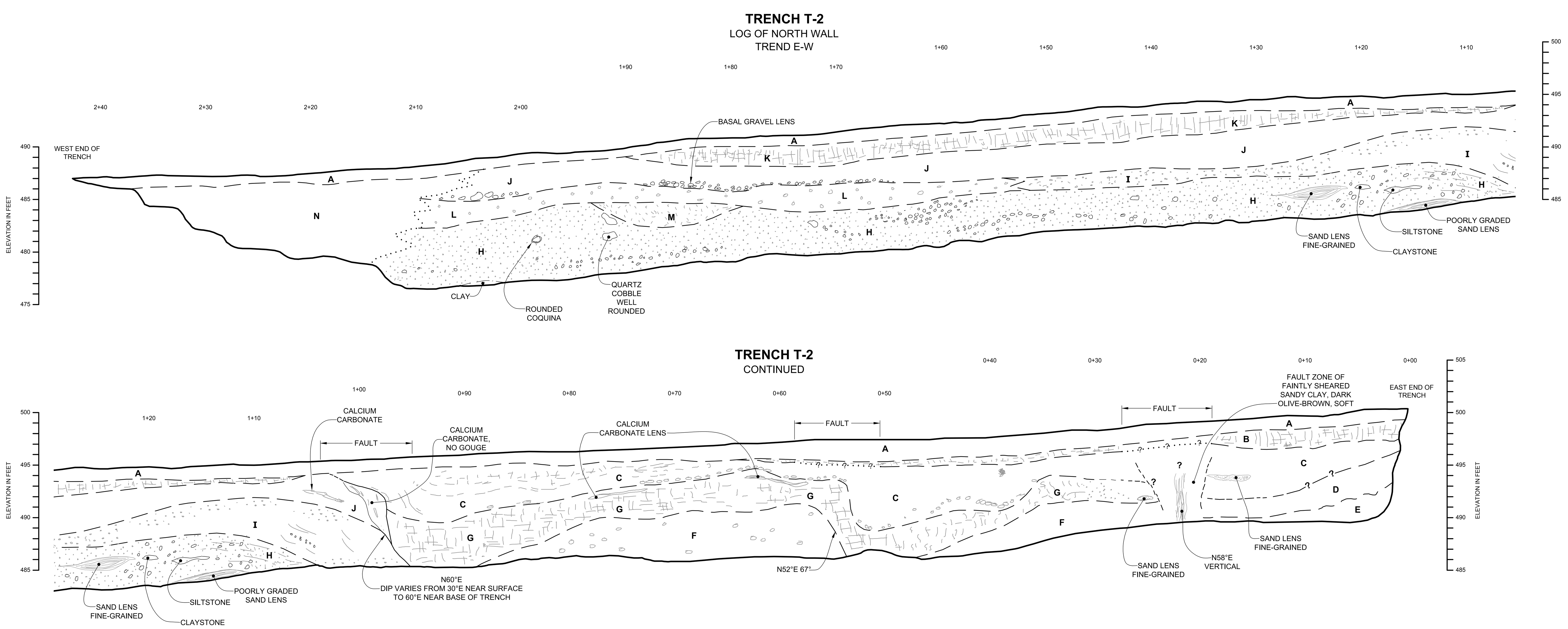
Haro Kasunich and Associates
Geotechnical and Coastal Engineers

Figure No. 19

Page No.____

7/17/2008





DRAWN BY: CC
DATE: 12-31-19
JOB NUMBER: 4055.100

EXPLANATION

GROUND SURFACE AND BOTTOM OF TRENCH

GEOLOGIC CONTACT, SOLID WHERE SHARP, DASHED WHERE GRADATIONAL

TRENCH T-1 EXPLANATION

A	SANDY CLAY, MEDIUM TO DARK GRAY-BLACK, OCCASIONAL/SCATTERED GRAVEL OF CHERT, QUARTZ AND SANDSTONE, SUBROUNDED, DISTURBED BY PLOWING
A2	SANDY CLAY, DARK BROWN TO DARK GRAY, DRY STIFF, FILL
A3	SANDY CLAY, LIGHT BROWN TO LIGHT TAN, DRY, STIFF, FILL
A4	SANDY CLAY, DARK BROWN TO DARK GRAY, DRY, STIFF TO HARD, FILL
A5	SANDY CLAY, MEDIUM TO LIGHT BROWN, STIFF TO HARD, FILL
B	SANDY CLAY, MEDIUM TO LIGHT ORANGE, DRY, STIFF TO HARD
C	COBBLY GRAVELLY SAND, FINE-TO COARSE-GRAINED SAND, MEDIUM TAN-BROWN, DRY, LOOSE, COBBLES AND GRAVEL ARE IMBRICATED NEARLY HORIZONTAL, INTERBEDDED WITH FINE GRAINED SAND LENSES
D	SANDY CLAY, DARK ORANGE-BROWN, DRY, HARD
E	CLAYEY GRAVELLY SAND, DARK ORANGE-BROWN, DRY, LOOSE
F	SANDY CLAY, DARK GRAY-BLACK, DRY, HARD, ABUNDANT TO ALMOST SATURATED WITH CALCIUM CARBONATE
G	SANDY CLAY, MEDIUM TAN, DRY, VERY STIFF TO HARD
H	GRAVELLY SANDY CLAY, DARK ORANGE-RED, DRY, HARD, ABUNDANT CALCIUM CARBONATE
I	SANDY CLAY TO CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, HARD, CALCIUM CARBONATE NODULES AND STRINGERS NEAR UPPER CONTACT
J	SANDY CLAY, LIGHT TAN, DRY, STIFF TO HARD, ABUNDANT CALCIUM CARBONATE NEAR TOP OF UNIT
K	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, STIFF TO HARD
L	SANDY CLAY, MEDIUM TO LIGHT BROWN, DRY, STIFF TO HARD
M	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, HARD
N	GRAVELLY SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, STIFF TO HARD, ABUNDANT SAND AND FINE GRAVEL LENSES, ALLUVIUM
O	SANDY CLAY, MEDIUM TO LIGHT ORANGE-TAN, DRY, STIFF TO HARD
P	SANDY CLAY, DARK RED-BROWN, DRY, STIFF TO HARD, DISTINCT PED FORMATION AT ABOUT 2-1/2 INCH SPACING

TRENCH T-2 EXPLANATION

A	SANDY SILTY CLAY, DARK RED-BROWN TO OLIVE-BROWN, DRY, VERY STIFF TO HARD, FEW ROUNDED QUARTZ FRAGMENTS, DISTURBED BY PLOWING
B	SILTY CLAY, MEDIUM RED-BROWN, DRY, VERY STIFF TO HARD, ABUNDANT CALCIUM CARBONATE ALONG VERTICAL PED STRUCTURES
C	SAND FINE-GRAINED WITH CLAY, RED-BROWN, DRY, DENSE
D	CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, DENSE, SOME WELL ROUNDED QUARTZ GRAVEL, SCATTERED CALCIUM CARBONATE NODULES AND STRINGERS WITH INTERMITTENT BASAL GRAVEL LENSES
E	SAND, FINE-GRAINED, MEDIUM TAN-BROWN, DRY, LOOSE TO DENSE
F	CLAYEY SAND, MEDIUM ORANGE-BROWN, DRY, DENSE, OCCASIONAL CALCIUM CARBONATE NODULES UP TO 1 INCH DIAMETER
G	SANDY CLAY, MEDIUM ORANGE-BROWN, DRY, HARD WITH ABUNDANT VERTICAL STRINGERS OF CALCIUM CARBONATE
H	COBBLY SAND TO SANDY GRAVEL WITH OCCASIONAL RIP-UPS OF SANDSTONE AND SILTSTONE, DARK RED WITH LIGHT GRAY AND BLACK LENSES, WELL ROUNDED GRAVEL AND COBBLES ARE FINE-GRAINED SANDSTONE, QUARTZITE AND OCCASIONAL GRANITE (HIGHLY WEATHERED), COBBLES HAVE UP TO 1/2 INCH WEATHERING RINDS
I	SAND, FINE-GRAINED, LIGHT ORANGE-BROWN, DRY, DENSE (SIMILAR TO "E" BUT MORE DENSE)
J	SAND, FINE-GRAINED WITH MINOR CLAY, LIGHT TO MEDIUM ORANGE-BROWN, DRY, DENSE
K	SANDY CLAY, MEDIUM TO DARK ORANGE-BROWN, DRY, HARD, ABUNDANT VERTICAL FRACTURING WITH SPACING APPROXIMATELY 2 INCHES, CLEAN PED FORMATION
L	CLAYEY SAND TO SANDY CLAY, WITH SCATTERED ROUNDED GRAVEL, MEDIUM ORANGE TO RED-BROWN, DRY, DENSE
M	SAND, FINE-GRAINED, MEDIUM RED-BROWN, DRY, LOOSE
N	SANDY CLAY, DARK GRAY TO BLACK, DRY, HARD (Qa ALLUVIUM)

DRAFT

TRENCH LOGS T-1 AND T-2

LEE PROPERTY

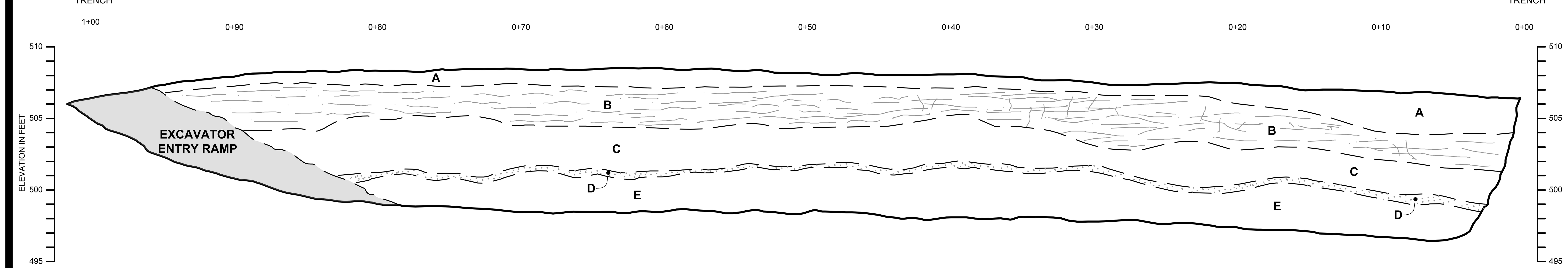
OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

Berlogar Stevens & Associates
SOIL ENGINEERS * ENGINEERING GEOLOGISTS

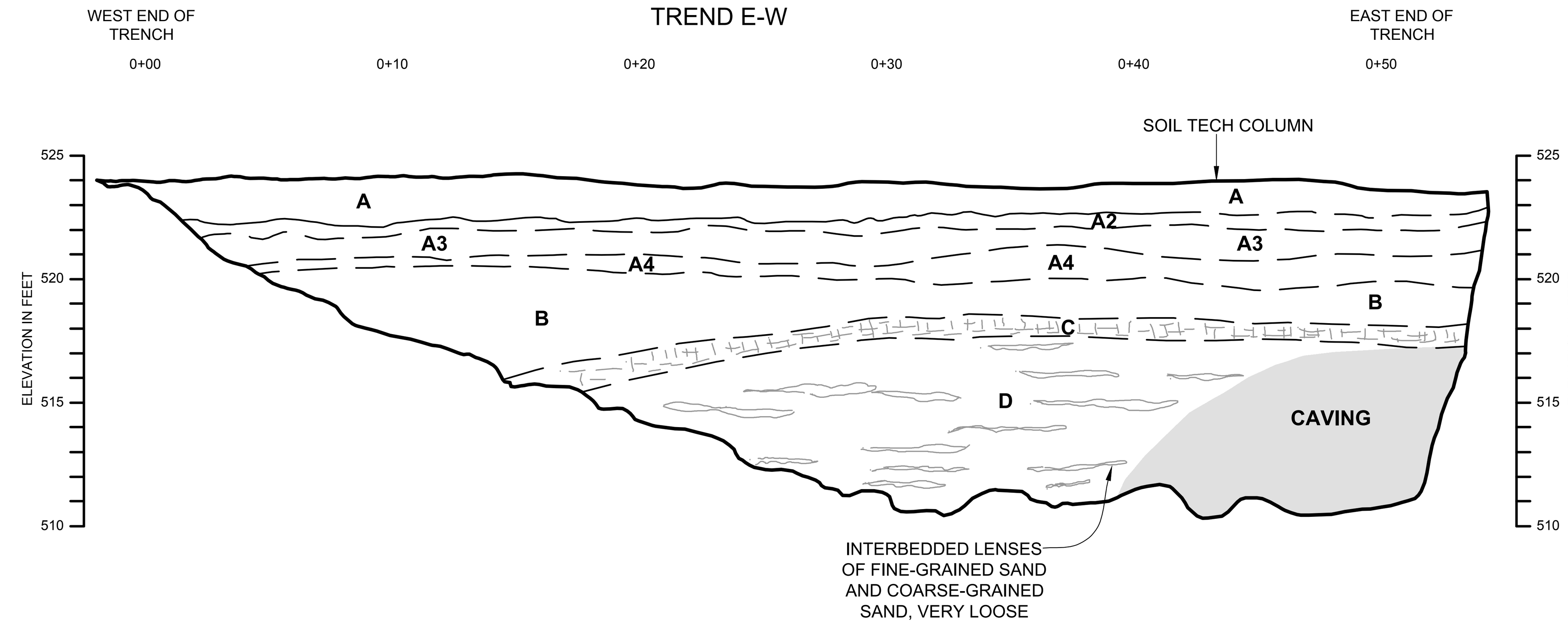
DRAWN BY: CC
DATE: 1-3-20
JOB NUMBER: 4055.100

0 5
1"=5'

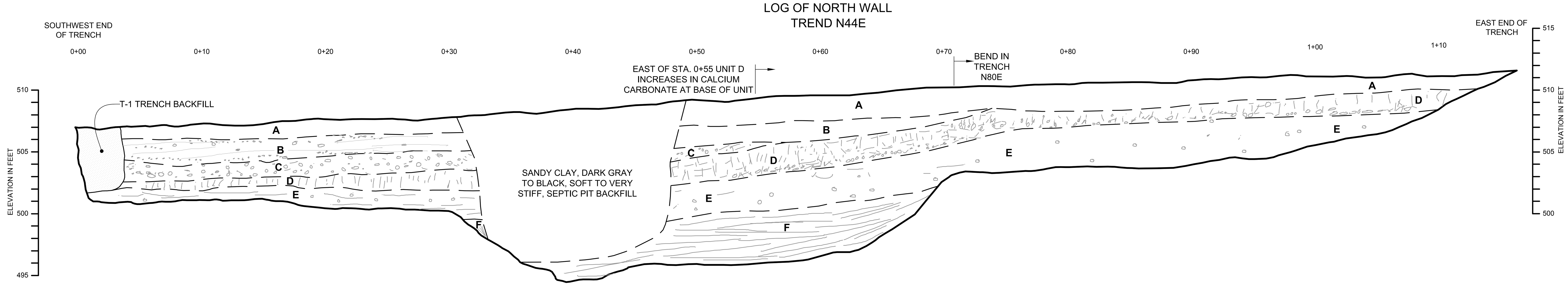
TRENCH T-3
LOG OF NORTH WALL
TREND E-W



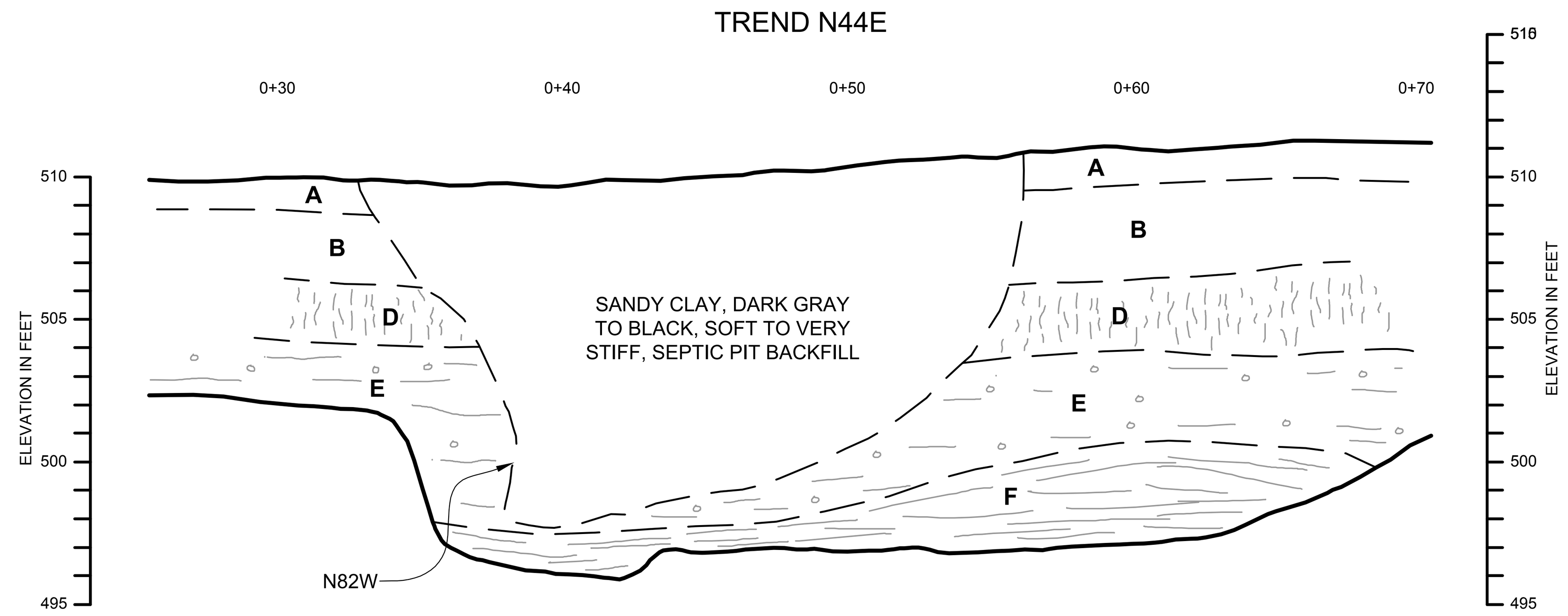
TRENCH T-4
LOG OF NORTH WALL
TREND E-W



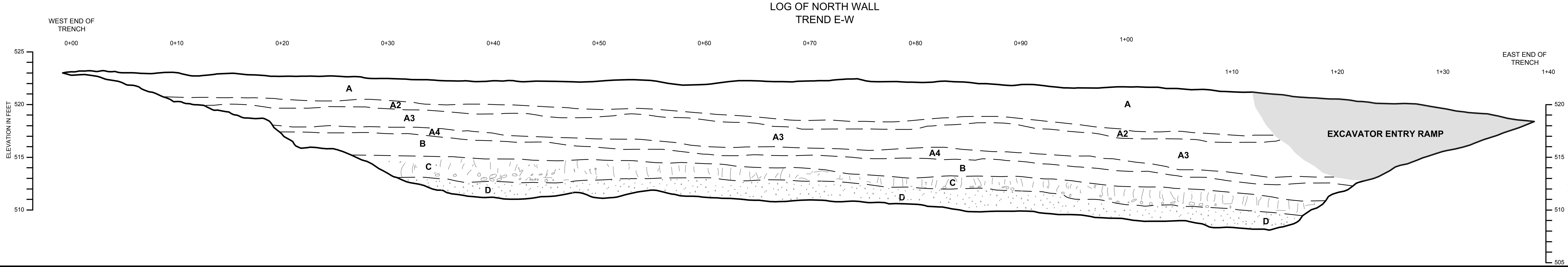
TRENCH T-5
LOG OF NORTH WALL
TREND N44E



TRENCH T-5
LOG OF SOUTH WALL
TREND N44E



TRENCH T-6
LOG OF NORTH WALL
TREND E-W



EXPLANATION

GROUND SURFACE AND BOTTOM OF TRENCH

GEOLOGIC CONTACT, SOLID WHERE SHARP, DASHED WHERE GRADATIONAL

TRENCH T-3 EXPLANATION

A	SANDY CLAY, MEDIUM TO LIGHT BROWN, DRY, LOOSE
B	SANDY CLAY, MEDIUM TO LIGHT BROWN-TAN, DRY, STIFF TO VERY STIFF, ABUNDANT HORIZONTAL CALCIUM CARBONATE VEINS
C	SANDY CLAY, MEDIUM TO LIGHT TAN-BROWN, DRY, STIFF
D	SAND, FINE-GRAINED, MEDIUM TAN, DRY, LOOSE TO VERY LOOSE
E	SANDY CLAY, MEDIUM TO LIGHT TAN-BROWN, DRY, STIFF

TRENCH T-4 EXPLANATION

A	SANDY CLAY, DARK GRAY/BLACK, WET, SOFT
A2	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT, FILL
A3	SANDY CLAY, OLIVE-BROWN, MOIST, SOFT TO STIFF, FILL
A4	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT, FILL
B	SANDY CLAY, MEDIUM BROWN, MOIST, SOFT TO STIFF, SCATTERD CALCIUM CARBONATE NODULES UP TO 1 INCH DIAMETER, SOIL PEDS ABOUT 1 TO 2 INCHES APART
C	CLAYEY SAND, MEDIUM TO LIGHT TAN, DRY, ABUNDANT CALCIUM CARBONATE NODULES AND STRINGERS
D	SAND, MEDIUM TO LIGHT BROWN, DRY, LOOSE, FINE-GRAINED SAND, POORLY GRADED

TRENCH T-5 EXPLANATION

A	SANDY CLAY TO CLAYEY SAND MINOR GRAVEL, DARK GRAY TO BLACK
B	MIXED SANDY CLAY, LIGHT TAN AND DARK BROWN, STIFF TO HARD, ALLUVIUM(?)
C	GRAVELLY SANDY CLAY TO GRAVELLY CLAYEY SAND, STIFF TO HARD, SAND IS LOOSE
D	SANDY CLAY, DARK OLIVE-BROWN, DRY, HARD, WELL DEVELOPED SOIL PEDS
E	SANDY CLAY, DARK TO LIGHT ORANGE-BROWN, STIFF TO VERY STIFF
F	GRAVELLY SAND, MEDIUM TO DARK RED-BROWN, DRY, LOOSE TO VERY LOOSE

TRENCH T-6 EXPLANATION

A	SANDY CLAY, DARK GRAY TO BLACK WITH LENSES, SLIGHT GRAVELLY SANDY CLAY, LIGHT TAN, MOIST, STIFF TO HARD
A2	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT, FILL
A3	SANDY CLAY, OLIVE-BROWN, MOIST, SOFT TO STIFF, FILL
A4	SANDY CLAY, MEDIUM TO LIGHT TAN, MOIST, SOFT, FILL
B	SANDY CLAY WITH MINOR SMALL GRAVEL, MEDIUM TO DARK RED-BROWN, DRY , STIFF TO HARD
C	SANDY CLAY, MEDIUM TO LIGHT ORANGE-BROWN, DRY, HARD, SCATTERED CALCIUM CARBONATE NODULES WITH BASAL GRAVEL LAYER, WELL DEVELOPED SOIL PEDS
D	GRAVELLY SAND, LIGHT TAN TO LIGHT BROWN, DRY, LOOSE TO VERY LOOSE

DRAFT

TRENCH LOGS T-3 THROUGH T-6

LEE PROPERTY

OLD RANCH ROAD
HOLLISTER, CALIFORNIA
FOR
BILL LEE

Berlogar Stevens & Associates
SOIL ENGINEERS * ENGINEERING GEOLOGISTS

APPENDIX D

ASFE Guidelines

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE THE GEOPROFESSIONAL BUSINESS ASSOCIATION

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

IIGER01115.0MRP

Appendix F

CalEEMod Output Files

Lee Subdivision Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lee Subdivision
Construction Start Date	1/2/2025
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	15.6
Location	36.8234044489398, -121.35828412046251
County	San Benito
City	Unincorporated
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3103
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

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

Parking Lot	8.07	Acre	8.07	0.00	0.00	—	—	—
City Park	1.90	Acre	1.90	0.00	0.00	0.00	—	—
Apartments Low Rise	30.0	Dwelling Unit	1.88	3,000	0.00	—	98.0	—
Single Family Housing	141	Dwelling Unit	14.4	558,200	0.00	—	460	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Water	W-7	Adopt a Water Conservation Strategy

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.	11.0	29.7	89.5	82.0	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,695	20,695	0.65	0.92	12.2	20,999
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.0	29.7	89.9	81.9	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,672	20,672	0.64	0.92	0.32	20,963
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	3.49	11.1	28.1	27.2	0.05	1.16	9.84	11.0	1.07	4.66	5.73	—	6,217	6,217	0.20	0.23	1.37	6,293
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	2.02	5.13	4.97	0.01	0.21	1.80	2.01	0.20	0.85	1.05	—	1,029	1,029	0.03	0.04	0.23	1,042

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	11.0	9.24	89.5	82.0	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,695	20,695	0.65	0.92	12.2	20,999
2026	1.63	1.39	10.6	16.3	0.03	0.39	0.67	1.06	0.35	0.16	0.52	—	3,411	3,411	0.11	0.11	3.19	3,450
2027	1.74	29.7	11.0	17.7	0.03	0.36	0.78	1.15	0.33	0.19	0.52	—	3,635	3,635	0.12	0.11	3.26	3,674
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.22	89.9	81.9	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,672	20,672	0.64	0.92	0.32	20,963
2026	1.62	1.38	10.7	16.1	0.03	0.39	0.67	1.06	0.35	0.16	0.52	—	3,374	3,374	0.12	0.11	0.08	3,410
2027	1.73	29.7	11.1	17.5	0.03	0.36	0.78	1.15	0.33	0.19	0.52	—	3,591	3,591	0.12	0.11	0.08	3,628
2028	1.66	29.6	10.5	17.2	0.03	0.32	0.78	1.11	0.30	0.19	0.49	—	3,569	3,569	0.12	0.11	0.08	3,605
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.49	3.00	28.1	27.2	0.05	1.16	9.84	11.0	1.07	4.66	5.73	—	6,217	6,217	0.20	0.23	1.37	6,293
2026	1.15	0.98	7.59	11.3	0.02	0.27	0.47	0.75	0.25	0.11	0.37	—	2,406	2,406	0.08	0.08	0.98	2,432
2027	1.16	11.1	7.56	11.8	0.02	0.25	0.52	0.77	0.23	0.12	0.36	—	2,483	2,483	0.08	0.08	0.95	2,509
2028	0.01	0.23	0.08	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.0	28.0	< 0.005	< 0.005	0.01	28.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.64	0.55	5.13	4.97	0.01	0.21	1.80	2.01	0.20	0.85	1.05	—	1,029	1,029	0.03	0.04	0.23	1,042

2026	0.21	0.18	1.39	2.07	< 0.005	0.05	0.09	0.14	0.05	0.02	0.07	—	398	398	0.01	0.01	0.16	403
2027	0.21	2.02	1.38	2.15	< 0.005	0.05	0.09	0.14	0.04	0.02	0.07	—	411	411	0.01	0.01	0.16	415
2028	< 0.005	0.04	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.63	4.63	< 0.005	< 0.005	< 0.005	4.68

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	11.0	9.24	89.5	82.0	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,695	20,695	0.65	0.92	12.2	20,999
2026	1.63	1.39	10.6	16.3	0.03	0.39	0.67	1.06	0.35	0.16	0.52	—	3,411	3,411	0.11	0.11	3.19	3,450
2027	1.74	29.7	11.0	17.7	0.03	0.36	0.78	1.15	0.33	0.19	0.52	—	3,635	3,635	0.12	0.11	3.26	3,674
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.22	89.9	81.9	0.18	3.61	30.8	34.4	3.33	14.2	17.6	—	20,672	20,672	0.64	0.92	0.32	20,963
2026	1.62	1.38	10.7	16.1	0.03	0.39	0.67	1.06	0.35	0.16	0.52	—	3,374	3,374	0.12	0.11	0.08	3,410
2027	1.73	29.7	11.1	17.5	0.03	0.36	0.78	1.15	0.33	0.19	0.52	—	3,591	3,591	0.12	0.11	0.08	3,628
2028	1.66	29.6	10.5	17.2	0.03	0.32	0.78	1.11	0.30	0.19	0.49	—	3,569	3,569	0.12	0.11	0.08	3,605
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.49	3.00	28.1	27.2	0.05	1.16	9.84	11.0	1.07	4.66	5.73	—	6,217	6,217	0.20	0.23	1.37	6,293
2026	1.15	0.98	7.59	11.3	0.02	0.27	0.47	0.75	0.25	0.11	0.37	—	2,406	2,406	0.08	0.08	0.98	2,432
2027	1.16	11.1	7.56	11.8	0.02	0.25	0.52	0.77	0.23	0.12	0.36	—	2,483	2,483	0.08	0.08	0.95	2,509
2028	0.01	0.23	0.08	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.0	28.0	< 0.005	< 0.005	0.01	28.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.64	0.55	5.13	4.97	0.01	0.21	1.80	2.01	0.20	0.85	1.05	—	1,029	1,029	0.03	0.04	0.23	1,042
2026	0.21	0.18	1.39	2.07	< 0.005	0.05	0.09	0.14	0.05	0.02	0.07	—	398	398	0.01	0.01	0.16	403

2027	0.21	2.02	1.38	2.15	< 0.005	0.05	0.09	0.14	0.04	0.02	0.07	—	411	411	0.01	0.01	0.16	415
2028	< 0.005	0.04	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.63	4.63	< 0.005	< 0.005	< 0.005	4.68

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.	6.43	19.4	3.64	20.2	0.01	0.14	0.00	0.14	0.14	0.00	0.14	95.8	3,178	3,274	8.98	0.17	4.02	3,553
Mit.	6.43	19.4	3.64	20.2	0.01	0.14	0.00	0.14	0.14	0.00	0.14	92.8	2,643	2,736	8.82	0.15	4.02	3,006
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	17%	16%	2%	10%	—	15%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.27	18.3	3.84	15.5	0.01	0.14	0.00	0.14	0.14	0.00	0.14	95.8	3,165	3,261	9.06	0.19	4.02	3,548
Mit.	5.27	18.3	3.84	15.5	0.01	0.14	0.00	0.14	0.14	0.00	0.14	92.8	2,630	2,723	8.90	0.17	4.02	3,000
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	17%	16%	2%	9%	—	15%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.27	20.0	8.03	44.5	0.10	0.23	7.54	7.77	0.22	1.92	2.15	95.8	11,761	11,857	9.20	0.63	15.8	12,290
Mit.	7.27	20.0	8.03	44.5	0.10	0.23	7.54	7.77	0.22	1.92	2.15	92.8	11,226	11,319	9.04	0.61	15.8	11,743
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	5%	5%	2%	3%	—	4%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.33	3.65	1.47	8.12	0.02	0.04	1.38	1.42	0.04	0.35	0.39	15.9	1,947	1,963	1.52	0.10	2.61	2,035
Mit.	1.33	3.65	1.47	8.12	0.02	0.04	1.38	1.42	0.04	0.35	0.39	15.4	1,859	1,874	1.50	0.10	2.61	1,944

% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	5%	5%	2%	3%	—	4%

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	5.34	5.24	1.93	9.75	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	368	368	0.21	0.12	0.00	409
Area	0.89	14.1	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	25.9	25.9	< 0.005	< 0.005	—	26.0
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,763	2,763	0.30	0.02	—	2,776
Water	—	—	—	—	—	—	—	—	—	—	—	15.0	21.2	36.2	0.39	0.03	—	56.0
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	6.43	19.4	3.64	20.2	0.01	0.14	0.00	0.14	0.14	0.00	0.14	95.8	3,178	3,274	8.98	0.17	4.02	3,553
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.08	4.93	2.22	14.8	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	381	381	0.29	0.14	0.00	429
Area	0.00	13.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,763	2,763	0.30	0.02	—	2,776
Water	—	—	—	—	—	—	—	—	—	—	—	15.0	21.2	36.2	0.39	0.03	—	56.0
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	5.27	18.3	3.84	15.5	0.01	0.14	0.00	0.14	0.14	0.00	0.14	95.8	3,165	3,261	9.06	0.19	4.02	3,548
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.47	6.07	6.35	37.2	0.09	0.09	7.54	7.64	0.09	1.92	2.01	—	8,958	8,958	0.44	0.58	11.7	9,153

Area	0.61	13.8	0.06	6.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.8	17.8	< 0.005	< 0.005	—	17.8
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,763	2,763	0.30	0.02	—	2,776
Water	—	—	—	—	—	—	—	—	—	—	—	15.0	21.2	36.2	0.39	0.03	—	56.0
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	7.27	20.0	8.03	44.5	0.10	0.23	7.54	7.77	0.22	1.92	2.15	95.8	11,761	11,857	9.20	0.63	15.8	12,290
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.18	1.11	1.16	6.78	0.02	0.02	1.38	1.39	0.02	0.35	0.37	—	1,483	1,483	0.07	0.10	1.94	1,515
Area	0.11	2.52	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.94	2.94	< 0.005	< 0.005	—	2.95
Energy	0.03	0.02	0.30	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	458	458	0.05	< 0.005	—	460
Water	—	—	—	—	—	—	—	—	—	—	—	2.48	3.51	6.00	0.07	0.01	—	9.27
Waste	—	—	—	—	—	—	—	—	—	—	—	13.4	0.00	13.4	1.34	0.00	—	46.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.67	0.67
Total	1.33	3.65	1.47	8.12	0.02	0.04	1.38	1.42	0.04	0.35	0.39	15.9	1,947	1,963	1.52	0.10	2.61	2,035

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	5.34	5.24	1.93	9.75	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	368	368	0.21	0.12	0.00	409
Area	0.89	14.1	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	25.9	25.9	< 0.005	< 0.005	—	26.0
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,233	2,233	0.21	0.01	—	2,240
Water	—	—	—	—	—	—	—	—	—	—	—	12.0	17.0	29.0	0.32	0.03	—	44.8
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	6.43	19.4	3.64	20.2	0.01	0.14	0.00	0.14	0.14	0.00	0.14	92.8	2,643	2,736	8.82	0.15	4.02	3,006

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.08	4.93	2.22	14.8	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	381	381	0.29	0.14	0.00	429
Area	0.00	13.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,233	2,233	0.21	0.01	—	2,240
Water	—	—	—	—	—	—	—	—	—	—	—	12.0	17.0	29.0	0.32	0.03	—	44.8
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	5.27	18.3	3.84	15.5	0.01	0.14	0.00	0.14	0.14	0.00	0.14	92.8	2,630	2,723	8.90	0.17	4.02	3,000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.47	6.07	6.35	37.2	0.09	0.09	7.54	7.64	0.09	1.92	2.01	—	8,958	8,958	0.44	0.58	11.7	9,153
Area	0.61	13.8	0.06	6.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.8	17.8	< 0.005	< 0.005	—	17.8
Energy	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,233	2,233	0.21	0.01	—	2,240
Water	—	—	—	—	—	—	—	—	—	—	—	12.0	17.0	29.0	0.32	0.03	—	44.8
Waste	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Total	7.27	20.0	8.03	44.5	0.10	0.23	7.54	7.77	0.22	1.92	2.15	92.8	11,226	11,319	9.04	0.61	15.8	11,743
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.18	1.11	1.16	6.78	0.02	0.02	1.38	1.39	0.02	0.35	0.37	—	1,483	1,483	0.07	0.10	1.94	1,515
Area	0.11	2.52	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.94	2.94	< 0.005	< 0.005	—	2.95
Energy	0.03	0.02	0.30	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	370	370	0.03	< 0.005	—	371
Water	—	—	—	—	—	—	—	—	—	—	—	1.99	2.81	4.80	0.05	< 0.005	—	7.42
Waste	—	—	—	—	—	—	—	—	—	—	—	13.4	0.00	13.4	1.34	0.00	—	46.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.67	0.67
Total	1.33	3.65	1.47	8.12	0.02	0.04	1.38	1.42	0.04	0.35	0.39	15.4	1,859	1,874	1.50	0.10	2.61	1,944

3. Construction Emissions Details

3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.04	0.70	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	120	120	0.01	< 0.005	0.46	122
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.0	90.0	< 0.005	0.01	0.19	94.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.01	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.1	90.1	< 0.005	0.01	< 0.005	94.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.05	27.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.7	21.7	< 0.005	< 0.005	0.02	22.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.51	4.51	< 0.005	< 0.005	0.01	4.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.60	3.60	< 0.005	< 0.005	< 0.005	3.77

3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.04	0.70	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	120	120	0.01	< 0.005	0.46	122
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.0	90.0	< 0.005	0.01	0.19	94.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.01	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.1	90.1	< 0.005	0.01	< 0.005	94.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.05	27.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.7	21.7	< 0.005	< 0.005	0.02	22.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.51	4.51	< 0.005	< 0.005	0.01	4.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.60	3.60	< 0.005	< 0.005	< 0.005	3.77

3.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.82	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	140	140	0.01	0.01	0.54	143
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.76	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	131	131	0.01	0.01	0.01	133
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.7	47.7	< 0.005	< 0.005	0.08	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.90	7.90	< 0.005	< 0.005	0.01	8.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.4. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.82	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	140	140	0.01	0.01	0.54	143
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.76	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	131	131	0.01	0.01	0.01	133
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.7	47.7	< 0.005	< 0.005	0.08	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.90	7.90	< 0.005	< 0.005	0.01	8.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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

3.5. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.77	7.16	6.83	0.01	0.30	—	0.30	0.27	—	0.27	—	1,591	1,591	0.06	0.01	—	1,596

Dust From Material Movement	—	—	—	—	—	—	2.23	2.23	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.31	1.25	< 0.005	0.05	—	0.05	0.05	—	0.05	—	263	263	0.01	< 0.005	—	264
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	0.93	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	160	160	0.01	0.01	0.62	163
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.09	5.72	1.13	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,865	4,865	< 0.005	0.77	10.4	5,104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	0.87	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	150	150	0.01	0.01	0.02	152
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.05	1.16	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,869	4,869	< 0.005	0.77	0.27	5,098
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.4	36.4	< 0.005	< 0.005	0.06	36.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.43	0.28	0.01	0.02	0.31	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.19	1.08	1,230

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.18	204

3.6. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.92	0.77	7.16	6.83	0.01	0.30	—	0.30	0.27	—	0.27	—	1,591	1,591	0.06	0.01	—	1,596
Dust From Material Movement	—	—	—	—	—	—	2.23	2.23	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.31	1.25	< 0.005	0.05	—	0.05	0.05	—	0.05	—	263	263	0.01	< 0.005	—	264
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	0.93	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	160	160	0.01	0.01	0.62	163
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.09	5.72	1.13	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,865	4,865	< 0.005	0.77	10.4	5,104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	0.87	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	150	150	0.01	0.01	0.02	152
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.05	1.16	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,869	4,869	< 0.005	0.77	0.27	5,098
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.4	36.4	< 0.005	< 0.005	0.06	36.9

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.43	0.28	0.01	0.02	0.31	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.19	1.08	1,230
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.18	204

3.7. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.30	0.19	3.08	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	568	568	0.01	0.02	2.02	577
Vendor	0.02	0.02	0.57	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	446	446	< 0.005	0.07	1.17	467
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.29	0.24	2.90	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	531	531	0.02	0.02	0.05	538
Vendor	0.02	0.02	0.60	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	446	446	< 0.005	0.07	0.03	467
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.15	1.95	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	380	380	0.01	0.02	0.62	386
Vendor	0.02	0.01	0.42	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	318	318	< 0.005	0.05	0.36	332
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	0.04	0.04	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.0	63.0	< 0.005	< 0.005	0.10	64.0
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.6	52.6	< 0.005	0.01	0.06	55.0
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

3.8. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.30	0.19	3.08	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	568	568	0.01	0.02	2.02	577
Vendor	0.02	0.02	0.57	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	446	446	< 0.005	0.07	1.17	467

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.29	0.24	2.90	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	531	531	0.02	0.02	0.05	538
Vendor	0.02	0.02	0.60	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	446	446	< 0.005	0.07	0.03	467
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.15	1.95	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	380	380	0.01	0.02	0.62	386
Vendor	0.02	0.01	0.42	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	318	318	< 0.005	0.05	0.36	332
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	0.04	0.04	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.0	63.0	< 0.005	< 0.005	0.10	64.0
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.6	52.6	< 0.005	0.01	0.06	55.0
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

3.9. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.28	0.17	2.85	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	556	556	0.01	0.02	1.82	565
Vendor	0.02	0.02	0.55	0.20	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	436	436	< 0.005	0.06	1.08	457
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.27	0.22	2.67	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	520	520	0.02	0.02	0.05	527
Vendor	0.02	0.02	0.58	0.21	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	437	437	< 0.005	0.06	0.03	456
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.20	0.19	0.14	1.80	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	374	374	0.01	0.02	0.56	380
Vendor	0.02	0.01	0.40	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.05	0.33	326
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	0.04	0.04	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.9	61.9	< 0.005	< 0.005	0.09	62.8
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.6	51.6	< 0.005	0.01	0.05	53.9
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

3.10. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.28	0.17	2.85	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	556	556	0.01	0.02	1.82	565
Vendor	0.02	0.02	0.55	0.20	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	436	436	< 0.005	0.06	1.08	457
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.27	0.22	2.67	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	520	520	0.02	0.02	0.05	527
Vendor	0.02	0.02	0.58	0.21	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	437	437	< 0.005	0.06	0.03	456
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.14	1.80	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	374	374	0.01	0.02	0.56	380
Vendor	0.02	0.01	0.40	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.05	0.33	326
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	0.04	0.04	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.9	61.9	< 0.005	< 0.005	0.09	62.8
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.6	51.6	< 0.005	0.01	0.05	53.9
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

3.11. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.27	0.25	0.20	2.46	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	510	510	0.02	0.02	0.04	517
Vendor	0.02	0.02	0.55	0.20	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	426	426	< 0.005	0.06	0.03	445
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.01	4.01	< 0.005	< 0.005	0.01	4.08
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.33	3.33	< 0.005	< 0.005	< 0.005	3.49
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	—	0.66	0.66	< 0.005	< 0.005	< 0.005	0.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.58
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

3.12. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.25	0.20	2.46	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	510	510	0.02	0.02	0.04	517
Vendor	0.02	0.02	0.55	0.20	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	426	426	< 0.005	0.06	0.03	445
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.01	4.01	< 0.005	< 0.005	0.01	4.08
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.33	3.33	< 0.005	< 0.005	< 0.005	3.49
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	—	0.66	0.66	< 0.005	< 0.005	< 0.005	0.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.58
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

3.13. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.04	0.70	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	120	120	0.01	< 0.005	0.46	122
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.01	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.3	40.3	< 0.005	< 0.005	0.07	40.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.67	6.67	< 0.005	< 0.005	0.01	6.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.14. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.04	0.70	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	120	120	0.01	< 0.005	0.46	122
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.01	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.3	40.3	< 0.005	< 0.005	0.07	40.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.67	6.67	< 0.005	< 0.005	0.01	6.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.15. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	10.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.03	0.57	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	111	111	< 0.005	< 0.005	0.36	113

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.01	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.5	37.5	< 0.005	< 0.005	0.06	38.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.20	6.20	< 0.005	< 0.005	0.01	6.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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 (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	10.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.03	0.57	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	111	111	< 0.005	< 0.005	0.36	113

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.01	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.5	37.5	< 0.005	< 0.005	0.06	38.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.20	6.20	< 0.005	< 0.005	0.01	6.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.17. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architect ural Coatings	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architect ural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.49	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.18. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architect ural Coatings	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.49	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	52.9	52.9	0.01	< 0.005	—	53.4
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	—	483
Total	—	—	—	—	—	—	—	—	—	—	—	—	703	703	0.11	0.01	—	710
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	52.9	52.9	0.01	< 0.005	—	53.4
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	—	483
Total	—	—	—	—	—	—	—	—	—	—	—	—	703	703	0.11	0.01	—	710
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	8.76	8.76	< 0.005	< 0.005	—	8.84
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	—	79.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	116	116	0.02	< 0.005	—	118

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Apartme Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.20	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	258	258	0.02	< 0.005	—	258
Single Family Housing	0.17	0.08	1.42	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,803	1,803	0.16	< 0.005	—	1,808
Total	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,061	2,061	0.18	< 0.005	—	2,066
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.20	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	258	258	0.02	< 0.005	—	258
Single Family Housing	0.17	0.08	1.42	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,803	1,803	0.16	< 0.005	—	1,808
Total	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,061	2,061	0.18	< 0.005	—	2,066
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Apartments Low Rise	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.6	42.6	< 0.005	< 0.005	—	42.8
Single Family Housing	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	299	299	0.03	< 0.005	—	299
Total	0.03	0.02	0.30	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	341	341	0.03	< 0.005	—	342

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.20	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	258	258	0.02	< 0.005	—	258
Single Family Housing	0.17	0.08	1.42	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,803	1,803	0.16	< 0.005	—	1,808
Total	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,061	2,061	0.18	< 0.005	—	2,066
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.20	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	258	258	0.02	< 0.005	—	258

Single Family Housing	0.17	0.08	1.42	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,803	1,803	0.16	< 0.005	—	1,808
Total	0.19	0.09	1.62	0.69	0.01	0.13	—	0.13	0.13	—	0.13	—	2,061	2,061	0.18	< 0.005	—	2,066
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.6	42.6	< 0.005	< 0.005	—	42.8
Single Family Housing	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	299	299	0.03	< 0.005	—	299
Total	0.03	0.02	0.30	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	341	341	0.03	< 0.005	—	342

4.3. Area Emissions by Source

4.3.1. 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	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.89	0.85	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.9	25.9	< 0.005	< 0.005	—	26.0
Total	0.89	14.1	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	25.9	25.9	< 0.005	< 0.005	—	26.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	13.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	2.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.11	0.11	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.94	2.94	< 0.005	< 0.005	—	2.95
Total	0.11	2.52	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.94	2.94	< 0.005	< 0.005	—	2.95

4.3.2. 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	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.89	0.85	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.9	25.9	< 0.005	< 0.005	—	26.0
Total	0.89	14.1	0.09	9.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	25.9	25.9	< 0.005	< 0.005	—	26.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	13.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	2.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.11	0.11	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.94	2.94	< 0.005	< 0.005	—	2.95
Total	0.11	2.52	0.01	1.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.94	2.94	< 0.005	< 0.005	—	2.95

4.4. Water Emissions by Land Use

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	2.63	3.72	6.36	0.07	0.01	—	9.82
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.4	17.5	29.9	0.33	0.03	—	46.2
Total	—	—	—	—	—	—	—	—	—	—	—	15.0	21.2	36.2	0.39	0.03	—	56.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	2.63	3.72	6.36	0.07	0.01	—	9.82

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.4	17.5	29.9	0.33	0.03	—	46.2
Total	—	—	—	—	—	—	—	—	—	—	—	15.0	21.2	36.2	0.39	0.03	—	56.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.44	0.62	1.05	0.01	< 0.005	—	1.63
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.05	2.90	4.95	0.05	< 0.005	—	7.64
Total	—	—	—	—	—	—	—	—	—	—	—	2.48	3.51	6.00	0.07	0.01	—	9.27

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	2.11	2.98	5.08	0.06	< 0.005	—	7.86
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.90	14.0	23.9	0.26	0.02	—	36.9
Total	—	—	—	—	—	—	—	—	—	—	—	12.0	17.0	29.0	0.32	0.03	—	44.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	2.11	2.98	5.08	0.06	< 0.005	—	7.86
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.90	14.0	23.9	0.26	0.02	—	36.9
Total	—	—	—	—	—	—	—	—	—	—	—	12.0	17.0	29.0	0.32	0.03	—	44.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.35	0.49	0.84	0.01	< 0.005	—	1.30
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.64	2.32	3.96	0.04	< 0.005	—	6.11
Total	—	—	—	—	—	—	—	—	—	—	—	1.99	2.81	4.80	0.05	< 0.005	—	7.42

4.5. Waste Emissions by Land Use

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	12.0	0.00	12.0	1.20	0.00	—	41.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	68.7	0.00	68.7	6.87	0.00	—	240
Total	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	12.0	0.00	12.0	1.20	0.00	—	41.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	68.7	0.00	68.7	6.87	0.00	—	240
Total	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.98	0.00	1.98	0.20	0.00	—	6.94

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	11.4	0.00	11.4	1.14	0.00	—	39.8
Total	—	—	—	—	—	—	—	—	—	—	—	13.4	0.00	13.4	1.34	0.00	—	46.8

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	12.0	0.00	12.0	1.20	0.00	—	41.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	68.7	0.00	68.7	6.87	0.00	—	240
Total	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	12.0	0.00	12.0	1.20	0.00	—	41.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	68.7	0.00	68.7	6.87	0.00	—	240

Total	—	—	—	—	—	—	—	—	—	—	—	80.8	0.00	80.8	8.07	0.00	—	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.98	0.00	1.98	0.20	0.00	—	6.94
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	11.4	0.00	11.4	1.14	0.00	—	39.8
Total	—	—	—	—	—	—	—	—	—	—	—	13.4	0.00	13.4	1.34	0.00	—	46.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.00	4.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.00	4.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.66	0.66
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.67	0.67

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.00	4.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.00	4.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.02	4.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.66	0.66
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.67	0.67

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)

Equipme 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1/2/2025	5/5/2025	5.00	88.0	—
Site Preparation	Site Preparation	1/2/2025	7/4/2025	5.00	132	—
Grading	Grading	1/2/2025	5/5/2025	5.00	88.0	—
Building Construction	Building Construction	1/2/2026	1/4/2028	5.00	523	—
Paving	Paving	6/2/2025	11/29/2025	5.00	130	—
Architectural Coating	Architectural Coating	7/2/2027	1/4/2028	5.00	133	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	15.0	10.8	LDA,LDT1,LDT2
Demolition	Vendor	—	7.90	HHDT,MHDT
Demolition	Hauling	1.31	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.90	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	10.8	LDA,LDT1,LDT2
Grading	Vendor	—	7.90	HHDT,MHDT
Grading	Hauling	70.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	72.4	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	18.3	7.90	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.8	LDA,LDT1,LDT2
Paving	Vendor	—	7.90	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	14.5	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.90	HHDT,MHDT

Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	10.8	LDA,LDT1,LDT2
Demolition	Vendor	—	7.90	HHDT,MHDT
Demolition	Hauling	1.31	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.90	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	10.8	LDA,LDT1,LDT2
Grading	Vendor	—	7.90	HHDT,MHDT
Grading	Hauling	70.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	72.4	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	18.3	7.90	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.8	LDA,LDT1,LDT2

Paving	Vendor	—	7.90	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	14.5	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.90	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

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	1,180,980	393,660	0.00	0.00	21,092

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 (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	9,950	—
Site Preparation	0.00	0.00	198	0.00	—
Grading	0.00	49,700	264	0.00	—
Paving	0.00	0.00	0.00	0.00	9.62

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
Parking Lot	8.07	100%
City Park	0.00	0%
Apartments Low Rise	—	0%
Single Family Housing	1.55	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	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
Total all Land Uses	1,669	1,671	1,671	609,332	0.00	0.00	0.00	3,871,920

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	1,654	1,657	1,657	604,117	0.00	0.00	0.00	3,838,781

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
1136430	378,810	0.00	0.00	21,092

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	94,638	204	0.0330	0.0040	803,803
Single Family Housing	854,933	204	0.0330	0.0040	5,625,917

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	0.00	204	0.0330	0.0040	803,803

Single Family Housing	< 0.005	204	0.0330	0.0040	5,625,917

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	1,231,547	0.00
Single Family Housing	5,788,269	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	985,237	0.00
Single Family Housing	4,630,615	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Apartments Low Rise	22.2	—
Single Family Housing	128	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Apartments Low Rise	22.2	—
Single Family Housing	128	—

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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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

City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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	12.8	annual days of extreme heat
Extreme Precipitation	3.95	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	33.8	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
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	45.0
AQ-PM	0.75
AQ-DPM	0.25
Drinking Water	95.3
Lead Risk Housing	49.8
Pesticides	61.7
Toxic Releases	5.63
Traffic	0.13
Effect Indicators	—
CleanUp Sites	89.9
Groundwater	68.4
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	66.7
Solid Waste	97.6
Sensitive Population	—
Asthma	39.9
Cardio-vascular	67.7
Low Birth Weights	3.58
Socioeconomic Factor Indicators	—
Education	54.8
Housing	8.04

Linguistic	25.6
Poverty	43.5
Unemployment	59.4

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	67.67611959
Employed	53.24008726
Median HI	63.51854228
Education	—
Bachelor's or higher	45.73335044
High school enrollment	100
Preschool enrollment	66.93186193
Transportation	—
Auto Access	70.20402926
Active commuting	35.81419222
Social	—
2-parent households	88.13037341
Voting	77.00500449
Neighborhood	—
Alcohol availability	97.0101373
Park access	6.788143205
Retail density	0.025664057
Supermarket access	6.390350314
Tree canopy	57.37200051

Housing	—
Homeownership	64.04465546
Housing habitability	83.52367509
Low-inc homeowner severe housing cost burden	81.1625818
Low-inc renter severe housing cost burden	87.70691646
Uncrowded housing	70.98678301
Health Outcomes	—
Insured adults	49.59579109
Arthritis	0.0
Asthma ER Admissions	45.9
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	90.7
Cognitively Disabled	60.3
Physically Disabled	60.6
Heart Attack ER Admissions	27.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	7.1
SLR Inundation Area	0.0
Children	59.5
Elderly	43.3
English Speaking	50.5
Foreign-born	18.7
Outdoor Workers	11.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.6
Traffic Density	0.9
Traffic Access	0.0
Other Indices	—
Hardship	34.9
Other Decision Support	—
2016 Voting	82.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0
Healthy Places Index Score for Project Location (b)	65.0
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
Construction: Construction Phases	Applicant provided schedule
Construction: On-Road Fugitive Dust	Travel would be entirely on paved roads.
Construction: Architectural Coatings	Based on MBARD Rule 426
Operations: Road Dust	Roadways are paved
Operations: Hearths	No fireplaces or woodstoves proposed.
Land Use	Applicant provided.
Operations: Water and Waste Water	No septic tank use.

Lee Subdivision Alt 2 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	Lee Subdivision Alt 2
Construction Start Date	1/2/2025
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	15.6
Location	36.823486460583524, -121.35839777535722
County	San Benito
City	Unincorporated
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3103
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

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

Parking Lot	8.07	Acre	8.07	0.00	0.00	—	—	—
City Park	1.90	Acre	1.90	0.00	0.00	0.00	—	—
Apartments Low Rise	19.0	Dwelling Unit	1.19	19,000	0.00	—	62.0	—
Single Family Housing	106	Dwelling Unit	14.8	419,700	0.00	—	346	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Water	W-7	Adopt a Water Conservation Strategy

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.	11.0	23.8	90.3	83.3	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,598	21,598	0.66	1.04	15.2	21,938
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.0	23.7	90.8	82.9	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,559	21,559	0.64	1.04	0.39	21,884
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	3.51	9.22	28.3	27.6	0.05	1.16	9.97	11.1	1.07	4.70	5.77	—	6,462	6,462	0.20	0.28	4.52	6,547
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	1.68	5.17	5.03	0.01	0.21	1.82	2.03	0.20	0.86	1.05	—	1,070	1,070	0.03	0.05	0.75	1,084

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	11.0	9.27	90.3	83.3	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,598	21,598	0.66	1.04	14.5	21,938
2026	2.52	2.18	13.1	28.2	0.04	0.40	3.25	3.65	0.37	0.78	1.15	—	6,981	6,981	0.15	0.38	14.7	7,114
2027	2.66	23.8	13.4	30.8	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,576	7,576	0.16	0.39	15.2	7,712
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.25	90.8	82.9	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,559	21,559	0.64	1.04	0.38	21,884
2026	2.48	2.14	13.4	26.6	0.04	0.40	3.25	3.65	0.37	0.78	1.15	—	6,793	6,793	0.18	0.39	0.38	6,914
2027	2.62	23.7	13.8	29.0	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,356	7,356	0.17	0.40	0.39	7,479
2028	2.52	23.5	13.1	27.8	0.04	0.34	3.81	4.15	0.32	0.91	1.23	—	7,254	7,254	0.17	0.40	0.35	7,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.51	3.00	28.3	27.6	0.05	1.16	9.97	11.1	1.07	4.70	5.77	—	6,462	6,462	0.20	0.26	1.67	6,547
2026	1.76	1.51	9.45	18.6	0.03	0.29	2.29	2.58	0.27	0.55	0.82	—	4,851	4,851	0.12	0.28	4.52	4,941
2027	1.75	9.22	9.37	19.2	0.03	0.26	2.50	2.76	0.25	0.60	0.84	—	5,034	5,034	0.11	0.28	4.39	5,124
2028	0.02	0.18	0.10	0.21	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	56.9	56.9	< 0.005	< 0.005	0.05	57.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.64	0.55	5.17	5.03	0.01	0.21	1.82	2.03	0.20	0.86	1.05	—	1,070	1,070	0.03	0.04	0.28	1,084

2026	0.32	0.28	1.72	3.40	< 0.005	0.05	0.42	0.47	0.05	0.10	0.15	—	803	803	0.02	0.05	0.75	818
2027	0.32	1.68	1.71	3.50	< 0.005	0.05	0.46	0.50	0.04	0.11	0.15	—	833	833	0.02	0.05	0.73	848
2028	< 0.005	0.03	0.02	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	9.43	9.43	< 0.005	< 0.005	0.01	9.59

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	11.0	9.27	90.3	83.3	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,598	21,598	0.66	1.04	14.5	21,938
2026	2.52	2.18	13.1	28.2	0.04	0.40	3.25	3.65	0.37	0.78	1.15	—	6,981	6,981	0.15	0.38	14.7	7,114
2027	2.66	23.8	13.4	30.8	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,576	7,576	0.16	0.39	15.2	7,712
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.25	90.8	82.9	0.18	3.63	31.2	34.8	3.34	14.3	17.7	—	21,559	21,559	0.64	1.04	0.38	21,884
2026	2.48	2.14	13.4	26.6	0.04	0.40	3.25	3.65	0.37	0.78	1.15	—	6,793	6,793	0.18	0.39	0.38	6,914
2027	2.62	23.7	13.8	29.0	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,356	7,356	0.17	0.40	0.39	7,479
2028	2.52	23.5	13.1	27.8	0.04	0.34	3.81	4.15	0.32	0.91	1.23	—	7,254	7,254	0.17	0.40	0.35	7,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.51	3.00	28.3	27.6	0.05	1.16	9.97	11.1	1.07	4.70	5.77	—	6,462	6,462	0.20	0.26	1.67	6,547
2026	1.76	1.51	9.45	18.6	0.03	0.29	2.29	2.58	0.27	0.55	0.82	—	4,851	4,851	0.12	0.28	4.52	4,941
2027	1.75	9.22	9.37	19.2	0.03	0.26	2.50	2.76	0.25	0.60	0.84	—	5,034	5,034	0.11	0.28	4.39	5,124
2028	0.02	0.18	0.10	0.21	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	56.9	56.9	< 0.005	< 0.005	0.05	57.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.64	0.55	5.17	5.03	0.01	0.21	1.82	2.03	0.20	0.86	1.05	—	1,070	1,070	0.03	0.04	0.28	1,084
2026	0.32	0.28	1.72	3.40	< 0.005	0.05	0.42	0.47	0.05	0.10	0.15	—	803	803	0.02	0.05	0.75	818

2027	0.32	1.68	1.71	3.50	< 0.005	0.05	0.46	0.50	0.04	0.11	0.15	—	833	833	0.02	0.05	0.73	848
2028	< 0.005	0.03	0.02	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	9.43	9.43	< 0.005	< 0.005	0.01	9.59

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.	4.68	14.9	2.66	14.7	0.01	0.11	0.00	0.11	0.10	0.00	0.10	70.3	2,385	2,456	6.60	0.13	3.14	2,661
Mit.	4.68	14.9	2.66	14.7	0.01	0.11	0.00	0.11	0.10	0.00	0.10	68.1	1,989	2,058	6.48	0.11	3.14	2,256
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	17%	16%	2%	10%	—	15%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.84	14.0	2.81	11.3	0.01	0.10	0.00	0.10	0.10	0.00	0.10	70.3	2,376	2,446	6.66	0.14	3.14	2,657
Mit.	3.84	14.0	2.81	11.3	0.01	0.10	0.00	0.10	0.10	0.00	0.10	68.1	1,980	2,048	6.54	0.13	3.14	2,252
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	17%	16%	2%	9%	—	15%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.95	15.8	7.81	43.7	0.11	0.21	8.93	9.14	0.20	2.28	2.48	70.3	12,549	12,619	6.85	0.66	17.1	13,005
Mit.	5.95	15.8	7.81	43.7	0.11	0.21	8.93	9.14	0.20	2.28	2.48	68.1	12,153	12,221	6.73	0.65	17.1	12,601
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	3%	3%	2%	2%	—	3%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.09	2.89	1.43	7.98	0.02	0.04	1.63	1.67	0.04	0.42	0.45	11.6	2,078	2,089	1.13	0.11	2.82	2,153
Mit.	1.09	2.89	1.43	7.98	0.02	0.04	1.63	1.67	0.04	0.42	0.45	11.3	2,012	2,023	1.11	0.11	2.82	2,086

% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	3%	3%	2%	2%	—	3%

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	3.89	3.81	1.40	7.09	< 0.005	0.01	0.00	0.01	< 0.005	0.00	< 0.005	—	267	267	0.16	0.09	0.00	297
Area	0.65	11.0	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.0	19.0	< 0.005	< 0.005	—	19.0
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	2,083	2,083	0.23	0.01	—	2,093
Water	—	—	—	—	—	—	—	—	—	—	—	11.0	15.5	26.5	0.29	0.02	—	40.9
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	4.68	14.9	2.66	14.7	0.01	0.11	0.00	0.11	0.10	0.00	0.10	70.3	2,385	2,456	6.60	0.13	3.14	2,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.70	3.59	1.61	10.8	< 0.005	0.01	0.00	0.01	< 0.005	0.00	< 0.005	—	277	277	0.21	0.10	0.00	312
Area	0.00	10.4	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	2,083	2,083	0.23	0.01	—	2,093
Water	—	—	—	—	—	—	—	—	—	—	—	11.0	15.5	26.5	0.29	0.02	—	40.9
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	3.84	14.0	2.81	11.3	0.01	0.10	0.00	0.10	0.10	0.00	0.10	70.3	2,376	2,446	6.66	0.14	3.14	2,657
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.37	4.95	6.57	38.3	0.10	0.11	8.93	9.04	0.10	2.28	2.38	—	10,437	10,437	0.40	0.63	13.9	10,647

Area	0.45	10.8	0.05	4.87	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	13.0	13.0	< 0.005	< 0.005	—	13.0
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	2,083	2,083	0.23	0.01	—	2,093
Water	—	—	—	—	—	—	—	—	—	—	—	11.0	15.5	26.5	0.29	0.02	—	40.9
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	5.95	15.8	7.81	43.7	0.11	0.21	8.93	9.14	0.20	2.28	2.48	70.3	12,549	12,619	6.85	0.66	17.1	13,005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.98	0.90	1.20	7.00	0.02	0.02	1.63	1.65	0.02	0.42	0.43	—	1,728	1,728	0.07	0.10	2.30	1,763
Area	0.08	1.97	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.15	2.15	< 0.005	< 0.005	—	2.16
Energy	0.03	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	345	345	0.04	< 0.005	—	347
Water	—	—	—	—	—	—	—	—	—	—	—	1.82	2.57	4.38	0.05	< 0.005	—	6.78
Waste	—	—	—	—	—	—	—	—	—	—	—	9.83	0.00	9.83	0.98	0.00	—	34.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	1.09	2.89	1.43	7.98	0.02	0.04	1.63	1.67	0.04	0.42	0.45	11.6	2,078	2,089	1.13	0.11	2.82	2,153

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	3.89	3.81	1.40	7.09	< 0.005	0.01	0.00	0.01	< 0.005	0.00	< 0.005	—	267	267	0.16	0.09	0.00	297
Area	0.65	11.0	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.0	19.0	< 0.005	< 0.005	—	19.0
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,691	1,691	0.16	0.01	—	1,697
Water	—	—	—	—	—	—	—	—	—	—	—	8.77	12.4	21.2	0.23	0.02	—	32.7
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	4.68	14.9	2.66	14.7	0.01	0.11	0.00	0.11	0.10	0.00	0.10	68.1	1,989	2,058	6.48	0.11	3.14	2,256

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.70	3.59	1.61	10.8	< 0.005	0.01	0.00	0.01	< 0.005	0.00	< 0.005	—	277	277	0.21	0.10	0.00	312
Area	0.00	10.4	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,691	1,691	0.16	0.01	—	1,697
Water	—	—	—	—	—	—	—	—	—	—	—	8.77	12.4	21.2	0.23	0.02	—	32.7
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	3.84	14.0	2.81	11.3	0.01	0.10	0.00	0.10	0.10	0.00	0.10	68.1	1,980	2,048	6.54	0.13	3.14	2,252
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.37	4.95	6.57	38.3	0.10	0.11	8.93	9.04	0.10	2.28	2.38	—	10,437	10,437	0.40	0.63	13.9	10,647
Area	0.45	10.8	0.05	4.87	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	13.0	13.0	< 0.005	< 0.005	—	13.0
Energy	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,691	1,691	0.16	0.01	—	1,697
Water	—	—	—	—	—	—	—	—	—	—	—	8.77	12.4	21.2	0.23	0.02	—	32.7
Waste	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Total	5.95	15.8	7.81	43.7	0.11	0.21	8.93	9.14	0.20	2.28	2.48	68.1	12,153	12,221	6.73	0.65	17.1	12,601
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.98	0.90	1.20	7.00	0.02	0.02	1.63	1.65	0.02	0.42	0.43	—	1,728	1,728	0.07	0.10	2.30	1,763
Area	0.08	1.97	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.15	2.15	< 0.005	< 0.005	—	2.16
Energy	0.03	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	280	280	0.03	< 0.005	—	281
Water	—	—	—	—	—	—	—	—	—	—	—	1.45	2.06	3.51	0.04	< 0.005	—	5.42
Waste	—	—	—	—	—	—	—	—	—	—	—	9.83	0.00	9.83	0.98	0.00	—	34.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	1.09	2.89	1.43	7.98	0.02	0.04	1.63	1.67	0.04	0.42	0.45	11.3	2,012	2,023	1.11	0.11	2.82	2,086

3. Construction Emissions Details

3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.89	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	758	758	< 0.005	0.12	1.62	795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.94	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	759	759	< 0.005	0.12	0.04	794
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.08	42.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.17	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.96	6.96	< 0.005	< 0.005	0.01	7.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.3	30.3	< 0.005	< 0.005	0.03	31.7

3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.89	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	758	758	< 0.005	0.12	1.62	795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.94	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	759	759	< 0.005	0.12	0.04	794
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.08	42.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.17	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.96	6.96	< 0.005	< 0.005	0.01	7.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.3	30.3	< 0.005	< 0.005	0.03	31.7

3.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	1.21	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	223	223	0.01	0.01	0.87	226
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.06	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	208	208	0.01	0.01	0.02	210
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.7	75.7	< 0.005	< 0.005	0.14	76.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.4. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	1.21	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	223	223	0.01	0.01	0.87	226
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.06	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	208	208	0.01	0.01	0.02	210
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.7	75.7	< 0.005	< 0.005	0.14	76.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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

3.5. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.77	7.16	6.83	0.01	0.30	—	0.30	0.27	—	0.27	—	1,591	1,591	0.06	0.01	—	1,596

Dust From Material Movement	—	—	—	—	—	—	2.23	2.23	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.31	1.25	< 0.005	0.05	—	0.05	0.05	—	0.05	—	263	263	0.01	< 0.005	—	264
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.34	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	248	248	0.01	0.01	0.96	252
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.09	5.72	1.13	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,865	4,865	< 0.005	0.77	10.4	5,104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.18	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	231	231	0.01	0.01	0.02	234
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.05	1.16	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,869	4,869	< 0.005	0.77	0.27	5,098
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.27	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.1	56.1	< 0.005	< 0.005	0.10	56.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.43	0.28	0.01	0.02	0.31	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.19	1.08	1,230

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.28	9.28	< 0.005	< 0.005	0.02	9.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.18	204

3.6. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.25	9.25	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.92	0.77	7.16	6.83	0.01	0.30	—	0.30	0.27	—	0.27	—	1,591	1,591	0.06	0.01	—	1,596
Dust From Material Movement	—	—	—	—	—	—	2.23	2.23	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.31	1.25	< 0.005	0.05	—	0.05	0.05	—	0.05	—	263	263	0.01	< 0.005	—	264
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.34	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	248	248	0.01	0.01	0.96	252
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.09	5.72	1.13	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,865	4,865	< 0.005	0.77	10.4	5,104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.18	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	231	231	0.01	0.01	0.02	234
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.05	1.16	0.03	0.09	1.31	1.40	0.09	0.36	0.45	—	4,869	4,869	< 0.005	0.77	0.27	5,098
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.27	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.1	56.1	< 0.005	< 0.005	0.10	56.8

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.43	0.28	0.01	0.02	0.31	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.19	1.08	1,230
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.28	9.28	< 0.005	< 0.005	0.02	9.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.18	204

3.7. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.03	0.87	14.3	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,835	2,835	0.04	0.10	10.2	2,876
Vendor	0.10	0.08	2.35	0.95	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,749	1,749	0.02	0.26	4.55	1,832
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	1.08	12.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,645	2,645	0.06	0.11	0.26	2,679
Vendor	0.09	0.07	2.50	0.98	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,751	1,751	0.02	0.26	0.12	1,830
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.70	0.70	8.72	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,897	1,897	0.04	0.08	3.13	1,924
Vendor	0.07	0.05	1.74	0.69	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,246	1,246	0.01	0.19	1.40	1,304
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	0.14	0.13	0.13	1.59	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	314	314	0.01	0.01	0.52	318
Vendor	0.01	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.23	216
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

3.8. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.03	0.87	14.3	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,835	2,835	0.04	0.10	10.2	2,876
Vendor	0.10	0.08	2.35	0.95	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,749	1,749	0.02	0.26	4.55	1,832

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	1.08	12.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,645	2,645	0.06	0.11	0.26	2,679
Vendor	0.09	0.07	2.50	0.98	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,751	1,751	0.02	0.26	0.12	1,830
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.70	0.70	8.72	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,897	1,897	0.04	0.08	3.13	1,924
Vendor	0.07	0.05	1.74	0.69	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,246	1,246	0.01	0.19	1.40	1,304
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	0.14	0.13	0.13	1.59	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	314	314	0.01	0.01	0.52	318
Vendor	0.01	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.23	216
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

3.9. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.98	0.77	13.2	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,776	2,776	0.04	0.10	9.13	2,817
Vendor	0.09	0.07	2.27	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,712	1,712	< 0.005	0.25	4.19	1,790
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.95	0.99	11.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,591	2,591	0.06	0.11	0.24	2,624
Vendor	0.09	0.07	2.40	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,714	1,714	< 0.005	0.25	0.11	1,789
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.69	0.67	0.63	8.05	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,863	1,863	0.04	0.08	2.82	1,890
Vendor	0.07	0.05	1.67	0.65	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,223	1,223	< 0.005	0.18	1.29	1,278
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	0.13	0.12	0.11	1.47	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	308	308	0.01	0.01	0.47	313
Vendor	0.01	0.01	0.31	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	203	203	< 0.005	0.03	0.21	212
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

3.10. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.98	0.77	13.2	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,776	2,776	0.04	0.10	9.13	2,817
Vendor	0.09	0.07	2.27	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,712	1,712	< 0.005	0.25	4.19	1,790
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.95	0.99	11.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,591	2,591	0.06	0.11	0.24	2,624
Vendor	0.09	0.07	2.40	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,714	1,714	< 0.005	0.25	0.11	1,789
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.67	0.63	8.05	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,863	1,863	0.04	0.08	2.82	1,890
Vendor	0.07	0.05	1.67	0.65	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,223	1,223	< 0.005	0.18	1.29	1,278
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	0.13	0.12	0.11	1.47	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	308	308	0.01	0.01	0.47	313
Vendor	0.01	0.01	0.31	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	203	203	< 0.005	0.03	0.21	212
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

3.11. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.94	0.83	0.89	10.8	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,540	2,540	0.05	0.11	0.21	2,574
Vendor	0.08	0.07	2.30	0.88	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,672	1,672	< 0.005	0.25	0.10	1,747
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
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	—	20.0	20.0	< 0.005	< 0.005	0.03	20.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.36
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.26
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

3.12. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.83	0.89	10.8	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,540	2,540	0.05	0.11	0.21	2,574
Vendor	0.08	0.07	2.30	0.88	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,672	1,672	< 0.005	0.25	0.10	1,747
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
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	—	20.0	20.0	< 0.005	< 0.005	0.03	20.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.36
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.26
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

3.13. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	62.1	62.1	< 0.005	< 0.005	0.11	63.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.14. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	62.1	62.1	< 0.005	< 0.005	0.11	63.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.15. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	7.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.20	0.16	2.66	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	558	558	0.01	0.02	1.83	566

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.20	2.34	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	520	520	0.01	0.02	0.05	527
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	188	188	< 0.005	0.01	0.28	190
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.1	31.1	< 0.005	< 0.005	0.05	31.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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 (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	7.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.20	0.16	2.66	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	558	558	0.01	0.02	1.83	566

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.20	2.34	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	520	520	0.01	0.02	0.05	527
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	188	188	< 0.005	0.01	0.28	190
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.1	31.1	< 0.005	< 0.005	0.05	31.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.17. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architect ural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architect ural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	2.16	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	510	510	0.01	0.02	0.04	517
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	0.01	4.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.18. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	2.16	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	510	510	0.01	0.02	0.04	517
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	0.01	4.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	33.5	33.5	0.01	< 0.005	—	33.8
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	359	359	0.06	0.01	—	363
Total	—	—	—	—	—	—	—	—	—	—	—	—	565	565	0.09	0.01	—	570
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	33.5	33.5	0.01	< 0.005	—	33.8
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	359	359	0.06	0.01	—	363
Total	—	—	—	—	—	—	—	—	—	—	—	—	565	565	0.09	0.01	—	570
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	5.55	5.55	< 0.005	< 0.005	—	5.60
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	59.5	59.5	0.01	< 0.005	—	60.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	93.5	93.5	0.02	< 0.005	—	94.4

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Apartme Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	164
Single Family Housing	0.12	0.06	1.07	0.45	0.01	0.09	—	0.09	0.09	—	0.09	—	1,355	1,355	0.12	< 0.005	—	1,359
Total	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,519	1,519	0.13	< 0.005	—	1,523
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	164
Single Family Housing	0.12	0.06	1.07	0.45	0.01	0.09	—	0.09	0.09	—	0.09	—	1,355	1,355	0.12	< 0.005	—	1,359
Total	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,519	1,519	0.13	< 0.005	—	1,523
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Apartments Low Rise	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.0	27.0	< 0.005	< 0.005	—	27.1
Single Family Housing	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	224	224	0.02	< 0.005	—	225
Total	0.03	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	251	251	0.02	< 0.005	—	252

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	164
Single Family Housing	0.12	0.06	1.07	0.45	0.01	0.09	—	0.09	0.09	—	0.09	—	1,355	1,355	0.12	< 0.005	—	1,359
Total	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,519	1,519	0.13	< 0.005	—	1,523
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.02	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	164

Single Family Housing	0.12	0.06	1.07	0.45	0.01	0.09	—	0.09	0.09	—	0.09	—	1,355	1,355	0.12	< 0.005	—	1,359
Total	0.14	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,519	1,519	0.13	< 0.005	—	1,523
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.0	27.0	< 0.005	< 0.005	—	27.1
Single Family Housing	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	224	224	0.02	< 0.005	—	225
Total	0.03	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	251	251	0.02	< 0.005	—	252

4.3. Area Emissions by Source

4.3.1. 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	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.65	0.62	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.0	19.0	< 0.005	< 0.005	—	19.0
Total	0.65	11.0	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.0	19.0	< 0.005	< 0.005	—	19.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	10.4	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.08	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.15	2.15	< 0.005	< 0.005	—	2.16
Total	0.08	1.97	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.15	2.15	< 0.005	< 0.005	—	2.16

4.3.2. 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	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.65	0.62	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.0	19.0	< 0.005	< 0.005	—	19.0
Total	0.65	11.0	0.07	7.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.0	19.0	< 0.005	< 0.005	—	19.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	10.4	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.08	0.08	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.15	2.15	< 0.005	< 0.005	—	2.16
Total	0.08	1.97	0.01	0.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.15	2.15	< 0.005	< 0.005	—	2.16

4.4. Water Emissions by Land Use

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.67	2.36	4.03	0.04	< 0.005	—	6.22
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.30	13.2	22.5	0.24	0.02	—	34.7
Total	—	—	—	—	—	—	—	—	—	—	—	11.0	15.5	26.5	0.29	0.02	—	40.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.67	2.36	4.03	0.04	< 0.005	—	6.22

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.30	13.2	22.5	0.24	0.02	—	34.7
Total	—	—	—	—	—	—	—	—	—	—	—	11.0	15.5	26.5	0.29	0.02	—	40.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.28	0.39	0.67	0.01	< 0.005	—	1.03
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.54	2.18	3.72	0.04	< 0.005	—	5.75
Total	—	—	—	—	—	—	—	—	—	—	—	1.82	2.57	4.38	0.05	< 0.005	—	6.78

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.33	1.89	3.22	0.04	< 0.005	—	4.98
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.44	10.5	18.0	0.20	0.02	—	27.8
Total	—	—	—	—	—	—	—	—	—	—	—	8.77	12.4	21.2	0.23	0.02	—	32.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.33	1.89	3.22	0.04	< 0.005	—	4.98
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.44	10.5	18.0	0.20	0.02	—	27.8
Total	—	—	—	—	—	—	—	—	—	—	—	8.77	12.4	21.2	0.23	0.02	—	32.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.22	0.31	0.53	0.01	< 0.005	—	0.82
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.23	1.74	2.97	0.03	< 0.005	—	4.60
Total	—	—	—	—	—	—	—	—	—	—	—	1.45	2.06	3.51	0.04	< 0.005	—	5.42

4.5. Waste Emissions by Land Use

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.58	0.00	7.58	0.76	0.00	—	26.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	51.7	0.00	51.7	5.17	0.00	—	181
Total	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.58	0.00	7.58	0.76	0.00	—	26.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	51.7	0.00	51.7	5.17	0.00	—	181
Total	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.25	0.00	1.25	0.13	0.00	—	4.39

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	8.56	0.00	8.56	0.86	0.00	—	29.9
Total	—	—	—	—	—	—	—	—	—	—	—	9.83	0.00	9.83	0.98	0.00	—	34.4

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.58	0.00	7.58	0.76	0.00	—	26.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	51.7	0.00	51.7	5.17	0.00	—	181
Total	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.58	0.00	7.58	0.76	0.00	—	26.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	51.7	0.00	51.7	5.17	0.00	—	181

Total	—	—	—	—	—	—	—	—	—	—	—	59.4	0.00	59.4	5.93	0.00	—	208
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.25	0.00	1.25	0.13	0.00	—	4.39
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	8.56	0.00	8.56	0.86	0.00	—	29.9
Total	—	—	—	—	—	—	—	—	—	—	—	9.83	0.00	9.83	0.98	0.00	—	34.4

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.01	3.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.01	3.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.50	0.50
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.01	3.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.01	3.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.14	3.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.50	0.50
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1/2/2025	5/5/2025	5.00	88.0	—
Site Preparation	Site Preparation	1/2/2025	7/4/2025	5.00	132	—
Grading	Grading	1/2/2025	5/5/2025	5.00	88.0	—
Building Construction	Building Construction	1/2/2026	1/4/2028	5.00	523	—
Paving	Paving	6/2/2025	11/29/2025	5.00	130	—
Architectural Coating	Architectural Coating	7/2/2027	1/4/2028	5.00	133	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	15.0	16.8	LDA,LDT1,LDT2
Demolition	Vendor	0.00	6.60	HHDT,MHDT
Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	16.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.60	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	16.8	LDA,LDT1,LDT2
Grading	Vendor	0.00	6.60	HHDT,MHDT
Grading	Hauling	70.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	234	16.8	LDA,LDT1,LDT2
Building Construction	Vendor	85.0	6.60	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	16.8	LDA,LDT1,LDT2
Paving	Vendor	0.00	6.60	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	47.0	16.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.60	HHDT,MHDT

Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	16.8	LDA,LDT1,LDT2
Demolition	Vendor	0.00	6.60	HHDT,MHDT
Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	16.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.60	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	16.8	LDA,LDT1,LDT2
Grading	Vendor	0.00	6.60	HHDT,MHDT
Grading	Hauling	70.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	234	16.8	LDA,LDT1,LDT2
Building Construction	Vendor	85.0	6.60	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	16.8	LDA,LDT1,LDT2

Paving	Vendor	0.00	6.60	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	47.0	16.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.60	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

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	888,368	296,123	0.00	0.00	21,092

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 (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	9,950	—
Site Preparation	0.00	0.00	198	0.00	—
Grading	0.00	49,700	264	0.00	—
Paving	0.00	0.00	0.00	0.00	9.24

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
Parking Lot	8.07	100%
City Park	0.00	0%
Apartments Low Rise	—	0%
Single Family Housing	1.17	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	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
Total all Land Uses	1,213	1,215	1,216	443,259	0.00	0.00	0.00	4,584,708

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	1,205	1,207	1,208	440,469	0.00	0.00	0.00	4,555,851

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
888367.5	296,123	0.00	0.00	21,092

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	59,937	204	0.0330	0.0040	509,075
Single Family Housing	642,715	204	0.0330	0.0040	4,229,413

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	< 0.005	204	0.0330	0.0040	509,075

Single Family Housing	< 0.005	204	0.0330	0.0040	4,229,413

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	779,979	0.00
Single Family Housing	4,351,464	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	623,984	0.00
Single Family Housing	3,481,171	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Apartments Low Rise	14.1	—
Single Family Housing	95.9	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Apartments Low Rise	14.1	—
Single Family Housing	95.9	—

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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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

City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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	12.8	annual days of extreme heat
Extreme Precipitation	3.95	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	33.8	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
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	45.0
AQ-PM	0.75
AQ-DPM	0.25
Drinking Water	95.3
Lead Risk Housing	49.8
Pesticides	61.7
Toxic Releases	5.63
Traffic	0.13
Effect Indicators	—
CleanUp Sites	89.9
Groundwater	68.4
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	66.7
Solid Waste	97.6
Sensitive Population	—
Asthma	39.9
Cardio-vascular	67.7
Low Birth Weights	3.58
Socioeconomic Factor Indicators	—
Education	54.8
Housing	8.04

Linguistic	25.6
Poverty	43.5
Unemployment	59.4

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	67.67611959
Employed	53.24008726
Median HI	63.51854228
Education	—
Bachelor's or higher	45.73335044
High school enrollment	100
Preschool enrollment	66.93186193
Transportation	—
Auto Access	70.20402926
Active commuting	35.81419222
Social	—
2-parent households	88.13037341
Voting	77.00500449
Neighborhood	—
Alcohol availability	97.0101373
Park access	6.788143205
Retail density	0.025664057
Supermarket access	6.390350314
Tree canopy	57.37200051

Housing	—
Homeownership	64.04465546
Housing habitability	83.52367509
Low-inc homeowner severe housing cost burden	81.1625818
Low-inc renter severe housing cost burden	87.70691646
Uncrowded housing	70.98678301
Health Outcomes	—
Insured adults	49.59579109
Arthritis	0.0
Asthma ER Admissions	45.9
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	90.7
Cognitively Disabled	60.3
Physically Disabled	60.6
Heart Attack ER Admissions	27.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	7.1
SLR Inundation Area	0.0
Children	59.5
Elderly	43.3
English Speaking	50.5
Foreign-born	18.7
Outdoor Workers	11.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.6
Traffic Density	0.9
Traffic Access	0.0
Other Indices	—
Hardship	34.9
Other Decision Support	—
2016 Voting	82.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0
Healthy Places Index Score for Project Location (b)	65.0
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	Applicant provided.
Construction: Construction Phases	Applicant provided schedule.
Construction: Trips and VMT	Applicant provided.
Construction: On-Road Fugitive Dust	Roads are all paved.
Construction: Architectural Coatings	Applicant provided.
Operations: Road Dust	Roads are paved.
Operations: Hearths	No fireplaces or woodstoves proposed.
Operations: Vehicle Data	Applicant provided
Operations: Water and Waste Water	No septic tank use

Lee Subdivision Alt 3 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	Lee Subdivision Alt 3
Construction Start Date	1/2/2025
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	15.6
Location	36.82342656926747, -121.3583783761746
County	San Benito
City	Unincorporated
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3103
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

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

Parking Lot	8.07	Acre	8.07	0.00	0.00	—	—	—
City Park	1.90	Acre	1.90	0.00	0.00	0.00	—	—
Single Family Housing	212	Dwelling Unit	14.8	530,000	0.00	—	691	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Water	W-7	Adopt a Water Conservation Strategy

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.	11.0	28.1	90.4	82.9	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,547	21,547	0.65	1.19	25.5	21,887
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.0	28.0	90.8	82.6	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,513	21,513	0.64	1.20	0.66	21,839
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.41	10.8	45.2	41.9	0.10	1.79	15.0	16.8	1.65	6.61	8.26	—	11,967	11,967	0.33	0.66	5.66	12,176

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.99	1.96	8.24	7.65	0.02	0.33	2.74	3.06	0.30	1.21	1.51	—	1,981	1,981	0.06	0.11	0.94	2,016

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	11.0	9.26	90.4	82.9	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,547	21,547	0.65	1.04	14.3	21,887
2026	6.38	5.41	46.0	58.2	0.13	1.62	14.0	15.6	1.50	4.85	6.35	—	18,613	18,613	0.43	1.19	25.5	19,004
2027	2.66	28.1	13.4	30.8	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,576	7,576	0.16	0.39	15.2	7,712
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.24	90.8	82.6	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,513	21,513	0.64	1.04	0.37	21,839
2026	6.33	5.35	46.7	56.4	0.13	1.62	14.0	15.6	1.50	4.85	6.35	—	18,414	18,414	0.45	1.20	0.66	18,782
2027	2.62	28.0	13.8	29.0	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,356	7,356	0.17	0.40	0.39	7,479
2028	2.52	27.8	13.1	27.8	0.04	0.34	3.81	4.15	0.32	0.91	1.23	—	7,254	7,254	0.17	0.40	0.35	7,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.41	4.60	45.2	41.9	0.10	1.79	15.0	16.8	1.65	6.61	8.26	—	11,967	11,967	0.33	0.66	3.96	12,176
2026	2.70	2.30	17.6	25.9	0.05	0.58	4.92	5.51	0.54	1.55	2.09	—	7,693	7,693	0.19	0.47	5.66	7,845
2027	1.75	10.8	9.37	19.2	0.03	0.26	2.50	2.76	0.25	0.60	0.84	—	5,034	5,034	0.11	0.28	4.39	5,124
2028	0.02	0.22	0.10	0.21	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	56.9	56.9	< 0.005	< 0.005	0.05	57.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.99	0.84	8.24	7.65	0.02	0.33	2.74	3.06	0.30	1.21	1.51	—	1,981	1,981	0.06	0.11	0.66	2,016
2026	0.49	0.42	3.20	4.73	0.01	0.11	0.90	1.01	0.10	0.28	0.38	—	1,274	1,274	0.03	0.08	0.94	1,299

2027	0.32	1.96	1.71	3.50	< 0.005	0.05	0.46	0.50	0.04	0.11	0.15	—	833	833	0.02	0.05	0.73	848
2028	< 0.005	0.04	0.02	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	9.43	9.43	< 0.005	< 0.005	0.01	9.59

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	11.0	9.26	90.4	82.9	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,547	21,547	0.65	1.04	14.3	21,887
2026	6.38	5.41	46.0	58.2	0.13	1.62	14.0	15.6	1.50	4.85	6.35	—	18,613	18,613	0.43	1.19	25.5	19,004
2027	2.66	28.1	13.4	30.8	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,576	7,576	0.16	0.39	15.2	7,712
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	9.24	90.8	82.6	0.18	3.63	31.1	34.7	3.35	14.3	17.7	—	21,513	21,513	0.64	1.04	0.37	21,839
2026	6.33	5.35	46.7	56.4	0.13	1.62	14.0	15.6	1.50	4.85	6.35	—	18,414	18,414	0.45	1.20	0.66	18,782
2027	2.62	28.0	13.8	29.0	0.04	0.38	3.81	4.19	0.35	0.91	1.26	—	7,356	7,356	0.17	0.40	0.39	7,479
2028	2.52	27.8	13.1	27.8	0.04	0.34	3.81	4.15	0.32	0.91	1.23	—	7,254	7,254	0.17	0.40	0.35	7,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.41	4.60	45.2	41.9	0.10	1.79	15.0	16.8	1.65	6.61	8.26	—	11,967	11,967	0.33	0.66	3.96	12,176
2026	2.70	2.30	17.6	25.9	0.05	0.58	4.92	5.51	0.54	1.55	2.09	—	7,693	7,693	0.19	0.47	5.66	7,845
2027	1.75	10.8	9.37	19.2	0.03	0.26	2.50	2.76	0.25	0.60	0.84	—	5,034	5,034	0.11	0.28	4.39	5,124
2028	0.02	0.22	0.10	0.21	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	56.9	56.9	< 0.005	< 0.005	0.05	57.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.99	0.84	8.24	7.65	0.02	0.33	2.74	3.06	0.30	1.21	1.51	—	1,981	1,981	0.06	0.11	0.66	2,016
2026	0.49	0.42	3.20	4.73	0.01	0.11	0.90	1.01	0.10	0.28	0.38	—	1,274	1,274	0.03	0.08	0.94	1,299
2027	0.32	1.96	1.71	3.50	< 0.005	0.05	0.46	0.50	0.04	0.11	0.15	—	833	833	0.02	0.05	0.73	848

2028	< 0.005	0.04	0.02	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	9.43	9.43	< 0.005	< 0.005	0.01	9.59

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.	8.01	20.2	4.65	25.1	0.02	0.19	0.00	0.19	0.18	0.00	0.18	122	4,118	4,240	11.5	0.21	3.80	4,594
Mit.	8.01	20.2	4.65	25.1	0.02	0.19	0.00	0.19	0.18	0.00	0.18	118	3,394	3,512	11.3	0.19	3.80	3,854
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	18%	17%	2%	10%	—	16%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.58	18.8	4.90	19.4	0.02	0.18	0.00	0.18	0.18	0.00	0.18	122	4,102	4,224	11.6	0.23	3.80	4,587
Mit.	6.58	18.8	4.90	19.4	0.02	0.18	0.00	0.18	0.18	0.00	0.18	118	3,378	3,496	11.4	0.21	3.80	3,847
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	18%	17%	2%	10%	—	16%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	21.8	13.5	75.0	0.19	0.36	15.3	15.7	0.35	3.91	4.26	122	21,573	21,695	11.9	1.14	27.7	22,359
Mit.	10.2	21.8	13.5	75.0	0.19	0.36	15.3	15.7	0.35	3.91	4.26	118	20,850	20,968	11.7	1.12	27.7	21,620
% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	3%	3%	2%	2%	—	3%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.86	3.99	2.46	13.7	0.03	0.07	2.80	2.87	0.06	0.71	0.78	20.2	3,572	3,592	1.97	0.19	4.58	3,702
Mit.	1.86	3.99	2.46	13.7	0.03	0.07	2.80	2.87	0.06	0.71	0.78	19.6	3,452	3,471	1.93	0.18	4.58	3,579

% Reduced	—	—	—	—	—	—	—	—	—	—	—	3%	3%	3%	2%	2%	—	3%

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	6.66	6.52	2.40	12.1	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	458	458	0.27	0.15	0.00	509
Area	1.11	13.6	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	32.2	32.2	< 0.005	< 0.005	—	32.3
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	3,601	3,601	0.38	0.02	—	3,618
Water	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	8.01	20.2	4.65	25.1	0.02	0.19	0.00	0.19	0.18	0.00	0.18	122	4,118	4,240	11.5	0.21	3.80	4,594
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.33	6.14	2.76	18.5	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	474	474	0.37	0.17	0.00	534
Area	0.00	12.5	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	3,601	3,601	0.38	0.02	—	3,618
Water	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	6.58	18.8	4.90	19.4	0.02	0.18	0.00	0.18	0.18	0.00	0.18	122	4,102	4,224	11.6	0.23	3.80	4,587
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.21	8.49	11.3	65.8	0.18	0.19	15.3	15.5	0.18	3.91	4.09	—	17,923	17,923	0.69	1.07	23.9	18,285

Area	0.76	13.2	0.08	8.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	22.0	22.0	< 0.005	< 0.005	—	22.1
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	3,601	3,601	0.38	0.02	—	3,618
Water	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	10.2	21.8	13.5	75.0	0.19	0.36	15.3	15.7	0.35	3.91	4.26	122	21,573	21,695	11.9	1.14	27.7	22,359
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.68	1.55	2.06	12.0	0.03	0.03	2.80	2.83	0.03	0.71	0.75	—	2,967	2,967	0.11	0.18	3.95	3,027
Area	0.14	2.42	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.65	3.65	< 0.005	< 0.005	—	3.66
Energy	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	596	596	0.06	< 0.005	—	599
Water	—	—	—	—	—	—	—	—	—	—	—	3.08	4.36	7.44	0.08	0.01	—	11.5
Waste	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63
Total	1.86	3.99	2.46	13.7	0.03	0.07	2.80	2.87	0.06	0.71	0.78	20.2	3,572	3,592	1.97	0.19	4.58	3,702

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	6.66	6.52	2.40	12.1	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	458	458	0.27	0.15	0.00	509
Area	1.11	13.6	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	32.2	32.2	< 0.005	< 0.005	—	32.3
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,883	2,883	0.27	0.01	—	2,892
Water	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	8.01	20.2	4.65	25.1	0.02	0.19	0.00	0.19	0.18	0.00	0.18	118	3,394	3,512	11.3	0.19	3.80	3,854

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.33	6.14	2.76	18.5	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	474	474	0.37	0.17	0.00	534
Area	0.00	12.5	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,883	2,883	0.27	0.01	—	2,892
Water	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	6.58	18.8	4.90	19.4	0.02	0.18	0.00	0.18	0.18	0.00	0.18	118	3,378	3,496	11.4	0.21	3.80	3,847
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.21	8.49	11.3	65.8	0.18	0.19	15.3	15.5	0.18	3.91	4.09	—	17,923	17,923	0.69	1.07	23.9	18,285
Area	0.76	13.2	0.08	8.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	22.0	22.0	< 0.005	< 0.005	—	22.1
Energy	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,883	2,883	0.27	0.01	—	2,892
Water	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Waste	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	10.2	21.8	13.5	75.0	0.19	0.36	15.3	15.7	0.35	3.91	4.26	118	20,850	20,968	11.7	1.12	27.7	21,620
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.68	1.55	2.06	12.0	0.03	0.03	2.80	2.83	0.03	0.71	0.75	—	2,967	2,967	0.11	0.18	3.95	3,027
Area	0.14	2.42	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.65	3.65	< 0.005	< 0.005	—	3.66
Energy	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	477	477	0.04	< 0.005	—	479
Water	—	—	—	—	—	—	—	—	—	—	—	2.46	3.49	5.95	0.06	0.01	—	9.19
Waste	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63
Total	1.86	3.99	2.46	13.7	0.03	0.07	2.80	2.87	0.06	0.71	0.78	19.6	3,452	3,471	1.93	0.18	4.58	3,579

3. Construction Emissions Details

3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.89	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	758	758	< 0.005	0.12	1.62	795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.94	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	759	759	< 0.005	0.12	0.04	794
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.08	42.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.17	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.96	6.96	< 0.005	< 0.005	0.01	7.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.3	30.3	< 0.005	< 0.005	0.03	31.7

3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	826	826	0.03	0.01	—	829
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.11	0.98	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.89	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	758	758	< 0.005	0.12	1.62	795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.94	0.18	0.01	0.01	0.20	0.22	0.01	0.06	0.07	—	759	759	< 0.005	0.12	0.04	794
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.08	42.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.17	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.96	6.96	< 0.005	< 0.005	0.01	7.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.3	30.3	< 0.005	< 0.005	0.03	31.7

3.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.05	0.84	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	144	144	0.01	0.01	0.56	147
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.78	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	135	135	0.01	0.01	0.01	137
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.27	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.1	49.1	< 0.005	< 0.005	0.09	49.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.13	8.13	< 0.005	< 0.005	0.01	8.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.4. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.20	11.4	10.9	0.02	0.49	—	0.49	0.45	—	0.45	—	1,915	1,915	0.08	0.02	—	1,922
Dust From Material Movement	—	—	—	—	—	—	7.11	7.11	—	3.65	3.65	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.09	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	317	317	0.01	< 0.005	—	318
Dust From Material Movement	—	—	—	—	—	—	1.30	1.30	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.05	0.84	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	144	144	0.01	0.01	0.56	147
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.78	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	135	135	0.01	0.01	0.01	137
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.27	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.1	49.1	< 0.005	< 0.005	0.09	49.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.13	8.13	< 0.005	< 0.005	0.01	8.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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

3.5. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.71	2.28	21.1	20.2	0.04	0.88	—	0.88	0.81	—	0.81	—	4,701	4,701	0.19	0.04	—	4,717

Dust From Material Movement	—	—	—	—	—	—	6.56	6.56	—	2.60	2.60	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.42	3.86	3.68	0.01	0.16	—	0.16	0.15	—	0.15	—	778	778	0.03	0.01	—	781
Dust From Material Movement	—	—	—	—	—	—	1.20	1.20	—	0.48	0.48	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.34	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	248	248	0.01	0.01	0.96	252
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.10	5.76	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,892	4,892	< 0.005	0.77	10.4	5,133
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.18	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	231	231	0.01	0.01	0.02	234
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.09	1.17	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,896	4,896	< 0.005	0.77	0.27	5,127
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.81	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	166	166	< 0.005	0.01	0.30	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.07	4.24	0.82	0.02	0.07	0.93	1.00	0.07	0.25	0.32	—	3,486	3,486	< 0.005	0.55	3.22	3,654

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.4	27.4	< 0.005	< 0.005	0.05	27.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.77	0.15	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	577	577	< 0.005	0.09	0.53	605

3.6. 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.71	2.28	21.1	20.2	0.04	0.88	—	0.88	0.81	—	0.81	—	4,701	4,701	0.19	0.04	—	4,717
Dust From Material Movement	—	—	—	—	—	—	6.56	6.56	—	2.60	2.60	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.42	3.86	3.68	0.01	0.16	—	0.16	0.15	—	0.15	—	778	778	0.03	0.01	—	781
Dust From Material Movement	—	—	—	—	—	—	1.20	1.20	—	0.48	0.48	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.34	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	248	248	0.01	0.01	0.96	252
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.10	5.76	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,892	4,892	< 0.005	0.77	10.4	5,133
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.18	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	231	231	0.01	0.01	0.02	234
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	6.09	1.17	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,896	4,896	< 0.005	0.77	0.27	5,127
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.81	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	166	166	< 0.005	0.01	0.30	168

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.07	4.24	0.82	0.02	0.07	0.93	1.00	0.07	0.25	0.32	—	3,486	3,486	< 0.005	0.55	3.22	3,654
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.4	27.4	< 0.005	< 0.005	0.05	27.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.77	0.15	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	577	577	< 0.005	0.09	0.53	605

3.7. Grading (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	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.74	6.66	6.74	0.01	0.27	—	0.27	0.25	—	0.25	—	1,614	1,614	0.07	0.01	—	1,620
Dust From Material Movement	—	—	—	—	—	—	2.25	2.25	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.22	1.23	< 0.005	0.05	—	0.05	0.05	—	0.05	—	267	267	0.01	< 0.005	—	268
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.22	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	242	242	< 0.005	0.01	0.87	246
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.10	5.63	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,792	4,792	< 0.005	0.74	9.94	5,023
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.08	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	226	226	0.01	0.01	0.02	229
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.13	0.09	5.93	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,796	4,796	< 0.005	0.74	0.26	5,017
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.7	55.7	< 0.005	< 0.005	0.09	56.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.42	0.28	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.18	1.05	1,228
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.22	9.22	< 0.005	< 0.005	0.02	9.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.17	203

3.8. Grading (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	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.74	6.66	6.74	0.01	0.27	—	0.27	0.25	—	0.25	—	1,614	1,614	0.07	0.01	—	1,620
Dust From Material Movement	—	—	—	—	—	—	2.25	2.25	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.22	1.23	< 0.005	0.05	—	0.05	0.05	—	0.05	—	267	267	0.01	< 0.005	—	268
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.22	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	242	242	< 0.005	0.01	0.87	246
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.10	5.63	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,792	4,792	< 0.005	0.74	9.94	5,023
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.09	1.08	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	226	226	0.01	0.01	0.02	229
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.09	5.93	1.14	0.03	0.09	1.32	1.41	0.09	0.36	0.45	—	4,796	4,796	< 0.005	0.74	0.26	5,017
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.7	55.7	< 0.005	< 0.005	0.09	56.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.02	1.42	0.28	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,173	1,173	< 0.005	0.18	1.05	1,228
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.22	9.22	< 0.005	< 0.005	0.02	9.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.26	0.05	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.17	203

3.9. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.03	0.87	14.3	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,835	2,835	0.04	0.10	10.2	2,876
Vendor	0.10	0.08	2.35	0.95	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,749	1,749	0.02	0.26	4.55	1,832
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	1.08	12.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,645	2,645	0.06	0.11	0.26	2,679
Vendor	0.09	0.07	2.50	0.98	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,751	1,751	0.02	0.26	0.12	1,830
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.70	0.70	8.72	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,897	1,897	0.04	0.08	3.13	1,924
Vendor	0.07	0.05	1.74	0.69	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,246	1,246	0.01	0.19	1.40	1,304
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	0.14	0.13	0.13	1.59	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	314	314	0.01	0.01	0.52	318
Vendor	0.01	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.23	216
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

3.10. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.02	9.24	0.02	0.27	—	0.27	0.25	—	0.25	—	1,708	1,708	0.07	0.01	—	1,713
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.03	0.87	14.3	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,835	2,835	0.04	0.10	10.2	2,876
Vendor	0.10	0.08	2.35	0.95	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,749	1,749	0.02	0.26	4.55	1,832
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	1.08	12.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,645	2,645	0.06	0.11	0.26	2,679
Vendor	0.09	0.07	2.50	0.98	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,751	1,751	0.02	0.26	0.12	1,830
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.70	0.70	8.72	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,897	1,897	0.04	0.08	3.13	1,924
Vendor	0.07	0.05	1.74	0.69	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,246	1,246	0.01	0.19	1.40	1,304
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	0.14	0.13	0.13	1.59	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	314	314	0.01	0.01	0.52	318
Vendor	0.01	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.23	216
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

3.11. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.98	0.77	13.2	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,776	2,776	0.04	0.10	9.13	2,817
Vendor	0.09	0.07	2.27	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,712	1,712	< 0.005	0.25	4.19	1,790
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.95	0.99	11.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,591	2,591	0.06	0.11	0.24	2,624
Vendor	0.09	0.07	2.40	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,714	1,714	< 0.005	0.25	0.11	1,789
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.67	0.63	8.05	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,863	1,863	0.04	0.08	2.82	1,890
Vendor	0.07	0.05	1.67	0.65	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,223	1,223	< 0.005	0.18	1.29	1,278
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	0.13	0.12	0.11	1.47	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	308	308	0.01	0.01	0.47	313
Vendor	0.01	0.01	0.31	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	203	203	< 0.005	0.03	0.21	212
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

3.12. Building Construction (2027) - 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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.98	0.77	13.2	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,776	2,776	0.04	0.10	9.13	2,817
Vendor	0.09	0.07	2.27	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,712	1,712	< 0.005	0.25	4.19	1,790
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.95	0.99	11.7	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,591	2,591	0.06	0.11	0.24	2,624
Vendor	0.09	0.07	2.40	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,714	1,714	< 0.005	0.25	0.11	1,789
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.67	0.63	8.05	0.00	0.00	1.96	1.96	0.00	0.46	0.46	—	1,863	1,863	0.04	0.08	2.82	1,890
Vendor	0.07	0.05	1.67	0.65	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,223	1,223	< 0.005	0.18	1.29	1,278

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	0.13	0.12	0.11	1.47	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	308	308	0.01	0.01	0.47	313
Vendor	0.01	0.01	0.31	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	203	203	< 0.005	0.03	0.21	212
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

3.13. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.83	0.89	10.8	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,540	2,540	0.05	0.11	0.21	2,574
Vendor	0.08	0.07	2.30	0.88	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,672	1,672	< 0.005	0.25	0.10	1,747
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
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	—	20.0	20.0	< 0.005	< 0.005	0.03	20.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.36
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.26
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

3.14. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.12
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.83	0.89	10.8	0.00	0.00	2.78	2.78	0.00	0.65	0.65	—	2,540	2,540	0.05	0.11	0.21	2,574
Vendor	0.08	0.07	2.30	0.88	0.01	0.02	0.47	0.50	0.02	0.13	0.15	—	1,672	1,672	< 0.005	0.25	0.10	1,747
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
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	—	20.0	20.0	< 0.005	< 0.005	0.03	20.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.36

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.26
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

3.15. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	62.1	62.1	< 0.005	< 0.005	0.11	63.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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. Paving (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	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.65	3.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	538	538	0.02	< 0.005	—	540
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.1	89.1	< 0.005	< 0.005	—	89.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	1.01	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	0.01	0.01	0.72	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.88	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	62.1	62.1	< 0.005	< 0.005	0.11	63.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.17. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	9.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.20	0.16	2.66	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	558	558	0.01	0.02	1.83	566
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.20	2.34	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	520	520	0.01	0.02	0.05	527
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	188	188	< 0.005	0.01	0.28	190
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.1	31.1	< 0.005	< 0.005	0.05	31.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.18. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.8	47.8	< 0.005	< 0.005	—	48.0
Architectural Coatings	—	9.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.92	7.92	< 0.005	< 0.005	—	7.94
Architectural Coatings	—	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.20	0.16	2.66	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	558	558	0.01	0.02	1.83	566
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.20	2.34	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	520	520	0.01	0.02	0.05	527
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	188	188	< 0.005	0.01	0.28	190
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.1	31.1	< 0.005	< 0.005	0.05	31.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.19. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architectural Coatings	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	2.16	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	510	510	0.01	0.02	0.04	517

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	0.01	4.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

3.20. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	25.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Architectural Coatings	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	2.16	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	510	510	0.01	0.02	0.04	517
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	0.01	4.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	718	718	0.12	0.01	—	725
Total	—	—	—	—	—	—	—	—	—	—	—	—	890	890	0.14	0.02	—	899
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	718	718	0.12	0.01	—	725
Total	—	—	—	—	—	—	—	—	—	—	—	—	890	890	0.14	0.02	—	899
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	119	119	0.02	< 0.005	—	120
Total	—	—	—	—	—	—	—	—	—	—	—	—	147	147	0.02	< 0.005	—	149

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.03	< 0.005	—	174
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	28.5	28.5	< 0.005	< 0.005	—	28.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718

Total	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Total	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	449	449	0.04	< 0.005	—	450
Total	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	449	449	0.04	< 0.005	—	450

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Single Family Housing	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Total	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Total	0.25	0.12	2.14	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,711	2,711	0.24	0.01	—	2,718
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	449	449	0.04	< 0.005	—	450
Total	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	449	449	0.04	< 0.005	—	450

4.3. Area Emissions by Source

4.3.1. 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	0.00	0.00	0.00	0.00	—	0.00

Consum Products	—	11.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.11	1.05	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	32.2	32.2	< 0.005	< 0.005	—	32.3
Total	1.11	13.6	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	32.2	32.2	< 0.005	< 0.005	—	32.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	11.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	12.5	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	2.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.14	0.13	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.65	3.65	< 0.005	< 0.005	—	3.66
Total	0.14	2.42	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.65	3.65	< 0.005	< 0.005	—	3.66

4.3.2. 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	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	11.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.11	1.05	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	32.2	32.2	< 0.005	< 0.005	—	32.3
Total	1.11	13.6	0.11	12.0	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	32.2	32.2	< 0.005	< 0.005	—	32.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	11.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	12.5	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Consumer Products	—	2.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.14	0.13	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.65	3.65	< 0.005	< 0.005	—	3.66
Total	0.14	2.42	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.65	3.65	< 0.005	< 0.005	—	3.66

4.4. Water Emissions by Land Use

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Total	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Total	—	—	—	—	—	—	—	—	—	—	—	18.6	26.3	44.9	0.49	0.04	—	69.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	3.08	4.36	7.44	0.08	0.01	—	11.5
Total	—	—	—	—	—	—	—	—	—	—	—	3.08	4.36	7.44	0.08	0.01	—	11.5

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Total	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Total	—	—	—	—	—	—	—	—	—	—	—	14.9	21.1	35.9	0.39	0.03	—	55.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.46	3.49	5.95	0.06	0.01	—	9.19
Total	—	—	—	—	—	—	—	—	—	—	—	2.46	3.49	5.95	0.06	0.01	—	9.19

4.5. Waste Emissions by Land Use

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Total	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Total	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361

Total	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.09	0.00	0.09	0.01	0.00	—	0.31
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Total	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.1	0.00	17.1	1.71	0.00	—	59.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.80	3.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.63	0.63

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	1/2/2025	5/5/2025	5.00	88.0	—
Site Preparation	Site Preparation	1/2/2025	7/4/2025	5.00	132	—
Grading	Grading	1/2/2025	5/5/2026	5.00	349	—
Building Construction	Building Construction	1/2/2026	1/4/2028	5.00	523	—
Paving	Paving	6/2/2025	11/29/2025	5.00	130	—
Architectural Coating	Architectural Coating	7/2/2027	1/4/2028	5.00	133	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38

Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
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	15.0	16.8	LDA,LDT1,LDT2
Demolition	Vendor	0.00	6.60	HHDT,MHDT

Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.60	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	16.8	LDA,LDT1,LDT2
Grading	Vendor	0.00	6.60	HHDT,MHDT
Grading	Hauling	71.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	234	16.8	LDA,LDT1,LDT2
Building Construction	Vendor	85.0	6.60	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	16.8	LDA,LDT1,LDT2
Paving	Vendor	0.00	6.60	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	47.0	16.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.60	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	16.8	LDA,LDT1,LDT2
Demolition	Vendor	0.00	6.60	HHDT,MHDT
Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.60	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	16.8	LDA,LDT1,LDT2
Grading	Vendor	0.00	6.60	HHDT,MHDT
Grading	Hauling	71.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	234	16.8	LDA,LDT1,LDT2
Building Construction	Vendor	85.0	6.60	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	16.8	LDA,LDT1,LDT2
Paving	Vendor	0.00	6.60	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	47.0	16.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.60	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

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	1,073,250	357,750	0.00	0.00	21,092

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 (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	9,950	—
Site Preparation	0.00	0.00	198	0.00	—
Grading	0.00	49,700	1,047	0.00	—
Paving	0.00	0.00	0.00	0.00	10.4

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
Parking Lot	8.07	100%
City Park	0.00	0%
Single Family Housing	2.34	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	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
Total all Land Uses	2,082	2,082	2,082	759,872	0.00	0.00	0.00	7,873,665

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	2,082	2,082	2,082	759,872	0.00	0.00	0.00	7,873,665

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
1073250	357,750	0.00	0.00	21,092

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Single Family Housing	1,285,431	204	0.0330	0.0040	8,458,825

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)
Parking Lot	307,940	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Single Family Housing	< 0.005	204	0.0330	0.0040	8,458,825

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Single Family Housing	8,702,929	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	0.00
City Park	0.00	0.00
Single Family Housing	6,962,343	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Single Family Housing	192	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
City Park	0.16	—
Single Family Housing	192	—

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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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	12.8	annual days of extreme heat
Extreme Precipitation	3.95	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	33.8	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
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	45.0

AQ-PM	0.75
AQ-DPM	0.25
Drinking Water	95.3
Lead Risk Housing	49.8
Pesticides	61.7
Toxic Releases	5.63
Traffic	0.13
Effect Indicators	—
CleanUp Sites	89.9
Groundwater	68.4
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	66.7
Solid Waste	97.6
Sensitive Population	—
Asthma	39.9
Cardio-vascular	67.7
Low Birth Weights	3.58
Socioeconomic Factor Indicators	—
Education	54.8
Housing	8.04
Linguistic	25.6
Poverty	43.5
Unemployment	59.4

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	67.67611959
Employed	53.24008726
Median HI	63.51854228
Education	—
Bachelor's or higher	45.73335044
High school enrollment	100
Preschool enrollment	66.93186193
Transportation	—
Auto Access	70.20402926
Active commuting	35.81419222
Social	—
2-parent households	88.13037341
Voting	77.00500449
Neighborhood	—
Alcohol availability	97.0101373
Park access	6.788143205
Retail density	0.025664057
Supermarket access	6.390350314
Tree canopy	57.37200051
Housing	—
Homeownership	64.04465546
Housing habitability	83.52367509
Low-inc homeowner severe housing cost burden	81.1625818
Low-inc renter severe housing cost burden	87.70691646
Uncrowded housing	70.98678301
Health Outcomes	—

Insured adults	49.59579109
Arthritis	0.0
Asthma ER Admissions	45.9
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	90.7
Cognitively Disabled	60.3
Physically Disabled	60.6
Heart Attack ER Admissions	27.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	7.1
SLR Inundation Area	0.0
Children	59.5

Elderly	43.3
English Speaking	50.5
Foreign-born	18.7
Outdoor Workers	11.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.6
Traffic Density	0.9
Traffic Access	0.0
Other Indices	—
Hardship	34.9
Other Decision Support	—
2016 Voting	82.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0
Healthy Places Index Score for Project Location (b)	65.0
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	Applicant provided.
Construction: Construction Phases	Applicant provided schedule
Construction: Trips and VMT	Applicant provided.
Construction: On-Road Fugitive Dust	Travel would be entirely on paved roads
Construction: Architectural Coatings	Based on MBARD Rule 426
Operations: Road Dust	Roadways are paved
Operations: Hearths	No fireplaces or woodstoves proposed.
Operations: Vehicle Data	Applicant provided
Operations: Water and Waste Water	No septic tank use.

Appendix G

Noise Measurement and Analysis Files

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 65.7 - 2022/02/07 12:26:21
- Level Range : 40-100
- SEL : 71.8
- Leq : 41.1
-

No.s	Date Time	(dB)
1	2022/02/07 12:02:50	41.9
2	2022/02/07 12:02:53	39.1
3	2022/02/07 12:02:56	37.1
4	2022/02/07 12:02:59	35.6
5	2022/02/07 12:03:02	35.6
6	2022/02/07 12:03:05	34.5
7	2022/02/07 12:03:08	35.0
8	2022/02/07 12:03:11	35.9
9	2022/02/07 12:03:14	35.3
10	2022/02/07 12:03:17	36.3
11	2022/02/07 12:03:20	34.1
12	2022/02/07 12:03:23	33.9
13	2022/02/07 12:03:26	33.6
14	2022/02/07 12:03:29	33.4
15	2022/02/07 12:03:32	33.8
16	2022/02/07 12:03:35	34.2
17	2022/02/07 12:03:38	33.5
18	2022/02/07 12:03:41	33.1
19	2022/02/07 12:03:44	33.1
20	2022/02/07 12:03:47	34.0
21	2022/02/07 12:03:50	33.5
22	2022/02/07 12:03:53	35.4
23	2022/02/07 12:03:56	34.5
24	2022/02/07 12:03:59	34.3
25	2022/02/07 12:04:02	34.4
26	2022/02/07 12:04:05	39.1
27	2022/02/07 12:04:08	38.4
28	2022/02/07 12:04:11	38.5
29	2022/02/07 12:04:14	38.7
30	2022/02/07 12:04:17	37.1
31	2022/02/07 12:04:20	37.1
32	2022/02/07 12:04:23	36.8
33	2022/02/07 12:04:26	36.8
34	2022/02/07 12:04:29	37.4
35	2022/02/07 12:04:32	36.1
36	2022/02/07 12:04:35	35.9
37	2022/02/07 12:04:38	38.8
38	2022/02/07 12:04:41	41.4
39	2022/02/07 12:04:44	39.8
40	2022/02/07 12:04:47	42.9
41	2022/02/07 12:04:50	43.6
42	2022/02/07 12:04:53	47.8
43	2022/02/07 12:04:56	46.2
44	2022/02/07 12:04:59	47.6
45	2022/02/07 12:05:02	48.9
46	2022/02/07 12:05:05	50.6
47	2022/02/07 12:05:08	52.1
48	2022/02/07 12:05:11	54.6
49	2022/02/07 12:05:14	56.1
50	2022/02/07 12:05:17	58.2
51	2022/02/07 12:05:20	57.8
52	2022/02/07 12:05:23	56.0
53	2022/02/07 12:05:26	53.4
54	2022/02/07 12:05:29	50.6
55	2022/02/07 12:05:32	49.2
56	2022/02/07 12:05:35	47.1
57	2022/02/07 12:05:38	44.1
58	2022/02/07 12:05:41	41.9
59	2022/02/07 12:05:44	42.3
60	2022/02/07 12:05:47	39.6
61	2022/02/07 12:05:50	38.9
62	2022/02/07 12:05:53	38.0
63	2022/02/07 12:05:56	36.7
64	2022/02/07 12:05:59	39.1
65	2022/02/07 12:06:02	38.9
66	2022/02/07 12:06:05	36.8
67	2022/02/07 12:06:08	36.5
68	2022/02/07 12:06:11	35.7
69	2022/02/07 12:06:14	34.0
70	2022/02/07 12:06:17	36.3
71	2022/02/07 12:06:20	36.3
72	2022/02/07 12:06:23	37.2
73	2022/02/07 12:06:26	38.1
74	2022/02/07 12:06:29	35.8
75	2022/02/07 12:06:32	39.5
76	2022/02/07 12:06:35	38.9
77	2022/02/07 12:06:38	35.9
78	2022/02/07 12:06:41	35.5
79	2022/02/07 12:06:44	42.7
80	2022/02/07 12:06:47	36.3
81	2022/02/07 12:06:50	35.9
82	2022/02/07 12:06:53	36.5
83	2022/02/07 12:06:56	36.3
84	2022/02/07 12:06:59	39.4

85	2022/02/07	12:07:02	38.1
86	2022/02/07	12:07:05	37.5
87	2022/02/07	12:07:08	41.6
88	2022/02/07	12:07:11	37.2
89	2022/02/07	12:07:14	35.9
90	2022/02/07	12:07:17	38.4
91	2022/02/07	12:07:20	39.8
92	2022/02/07	12:07:23	37.1
93	2022/02/07	12:07:26	35.0
94	2022/02/07	12:07:29	35.5
95	2022/02/07	12:07:32	35.8
96	2022/02/07	12:07:35	38.8
97	2022/02/07	12:07:38	39.7
98	2022/02/07	12:07:41	35.9
99	2022/02/07	12:07:44	35.1
100	2022/02/07	12:07:47	34.5
101	2022/02/07	12:07:50	36.5
102	2022/02/07	12:07:53	38.7
103	2022/02/07	12:07:56	42.9
104	2022/02/07	12:07:59	37.7
105	2022/02/07	12:08:02	37.8
106	2022/02/07	12:08:05	37.5
107	2022/02/07	12:08:08	36.9
108	2022/02/07	12:08:11	37.4
109	2022/02/07	12:08:14	37.1
110	2022/02/07	12:08:17	36.3
111	2022/02/07	12:08:20	39.1
112	2022/02/07	12:08:23	37.9
113	2022/02/07	12:08:26	36.5
114	2022/02/07	12:08:29	36.4
115	2022/02/07	12:08:32	36.7
116	2022/02/07	12:08:35	36.2
117	2022/02/07	12:08:38	36.0
118	2022/02/07	12:08:41	35.0
119	2022/02/07	12:08:44	35.1
120	2022/02/07	12:08:47	36.9
121	2022/02/07	12:08:50	37.9
122	2022/02/07	12:08:53	36.6
123	2022/02/07	12:08:56	35.4
124	2022/02/07	12:08:59	35.8
125	2022/02/07	12:09:02	35.2
126	2022/02/07	12:09:05	34.8
127	2022/02/07	12:09:08	34.7
128	2022/02/07	12:09:11	35.0
129	2022/02/07	12:09:14	34.4
130	2022/02/07	12:09:17	35.0
131	2022/02/07	12:09:20	35.2
132	2022/02/07	12:09:23	36.0
133	2022/02/07	12:09:26	35.6
134	2022/02/07	12:09:29	36.3
135	2022/02/07	12:09:32	35.0
136	2022/02/07	12:09:35	36.8
137	2022/02/07	12:09:38	36.4
138	2022/02/07	12:09:41	35.4
139	2022/02/07	12:09:44	34.5
140	2022/02/07	12:09:47	35.3
141	2022/02/07	12:09:50	35.7
142	2022/02/07	12:09:53	35.4
143	2022/02/07	12:09:56	35.3
144	2022/02/07	12:09:59	35.0
145	2022/02/07	12:10:02	34.0
146	2022/02/07	12:10:05	35.9
147	2022/02/07	12:10:08	34.5
148	2022/02/07	12:10:11	37.4
149	2022/02/07	12:10:14	39.5
150	2022/02/07	12:10:17	36.4
151	2022/02/07	12:10:20	36.5
152	2022/02/07	12:10:23	35.8
153	2022/02/07	12:10:26	36.1
154	2022/02/07	12:10:29	36.6
155	2022/02/07	12:10:32	36.4
156	2022/02/07	12:10:35	36.1
157	2022/02/07	12:10:38	38.7
158	2022/02/07	12:10:41	37.1
159	2022/02/07	12:10:44	39.3
160	2022/02/07	12:10:47	36.7
161	2022/02/07	12:10:50	39.2
162	2022/02/07	12:10:53	38.0
163	2022/02/07	12:10:56	39.0
164	2022/02/07	12:10:59	37.9
165	2022/02/07	12:11:02	34.9
166	2022/02/07	12:11:05	34.4
167	2022/02/07	12:11:08	34.8
168	2022/02/07	12:11:11	34.3
169	2022/02/07	12:11:14	35.7
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172	2022/02/07	12:11:23	37.0
173	2022/02/07	12:11:26	36.1
174	2022/02/07	12:11:29	38.2
175	2022/02/07	12:11:32	36.2
176	2022/02/07	12:11:35	35.5
177	2022/02/07	12:11:38	35.5
178	2022/02/07	12:11:41	35.1
179	2022/02/07	12:11:44	35.5
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181	2022/02/07	12:11:50	35.2
182	2022/02/07	12:11:53	35.7

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184	2022/02/07	12:11:59	35.8
185	2022/02/07	12:12:02	35.6
186	2022/02/07	12:12:05	35.5
187	2022/02/07	12:12:08	35.3
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189	2022/02/07	12:12:14	35.9
190	2022/02/07	12:12:17	35.7
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195	2022/02/07	12:12:32	35.9
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197	2022/02/07	12:12:38	35.5
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199	2022/02/07	12:12:44	37.0
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201	2022/02/07	12:12:50	40.0
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203	2022/02/07	12:12:56	34.9
204	2022/02/07	12:12:59	34.0
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206	2022/02/07	12:13:05	34.4
207	2022/02/07	12:13:08	33.8
208	2022/02/07	12:13:11	34.6
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212	2022/02/07	12:13:23	38.9
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218	2022/02/07	12:13:41	37.8
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220	2022/02/07	12:13:47	39.0
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222	2022/02/07	12:13:53	38.3
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226	2022/02/07	12:14:05	35.2
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274	2022/02/07	12:16:29	35.0
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315	2022/02/07	12:18:32	35.7
316	2022/02/07	12:18:35	35.9
317	2022/02/07	12:18:38	35.0
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319	2022/02/07	12:18:44	34.8
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337	2022/02/07	12:19:38	35.0
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339	2022/02/07	12:19:44	34.7
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364	2022/02/07	12:20:59	41.4
365	2022/02/07	12:21:02	38.4
366	2022/02/07	12:21:05	36.7
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373	2022/02/07	12:21:26	36.6
374	2022/02/07	12:21:29	40.6
375	2022/02/07	12:21:32	36.8
376	2022/02/07	12:21:35	36.7
377	2022/02/07	12:21:38	36.6
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379	2022/02/07	12:21:44	37.8
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381	2022/02/07	12:21:50	39.0
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384	2022/02/07	12:21:59	36.1
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386	2022/02/07	12:22:05	37.2
387	2022/02/07	12:22:08	36.1
388	2022/02/07	12:22:11	37.0
389	2022/02/07	12:22:14	35.8
390	2022/02/07	12:22:17	36.4
391	2022/02/07	12:22:20	35.8
392	2022/02/07	12:22:23	34.9
393	2022/02/07	12:22:26	35.7
394	2022/02/07	12:22:29	34.5
395	2022/02/07	12:22:32	37.5
396	2022/02/07	12:22:35	35.9
397	2022/02/07	12:22:38	36.9
398	2022/02/07	12:22:41	37.9
399	2022/02/07	12:22:44	37.2
400	2022/02/07	12:22:47	40.3
401	2022/02/07	12:22:50	37.3*
402	2022/02/07	12:22:53	39.3*
403	2022/02/07	12:22:56	46.5*
404	2022/02/07	12:22:59	49.5*
405	2022/02/07	12:23:02	46.3*
406	2022/02/07	12:23:05	49.8*
407	2022/02/07	12:23:08	42.4*
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409	2022/02/07	12:23:14	46.2*
410	2022/02/07	12:23:17	55.5*
411	2022/02/07	12:23:20	47.3*
412	2022/02/07	12:23:23	49.8*
413	2022/02/07	12:23:26	49.6*
414	2022/02/07	12:23:29	59.0*
415	2022/02/07	12:23:32	54.7*
416	2022/02/07	12:23:35	50.2*
417	2022/02/07	12:23:38	49.4*
418	2022/02/07	12:23:41	50.1*
419	2022/02/07	12:23:44	55.5*
420	2022/02/07	12:23:47	49.2*
421	2022/02/07	12:23:50	46.4*
422	2022/02/07	12:23:53	40.8*
423	2022/02/07	12:23:56	51.6*
424	2022/02/07	12:23:59	61.4*
425	2022/02/07	12:24:02	63.0*
426	2022/02/07	12:24:05	58.8*
427	2022/02/07	12:24:08	56.1*
428	2022/02/07	12:24:11	58.7*
429	2022/02/07	12:24:14	53.2*
430	2022/02/07	12:24:17	59.7*
431	2022/02/07	12:24:20	55.0*
432	2022/02/07	12:24:23	48.7*
433	2022/02/07	12:24:26	41.7*
434	2022/02/07	12:24:29	38.1*
435	2022/02/07	12:24:32	48.7*
436	2022/02/07	12:24:35	44.5*
437	2022/02/07	12:24:38	47.2*
438	2022/02/07	12:24:41	64.2*
439	2022/02/07	12:24:44	54.6*
440	2022/02/07	12:24:47	43.1*
441	2022/02/07	12:24:50	63.1*
442	2022/02/07	12:24:53	61.2*
443	2022/02/07	12:24:56	57.4*
444	2022/02/07	12:24:59	56.3*
445	2022/02/07	12:25:02	59.4*
446	2022/02/07	12:25:05	55.3*
447	2022/02/07	12:25:08	50.8*
448	2022/02/07	12:25:11	43.5*
449	2022/02/07	12:25:14	48.9*
450	2022/02/07	12:25:17	52.7*
451	2022/02/07	12:25:20	61.3*
452	2022/02/07	12:25:23	62.0*
453	2022/02/07	12:25:26	52.6*
454	2022/02/07	12:25:29	60.5*
455	2022/02/07	12:25:32	52.6*
456	2022/02/07	12:25:35	50.4*
457	2022/02/07	12:25:38	47.1*
458	2022/02/07	12:25:41	42.4*
459	2022/02/07	12:25:44	55.5*
460	2022/02/07	12:25:47	48.1*
461	2022/02/07	12:25:50	40.0*
462	2022/02/07	12:25:53	45.4*
463	2022/02/07	12:25:56	47.4*
464	2022/02/07	12:25:59	57.2*
465	2022/02/07	12:26:02	59.7*
466	2022/02/07	12:26:05	62.5*
467	2022/02/07	12:26:08	56.8*
468	2022/02/07	12:26:11	62.7*
469	2022/02/07	12:26:14	63.6*
470	2022/02/07	12:26:17	62.7*
471	2022/02/07	12:26:20	63.4*
472	2022/02/07	12:26:23	64.8*
473	2022/02/07	12:26:26	63.4*
474	2022/02/07	12:26:29	53.8

-
Freq Weight : A
-
Time Weight : SLOW
-
Level Range : 40-100
-
Max dB : 68.2 - 2022/02/07 13:01:34
-
Level Range : 40-100
-
SEL : 70.0
-
Leq : 39.0
-

No.s	Date Time	(dB)
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2	2022/02/07 12:36:10	41.2
3	2022/02/07 12:36:13	40.9
4	2022/02/07 12:36:16	37.1
5	2022/02/07 12:36:19	37.5
6	2022/02/07 12:36:22	38.2
7	2022/02/07 12:36:25	39.3
8	2022/02/07 12:36:28	39.5
9	2022/02/07 12:36:31	37.4
10	2022/02/07 12:36:34	38.4
11	2022/02/07 12:36:37	36.4
12	2022/02/07 12:36:40	36.1
13	2022/02/07 12:36:43	35.6
14	2022/02/07 12:36:46	36.5
15	2022/02/07 12:36:49	36.8
16	2022/02/07 12:36:52	36.1
17	2022/02/07 12:36:55	36.8
18	2022/02/07 12:36:58	35.3
19	2022/02/07 12:37:01	36.6
20	2022/02/07 12:37:04	38.2
21	2022/02/07 12:37:07	35.7
22	2022/02/07 12:37:10	36.2
23	2022/02/07 12:37:13	38.7
24	2022/02/07 12:37:16	39.7
25	2022/02/07 12:37:19	38.1
26	2022/02/07 12:37:22	39.5
27	2022/02/07 12:37:25	39.0
28	2022/02/07 12:37:28	39.2
29	2022/02/07 12:37:31	40.0
30	2022/02/07 12:37:34	40.3
31	2022/02/07 12:37:37	39.3
32	2022/02/07 12:37:40	39.1
33	2022/02/07 12:37:43	39.3
34	2022/02/07 12:37:46	37.5
35	2022/02/07 12:37:49	37.9
36	2022/02/07 12:37:52	37.4
37	2022/02/07 12:37:55	38.8
38	2022/02/07 12:37:58	37.0
39	2022/02/07 12:38:01	38.5
40	2022/02/07 12:38:04	36.7
41	2022/02/07 12:38:07	36.4
42	2022/02/07 12:38:10	35.5
43	2022/02/07 12:38:13	35.5
44	2022/02/07 12:38:16	37.4
45	2022/02/07 12:38:19	36.3
46	2022/02/07 12:38:22	38.8
47	2022/02/07 12:38:25	39.8
48	2022/02/07 12:38:28	38.1
49	2022/02/07 12:38:31	38.6
50	2022/02/07 12:38:34	39.3
51	2022/02/07 12:38:37	40.2
52	2022/02/07 12:38:40	40.0
53	2022/02/07 12:38:43	34.9
54	2022/02/07 12:38:46	35.2
55	2022/02/07 12:38:49	34.1
56	2022/02/07 12:38:52	34.1
57	2022/02/07 12:38:55	33.5
58	2022/02/07 12:38:58	33.1
59	2022/02/07 12:39:01	34.0
60	2022/02/07 12:39:04	35.3
61	2022/02/07 12:39:07	37.6
62	2022/02/07 12:39:10	37.1
63	2022/02/07 12:39:13	39.6
64	2022/02/07 12:39:16	38.9
65	2022/02/07 12:39:19	38.5
66	2022/02/07 12:39:22	36.3
67	2022/02/07 12:39:25	35.4
68	2022/02/07 12:39:28	35.0
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70	2022/02/07 12:39:34	34.9
71	2022/02/07 12:39:37	36.2
72	2022/02/07 12:39:40	38.1
73	2022/02/07 12:39:43	39.2
74	2022/02/07 12:39:46	38.1
75	2022/02/07 12:39:49	39.1
76	2022/02/07 12:39:52	38.3
77	2022/02/07 12:39:55	35.8
78	2022/02/07 12:39:58	35.0
79	2022/02/07 12:40:01	34.3
80	2022/02/07 12:40:04	34.0
81	2022/02/07 12:40:07	34.6
82	2022/02/07 12:40:10	34.1
83	2022/02/07 12:40:13	34.4
84	2022/02/07 12:40:16	35.4

85	2022/02/07	12:40:19	34.3
86	2022/02/07	12:40:22	34.5
87	2022/02/07	12:40:25	34.0
88	2022/02/07	12:40:28	34.0
89	2022/02/07	12:40:31	33.5
90	2022/02/07	12:40:34	32.9
91	2022/02/07	12:40:37	32.7
92	2022/02/07	12:40:40	33.7
93	2022/02/07	12:40:43	34.0
94	2022/02/07	12:40:46	32.8
95	2022/02/07	12:40:49	32.3
96	2022/02/07	12:40:52	32.7
97	2022/02/07	12:40:55	32.6
98	2022/02/07	12:40:58	33.4
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101	2022/02/07	12:41:07	33.9
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103	2022/02/07	12:41:13	34.1
104	2022/02/07	12:41:16	34.4
105	2022/02/07	12:41:19	34.2
106	2022/02/07	12:41:22	34.3
107	2022/02/07	12:41:25	34.7
108	2022/02/07	12:41:28	34.6
109	2022/02/07	12:41:31	34.2
110	2022/02/07	12:41:34	34.2
111	2022/02/07	12:41:37	33.8
112	2022/02/07	12:41:40	34.0
113	2022/02/07	12:41:43	34.8
114	2022/02/07	12:41:46	35.1
115	2022/02/07	12:41:49	35.6
116	2022/02/07	12:41:52	35.1
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122	2022/02/07	12:42:10	34.8
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127	2022/02/07	12:42:25	34.1
128	2022/02/07	12:42:28	34.3
129	2022/02/07	12:42:31	33.3
130	2022/02/07	12:42:34	33.5
131	2022/02/07	12:42:37	33.7
132	2022/02/07	12:42:40	34.0
133	2022/02/07	12:42:43	34.0
134	2022/02/07	12:42:46	33.4
135	2022/02/07	12:42:49	33.8
136	2022/02/07	12:42:52	33.5
137	2022/02/07	12:42:55	33.5
138	2022/02/07	12:42:58	35.8
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141	2022/02/07	12:43:07	36.2
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144	2022/02/07	12:43:16	33.0
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210	2022/02/07	12:46:34	37.0
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500	2022/02/07	13:01:04	43.1*
501	2022/02/07	13:01:07	49.0*
502	2022/02/07	13:01:10	47.0*
503	2022/02/07	13:01:13	51.4*
504	2022/02/07	13:01:16	55.1*
505	2022/02/07	13:01:19	56.0*
506	2022/02/07	13:01:22	61.5*
507	2022/02/07	13:01:25	61.8*
508	2022/02/07	13:01:28	67.1*
509	2022/02/07	13:01:31	66.3*
510	2022/02/07	13:01:34	62.9*

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 70.2 - 2022/02/07 13:33:30
- Level Range : 40-100
- SEL : 76.2
- Leq : 45.3
-

No.s	Date Time	(dB)
1	2022/02/07 13:11:32	38.1
2	2022/02/07 13:11:35	35.7
3	2022/02/07 13:11:38	34.4
4	2022/02/07 13:11:41	32.0
5	2022/02/07 13:11:44	31.4
6	2022/02/07 13:11:47	30.3
7	2022/02/07 13:11:50	30.4
8	2022/02/07 13:11:53	30.5
9	2022/02/07 13:11:56	30.6
10	2022/02/07 13:11:59	30.3
11	2022/02/07 13:12:02	30.2
12	2022/02/07 13:12:05	30.2
13	2022/02/07 13:12:08	30.7
14	2022/02/07 13:12:11	30.1
15	2022/02/07 13:12:14	31.0
16	2022/02/07 13:12:17	31.3
17	2022/02/07 13:12:20	30.1
18	2022/02/07 13:12:23	30.3
19	2022/02/07 13:12:26	30.9
20	2022/02/07 13:12:29	30.8
21	2022/02/07 13:12:32	30.4
22	2022/02/07 13:12:35	30.5
23	2022/02/07 13:12:38	31.2
24	2022/02/07 13:12:41	31.1
25	2022/02/07 13:12:44	30.8
26	2022/02/07 13:12:47	30.9
27	2022/02/07 13:12:50	30.8
28	2022/02/07 13:12:53	30.6
29	2022/02/07 13:12:56	30.7
30	2022/02/07 13:12:59	31.9
31	2022/02/07 13:13:02	31.6
32	2022/02/07 13:13:05	31.1
33	2022/02/07 13:13:08	30.9
34	2022/02/07 13:13:11	31.7
35	2022/02/07 13:13:14	31.9
36	2022/02/07 13:13:17	31.9
37	2022/02/07 13:13:20	31.2
38	2022/02/07 13:13:23	31.4
39	2022/02/07 13:13:26	31.4
40	2022/02/07 13:13:29	31.3
41	2022/02/07 13:13:32	31.6
42	2022/02/07 13:13:35	31.8
43	2022/02/07 13:13:38	32.0
44	2022/02/07 13:13:41	31.9
45	2022/02/07 13:13:44	32.3
46	2022/02/07 13:13:47	32.1
47	2022/02/07 13:13:50	32.0
48	2022/02/07 13:13:53	32.2
49	2022/02/07 13:13:56	32.0
50	2022/02/07 13:13:59	31.6
51	2022/02/07 13:14:02	31.5
52	2022/02/07 13:14:05	31.2
53	2022/02/07 13:14:08	31.3
54	2022/02/07 13:14:11	30.9
55	2022/02/07 13:14:14	31.9
56	2022/02/07 13:14:17	31.5
57	2022/02/07 13:14:20	31.6
58	2022/02/07 13:14:23	31.9
59	2022/02/07 13:14:26	32.6
60	2022/02/07 13:14:29	33.4
61	2022/02/07 13:14:32	33.0
62	2022/02/07 13:14:35	32.1
63	2022/02/07 13:14:38	32.9
64	2022/02/07 13:14:41	32.7
65	2022/02/07 13:14:44	32.4
66	2022/02/07 13:14:47	31.8
67	2022/02/07 13:14:50	31.9
68	2022/02/07 13:14:53	32.1
69	2022/02/07 13:14:56	31.6
70	2022/02/07 13:14:59	33.0
71	2022/02/07 13:15:02	33.3
72	2022/02/07 13:15:05	33.2
73	2022/02/07 13:15:08	33.9
74	2022/02/07 13:15:11	33.7
75	2022/02/07 13:15:14	33.4
76	2022/02/07 13:15:17	33.9
77	2022/02/07 13:15:20	35.4
78	2022/02/07 13:15:23	39.3
79	2022/02/07 13:15:26	40.0
80	2022/02/07 13:15:29	36.1
81	2022/02/07 13:15:32	39.6
82	2022/02/07 13:15:35	37.1
83	2022/02/07 13:15:38	37.9
84	2022/02/07 13:15:41	37.9

85	2022/02/07	13:15:44	39.4
86	2022/02/07	13:15:47	39.4
87	2022/02/07	13:15:50	39.6
88	2022/02/07	13:15:53	40.6
89	2022/02/07	13:15:56	38.4
90	2022/02/07	13:15:59	39.2
91	2022/02/07	13:16:02	38.0
92	2022/02/07	13:16:05	41.6
93	2022/02/07	13:16:08	40.0
94	2022/02/07	13:16:11	41.6
95	2022/02/07	13:16:14	42.4
96	2022/02/07	13:16:17	44.3
97	2022/02/07	13:16:20	47.4
98	2022/02/07	13:16:23	44.5
99	2022/02/07	13:16:26	44.4
100	2022/02/07	13:16:29	46.9
101	2022/02/07	13:16:32	47.7
102	2022/02/07	13:16:35	43.3
103	2022/02/07	13:16:38	39.9
104	2022/02/07	13:16:41	36.4
105	2022/02/07	13:16:44	36.4
106	2022/02/07	13:16:47	37.4
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108	2022/02/07	13:16:53	34.4
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111	2022/02/07	13:17:02	33.1
112	2022/02/07	13:17:05	32.8
113	2022/02/07	13:17:08	31.5
114	2022/02/07	13:17:11	31.2
115	2022/02/07	13:17:14	31.6
116	2022/02/07	13:17:17	33.0
117	2022/02/07	13:17:20	32.4
118	2022/02/07	13:17:23	33.4
119	2022/02/07	13:17:26	32.1
120	2022/02/07	13:17:29	32.7
121	2022/02/07	13:17:32	31.8
122	2022/02/07	13:17:35	31.7
123	2022/02/07	13:17:38	31.7
124	2022/02/07	13:17:41	31.2
125	2022/02/07	13:17:44	31.4
126	2022/02/07	13:17:47	51.0
127	2022/02/07	13:17:50	47.7
128	2022/02/07	13:17:53	36.7
129	2022/02/07	13:17:56	32.1
130	2022/02/07	13:17:59	31.7
131	2022/02/07	13:18:02	31.9
132	2022/02/07	13:18:05	32.3
133	2022/02/07	13:18:08	32.5
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135	2022/02/07	13:18:14	31.3
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137	2022/02/07	13:18:20	30.8
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141	2022/02/07	13:18:32	30.8
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151	2022/02/07	13:19:02	30.9
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157	2022/02/07	13:19:20	31.6
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161	2022/02/07	13:19:32	31.2
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166	2022/02/07	13:19:47	30.7
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196	2022/02/07	13:21:17	33.2
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198	2022/02/07	13:21:23	32.8
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201	2022/02/07	13:21:32	37.8
202	2022/02/07	13:21:35	37.8
203	2022/02/07	13:21:38	35.1
204	2022/02/07	13:21:41	34.3
205	2022/02/07	13:21:44	33.1
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207	2022/02/07	13:21:50	31.6
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209	2022/02/07	13:21:56	34.0
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212	2022/02/07	13:22:05	33.6
213	2022/02/07	13:22:08	33.6
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218	2022/02/07	13:22:23	33.1
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220	2022/02/07	13:22:29	33.1
221	2022/02/07	13:22:32	33.2
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239	2022/02/07	13:23:26	35.4
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254	2022/02/07	13:24:11	32.7
255	2022/02/07	13:24:14	33.0
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260	2022/02/07	13:24:29	36.2
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263	2022/02/07	13:24:38	35.8
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280	2022/02/07	13:25:29	30.8

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287	2022/02/07	13:25:50	31.5
288	2022/02/07	13:25:53	30.8
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292	2022/02/07	13:26:05	31.1
293	2022/02/07	13:26:08	31.0
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295	2022/02/07	13:26:14	31.0
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297	2022/02/07	13:26:20	31.3
298	2022/02/07	13:26:23	31.4
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303	2022/02/07	13:26:38	31.8
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309	2022/02/07	13:26:56	31.7
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359	2022/02/07	13:29:26	32.9
360	2022/02/07	13:29:29	35.0
361	2022/02/07	13:29:32	33.7
362	2022/02/07	13:29:35	32.4
363	2022/02/07	13:29:38	32.2
364	2022/02/07	13:29:41	32.7
365	2022/02/07	13:29:44	32.1
366	2022/02/07	13:29:47	32.3
367	2022/02/07	13:29:50	32.1
368	2022/02/07	13:29:53	35.6
369	2022/02/07	13:29:56	31.7
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371	2022/02/07	13:30:02	31.2
372	2022/02/07	13:30:05	31.2
373	2022/02/07	13:30:08	31.1
374	2022/02/07	13:30:11	31.0
375	2022/02/07	13:30:14	31.4
376	2022/02/07	13:30:17	31.3
377	2022/02/07	13:30:20	31.2
378	2022/02/07	13:30:23	31.5

379	2022/02/07	13:30:26	30.9
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381	2022/02/07	13:30:32	40.7
382	2022/02/07	13:30:35	33.1
383	2022/02/07	13:30:38	30.7
384	2022/02/07	13:30:41	30.6
385	2022/02/07	13:30:44	30.8
386	2022/02/07	13:30:47	31.6
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394	2022/02/07	13:31:11	34.0
395	2022/02/07	13:31:14	37.6
396	2022/02/07	13:31:17	38.2
397	2022/02/07	13:31:20	37.7
398	2022/02/07	13:31:23	38.9
399	2022/02/07	13:31:26	34.1
400	2022/02/07	13:31:29	32.6
401	2022/02/07	13:31:32	43.4*
402	2022/02/07	13:31:35	60.2*
403	2022/02/07	13:31:38	55.5*
404	2022/02/07	13:31:41	52.0*
405	2022/02/07	13:31:44	55.8*
406	2022/02/07	13:31:47	54.9*
407	2022/02/07	13:31:50	51.7*
408	2022/02/07	13:31:53	56.5*
409	2022/02/07	13:31:56	61.5*
410	2022/02/07	13:31:59	57.9*
411	2022/02/07	13:32:02	57.1*
412	2022/02/07	13:32:05	60.1*
413	2022/02/07	13:32:08	54.8*
414	2022/02/07	13:32:11	52.0*
415	2022/02/07	13:32:14	59.6*
416	2022/02/07	13:32:17	57.3*
417	2022/02/07	13:32:20	52.3*
418	2022/02/07	13:32:23	60.5*
419	2022/02/07	13:32:26	62.7*
420	2022/02/07	13:32:29	57.1*
421	2022/02/07	13:32:32	60.7*
422	2022/02/07	13:32:35	61.2*
423	2022/02/07	13:32:38	58.3*
424	2022/02/07	13:32:41	56.3*
425	2022/02/07	13:32:44	59.2*
426	2022/02/07	13:32:47	62.5*
427	2022/02/07	13:32:50	62.8*
428	2022/02/07	13:32:53	63.2*
429	2022/02/07	13:32:56	57.3*
430	2022/02/07	13:32:59	58.8*
431	2022/02/07	13:33:02	62.8*
432	2022/02/07	13:33:05	59.3*
433	2022/02/07	13:33:08	61.6*
434	2022/02/07	13:33:11	60.5*
435	2022/02/07	13:33:14	60.7*
436	2022/02/07	13:33:17	66.4*
437	2022/02/07	13:33:20	62.4*
438	2022/02/07	13:33:23	58.0*
439	2022/02/07	13:33:26	61.4*
440	2022/02/07	13:33:29	65.3*
441	2022/02/07	13:33:32	62.8*
442	2022/02/07	13:33:35	61.5*
443	2022/02/07	13:33:38	60.3*
444	2022/02/07	13:33:41	56.3*
445	2022/02/07	13:33:44	60.5*
446	2022/02/07	13:33:47	54.4
447	2022/02/07	13:33:50	59.0
448	2022/02/07	13:33:53	57.1
449	2022/02/07	13:33:56	54.9
450	2022/02/07	13:33:59	57.0
451	2022/02/07	13:34:02	53.5
452	2022/02/07	13:34:05	49.1
453	2022/02/07	13:34:08	53.2
454	2022/02/07	13:34:11	60.4
455	2022/02/07	13:34:14	54.9
456	2022/02/07	13:34:17	59.2
457	2022/02/07	13:34:20	59.5
458	2022/02/07	13:34:23	59.5
459	2022/02/07	13:34:26	60.5
460	2022/02/07	13:34:29	59.7
461	2022/02/07	13:34:32	58.9
462	2022/02/07	13:34:35	63.6
463	2022/02/07	13:34:38	61.9
464	2022/02/07	13:34:41	53.4

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 68.2 - 2022/02/07 13:01:34
- Level Range : 40-100
- SEL : 70.0
- Leq : 39.0
-

No.s	Date Time	(dB)
1	2022/02/07 12:36:07	39.6
2	2022/02/07 12:36:10	41.2
3	2022/02/07 12:36:13	40.9
4	2022/02/07 12:36:16	37.1
5	2022/02/07 12:36:19	37.5
6	2022/02/07 12:36:22	38.2
7	2022/02/07 12:36:25	39.3
8	2022/02/07 12:36:28	39.5
9	2022/02/07 12:36:31	37.4
10	2022/02/07 12:36:34	38.4
11	2022/02/07 12:36:37	36.4
12	2022/02/07 12:36:40	36.1
13	2022/02/07 12:36:43	35.6
14	2022/02/07 12:36:46	36.5
15	2022/02/07 12:36:49	36.8
16	2022/02/07 12:36:52	36.1
17	2022/02/07 12:36:55	36.8
18	2022/02/07 12:36:58	35.3
19	2022/02/07 12:37:01	36.6
20	2022/02/07 12:37:04	38.2
21	2022/02/07 12:37:07	35.7
22	2022/02/07 12:37:10	36.2
23	2022/02/07 12:37:13	38.7
24	2022/02/07 12:37:16	39.7
25	2022/02/07 12:37:19	38.1
26	2022/02/07 12:37:22	39.5
27	2022/02/07 12:37:25	39.0
28	2022/02/07 12:37:28	39.2
29	2022/02/07 12:37:31	40.0
30	2022/02/07 12:37:34	40.3
31	2022/02/07 12:37:37	39.3
32	2022/02/07 12:37:40	39.1
33	2022/02/07 12:37:43	39.3
34	2022/02/07 12:37:46	37.5
35	2022/02/07 12:37:49	37.9
36	2022/02/07 12:37:52	37.4
37	2022/02/07 12:37:55	38.8
38	2022/02/07 12:37:58	37.0
39	2022/02/07 12:38:01	38.5
40	2022/02/07 12:38:04	36.7
41	2022/02/07 12:38:07	36.4
42	2022/02/07 12:38:10	35.5
43	2022/02/07 12:38:13	35.5
44	2022/02/07 12:38:16	37.4
45	2022/02/07 12:38:19	36.3
46	2022/02/07 12:38:22	38.8
47	2022/02/07 12:38:25	39.8
48	2022/02/07 12:38:28	38.1
49	2022/02/07 12:38:31	38.6
50	2022/02/07 12:38:34	39.3
51	2022/02/07 12:38:37	40.2
52	2022/02/07 12:38:40	40.0
53	2022/02/07 12:38:43	34.9
54	2022/02/07 12:38:46	35.2
55	2022/02/07 12:38:49	34.1
56	2022/02/07 12:38:52	34.1
57	2022/02/07 12:38:55	33.5
58	2022/02/07 12:38:58	33.1
59	2022/02/07 12:39:01	34.0
60	2022/02/07 12:39:04	35.3
61	2022/02/07 12:39:07	37.6
62	2022/02/07 12:39:10	37.1
63	2022/02/07 12:39:13	39.6
64	2022/02/07 12:39:16	38.9
65	2022/02/07 12:39:19	38.5
66	2022/02/07 12:39:22	36.3
67	2022/02/07 12:39:25	35.4
68	2022/02/07 12:39:28	35.0
69	2022/02/07 12:39:31	35.3
70	2022/02/07 12:39:34	34.9
71	2022/02/07 12:39:37	36.2
72	2022/02/07 12:39:40	38.1
73	2022/02/07 12:39:43	39.2
74	2022/02/07 12:39:46	38.1
75	2022/02/07 12:39:49	39.1
76	2022/02/07 12:39:52	38.3
77	2022/02/07 12:39:55	35.8
78	2022/02/07 12:39:58	35.0
79	2022/02/07 12:40:01	34.3
80	2022/02/07 12:40:04	34.0
81	2022/02/07 12:40:07	34.6
82	2022/02/07 12:40:10	34.1
83	2022/02/07 12:40:13	34.4
84	2022/02/07 12:40:16	35.4

85	2022/02/07	12:40:19	34.3
86	2022/02/07	12:40:22	34.5
87	2022/02/07	12:40:25	34.0
88	2022/02/07	12:40:28	34.0
89	2022/02/07	12:40:31	33.5
90	2022/02/07	12:40:34	32.9
91	2022/02/07	12:40:37	32.7
92	2022/02/07	12:40:40	33.7
93	2022/02/07	12:40:43	34.0
94	2022/02/07	12:40:46	32.8
95	2022/02/07	12:40:49	32.3
96	2022/02/07	12:40:52	32.7
97	2022/02/07	12:40:55	32.6
98	2022/02/07	12:40:58	33.4
99	2022/02/07	12:41:01	32.7
100	2022/02/07	12:41:04	32.6
101	2022/02/07	12:41:07	33.9
102	2022/02/07	12:41:10	34.1
103	2022/02/07	12:41:13	34.1
104	2022/02/07	12:41:16	34.4
105	2022/02/07	12:41:19	34.2
106	2022/02/07	12:41:22	34.3
107	2022/02/07	12:41:25	34.7
108	2022/02/07	12:41:28	34.6
109	2022/02/07	12:41:31	34.2
110	2022/02/07	12:41:34	34.2
111	2022/02/07	12:41:37	33.8
112	2022/02/07	12:41:40	34.0
113	2022/02/07	12:41:43	34.8
114	2022/02/07	12:41:46	35.1
115	2022/02/07	12:41:49	35.6
116	2022/02/07	12:41:52	35.1
117	2022/02/07	12:41:55	36.4
118	2022/02/07	12:41:58	35.6
119	2022/02/07	12:42:01	35.1
120	2022/02/07	12:42:04	36.4
121	2022/02/07	12:42:07	35.2
122	2022/02/07	12:42:10	34.8
123	2022/02/07	12:42:13	34.3
124	2022/02/07	12:42:16	34.1
125	2022/02/07	12:42:19	34.3
126	2022/02/07	12:42:22	34.6
127	2022/02/07	12:42:25	34.1
128	2022/02/07	12:42:28	34.3
129	2022/02/07	12:42:31	33.3
130	2022/02/07	12:42:34	33.5
131	2022/02/07	12:42:37	33.7
132	2022/02/07	12:42:40	34.0
133	2022/02/07	12:42:43	34.0
134	2022/02/07	12:42:46	33.4
135	2022/02/07	12:42:49	33.8
136	2022/02/07	12:42:52	33.5
137	2022/02/07	12:42:55	33.5
138	2022/02/07	12:42:58	35.8
139	2022/02/07	12:43:01	34.3
140	2022/02/07	12:43:04	34.6
141	2022/02/07	12:43:07	36.2
142	2022/02/07	12:43:10	34.7
143	2022/02/07	12:43:13	34.5
144	2022/02/07	12:43:16	33.0
145	2022/02/07	12:43:19	34.3
146	2022/02/07	12:43:22	35.6
147	2022/02/07	12:43:25	34.1
148	2022/02/07	12:43:28	34.9
149	2022/02/07	12:43:31	35.8
150	2022/02/07	12:43:34	35.7
151	2022/02/07	12:43:37	36.6
152	2022/02/07	12:43:40	36.3
153	2022/02/07	12:43:43	35.9
154	2022/02/07	12:43:46	35.2
155	2022/02/07	12:43:49	36.0
156	2022/02/07	12:43:52	37.6
157	2022/02/07	12:43:55	34.8
158	2022/02/07	12:43:58	35.1
159	2022/02/07	12:44:01	35.9
160	2022/02/07	12:44:04	35.4
161	2022/02/07	12:44:07	35.5
162	2022/02/07	12:44:10	34.2
163	2022/02/07	12:44:13	36.7
164	2022/02/07	12:44:16	37.0
165	2022/02/07	12:44:19	35.8
166	2022/02/07	12:44:22	36.2
167	2022/02/07	12:44:25	37.0
168	2022/02/07	12:44:28	38.0
169	2022/02/07	12:44:31	36.7
170	2022/02/07	12:44:34	36.1
171	2022/02/07	12:44:37	38.1
172	2022/02/07	12:44:40	37.6
173	2022/02/07	12:44:43	36.0
174	2022/02/07	12:44:46	37.2
175	2022/02/07	12:44:49	35.1
176	2022/02/07	12:44:52	36.3
177	2022/02/07	12:44:55	38.6
178	2022/02/07	12:44:58	36.6
179	2022/02/07	12:45:01	37.4
180	2022/02/07	12:45:04	36.0
181	2022/02/07	12:45:07	37.2
182	2022/02/07	12:45:10	37.4

183	2022/02/07	12:45:13	38.7
184	2022/02/07	12:45:16	37.9
185	2022/02/07	12:45:19	35.1
186	2022/02/07	12:45:22	34.9
187	2022/02/07	12:45:25	36.9
188	2022/02/07	12:45:28	37.7
189	2022/02/07	12:45:31	37.0
190	2022/02/07	12:45:34	36.9
191	2022/02/07	12:45:37	37.8
192	2022/02/07	12:45:40	36.1
193	2022/02/07	12:45:43	36.2
194	2022/02/07	12:45:46	36.7
195	2022/02/07	12:45:49	36.1
196	2022/02/07	12:45:52	36.5
197	2022/02/07	12:45:55	37.0
198	2022/02/07	12:45:58	35.8
199	2022/02/07	12:46:01	36.6
200	2022/02/07	12:46:04	35.5
201	2022/02/07	12:46:07	36.6
202	2022/02/07	12:46:10	37.4
203	2022/02/07	12:46:13	36.3
204	2022/02/07	12:46:16	35.6
205	2022/02/07	12:46:19	36.1
206	2022/02/07	12:46:22	37.2
207	2022/02/07	12:46:25	36.1
208	2022/02/07	12:46:28	35.0
209	2022/02/07	12:46:31	35.8
210	2022/02/07	12:46:34	37.0
211	2022/02/07	12:46:37	36.3
212	2022/02/07	12:46:40	35.4
213	2022/02/07	12:46:43	35.1
214	2022/02/07	12:46:46	34.6
215	2022/02/07	12:46:49	34.9
216	2022/02/07	12:46:52	34.3
217	2022/02/07	12:46:55	34.5
218	2022/02/07	12:46:58	35.1
219	2022/02/07	12:47:01	35.8
220	2022/02/07	12:47:04	36.5
221	2022/02/07	12:47:07	38.0
222	2022/02/07	12:47:10	41.9
223	2022/02/07	12:47:13	39.9
224	2022/02/07	12:47:16	36.8
225	2022/02/07	12:47:19	35.8
226	2022/02/07	12:47:22	38.4
227	2022/02/07	12:47:25	36.6
228	2022/02/07	12:47:28	36.9
229	2022/02/07	12:47:31	37.1
230	2022/02/07	12:47:34	37.4
231	2022/02/07	12:47:37	37.2
232	2022/02/07	12:47:40	36.9
233	2022/02/07	12:47:43	37.3
234	2022/02/07	12:47:46	36.2
235	2022/02/07	12:47:49	36.6
236	2022/02/07	12:47:52	38.5
237	2022/02/07	12:47:55	40.7
238	2022/02/07	12:47:58	37.2
239	2022/02/07	12:48:01	36.0
240	2022/02/07	12:48:04	34.9
241	2022/02/07	12:48:07	36.0
242	2022/02/07	12:48:10	37.7
243	2022/02/07	12:48:13	36.0
244	2022/02/07	12:48:16	35.3
245	2022/02/07	12:48:19	36.4
246	2022/02/07	12:48:22	36.5
247	2022/02/07	12:48:25	36.3
248	2022/02/07	12:48:28	35.8
249	2022/02/07	12:48:31	36.6
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251	2022/02/07	12:48:37	37.2
252	2022/02/07	12:48:40	36.0
253	2022/02/07	12:48:43	36.7
254	2022/02/07	12:48:46	35.5
255	2022/02/07	12:48:49	36.6
256	2022/02/07	12:48:52	38.0
257	2022/02/07	12:48:55	37.4
258	2022/02/07	12:48:58	37.2
259	2022/02/07	12:49:01	37.1
260	2022/02/07	12:49:04	38.9
261	2022/02/07	12:49:07	37.9
262	2022/02/07	12:49:10	39.3
263	2022/02/07	12:49:13	38.1
264	2022/02/07	12:49:16	40.5
265	2022/02/07	12:49:19	38.3
266	2022/02/07	12:49:22	36.6
267	2022/02/07	12:49:25	36.8
268	2022/02/07	12:49:28	37.0
269	2022/02/07	12:49:31	37.6
270	2022/02/07	12:49:34	38.3
271	2022/02/07	12:49:37	37.7
272	2022/02/07	12:49:40	38.1
273	2022/02/07	12:49:43	38.6
274	2022/02/07	12:49:46	37.9
275	2022/02/07	12:49:49	38.5
276	2022/02/07	12:49:52	38.2
277	2022/02/07	12:49:55	41.6
278	2022/02/07	12:49:58	38.0
279	2022/02/07	12:50:01	37.0
280	2022/02/07	12:50:04	37.0

281	2022/02/07	12:50:07	37.1
282	2022/02/07	12:50:10	37.8
283	2022/02/07	12:50:13	36.9
284	2022/02/07	12:50:16	37.9
285	2022/02/07	12:50:19	38.5
286	2022/02/07	12:50:22	37.6
287	2022/02/07	12:50:25	37.4
288	2022/02/07	12:50:28	37.6
289	2022/02/07	12:50:31	38.2
290	2022/02/07	12:50:34	36.9
291	2022/02/07	12:50:37	37.0
292	2022/02/07	12:50:40	37.2
293	2022/02/07	12:50:43	37.3
294	2022/02/07	12:50:46	39.9
295	2022/02/07	12:50:49	39.4
296	2022/02/07	12:50:52	39.1
297	2022/02/07	12:50:55	39.3
298	2022/02/07	12:50:58	38.0
299	2022/02/07	12:51:01	37.9
300	2022/02/07	12:51:04	40.0
301	2022/02/07	12:51:07	39.3
302	2022/02/07	12:51:10	37.8
303	2022/02/07	12:51:13	37.5
304	2022/02/07	12:51:16	38.0
305	2022/02/07	12:51:19	39.5
306	2022/02/07	12:51:22	37.9
307	2022/02/07	12:51:25	38.3
308	2022/02/07	12:51:28	39.4
309	2022/02/07	12:51:31	39.7
310	2022/02/07	12:51:34	39.9
311	2022/02/07	12:51:37	39.8
312	2022/02/07	12:51:40	40.6
313	2022/02/07	12:51:43	40.2
314	2022/02/07	12:51:46	39.6
315	2022/02/07	12:51:49	37.0
316	2022/02/07	12:51:52	37.0
317	2022/02/07	12:51:55	37.4
318	2022/02/07	12:51:58	36.4
319	2022/02/07	12:52:01	36.7
320	2022/02/07	12:52:04	36.9
321	2022/02/07	12:52:07	39.8
322	2022/02/07	12:52:10	37.7
323	2022/02/07	12:52:13	36.0
324	2022/02/07	12:52:16	35.6
325	2022/02/07	12:52:19	37.3
326	2022/02/07	12:52:22	38.3
327	2022/02/07	12:52:25	39.8
328	2022/02/07	12:52:28	38.8
329	2022/02/07	12:52:31	37.5
330	2022/02/07	12:52:34	37.4
331	2022/02/07	12:52:37	37.2
332	2022/02/07	12:52:40	37.1
333	2022/02/07	12:52:43	37.1
334	2022/02/07	12:52:46	37.4
335	2022/02/07	12:52:49	38.2
336	2022/02/07	12:52:52	39.6
337	2022/02/07	12:52:55	38.1
338	2022/02/07	12:52:58	38.8
339	2022/02/07	12:53:01	38.7
340	2022/02/07	12:53:04	37.5
341	2022/02/07	12:53:07	35.5
342	2022/02/07	12:53:10	35.2
343	2022/02/07	12:53:13	38.5
344	2022/02/07	12:53:16	38.9
345	2022/02/07	12:53:19	39.9
346	2022/02/07	12:53:22	39.1
347	2022/02/07	12:53:25	38.2
348	2022/02/07	12:53:28	38.7
349	2022/02/07	12:53:31	38.2
350	2022/02/07	12:53:34	38.5
351	2022/02/07	12:53:37	43.6
352	2022/02/07	12:53:40	40.7
353	2022/02/07	12:53:43	44.0
354	2022/02/07	12:53:46	41.0
355	2022/02/07	12:53:49	41.5
356	2022/02/07	12:53:52	44.9
357	2022/02/07	12:53:55	42.3
358	2022/02/07	12:53:58	42.5
359	2022/02/07	12:54:01	42.9
360	2022/02/07	12:54:04	41.8
361	2022/02/07	12:54:07	44.0
362	2022/02/07	12:54:10	44.4
363	2022/02/07	12:54:13	44.3
364	2022/02/07	12:54:16	45.2
365	2022/02/07	12:54:19	43.2
366	2022/02/07	12:54:22	49.4
367	2022/02/07	12:54:25	45.1
368	2022/02/07	12:54:28	46.9
369	2022/02/07	12:54:31	44.5
370	2022/02/07	12:54:34	45.7
371	2022/02/07	12:54:37	42.2
372	2022/02/07	12:54:40	42.6
373	2022/02/07	12:54:43	42.4
374	2022/02/07	12:54:46	43.3
375	2022/02/07	12:54:49	41.7
376	2022/02/07	12:54:52	44.3
377	2022/02/07	12:54:55	43.5
378	2022/02/07	12:54:58	41.1

379	2022/02/07	12:55:01	39.2
380	2022/02/07	12:55:04	40.2
381	2022/02/07	12:55:07	41.1
382	2022/02/07	12:55:10	41.9
383	2022/02/07	12:55:13	40.7
384	2022/02/07	12:55:16	41.4
385	2022/02/07	12:55:19	39.6
386	2022/02/07	12:55:22	40.7
387	2022/02/07	12:55:25	41.1
388	2022/02/07	12:55:28	39.5
389	2022/02/07	12:55:31	38.3
390	2022/02/07	12:55:34	37.8
391	2022/02/07	12:55:37	37.5
392	2022/02/07	12:55:40	37.2
393	2022/02/07	12:55:43	36.4
394	2022/02/07	12:55:46	36.0
395	2022/02/07	12:55:49	37.9
396	2022/02/07	12:55:52	37.2
397	2022/02/07	12:55:55	37.4
398	2022/02/07	12:55:58	36.5
399	2022/02/07	12:56:01	36.7
400	2022/02/07	12:56:04	37.9
401	2022/02/07	12:56:07	37.6
402	2022/02/07	12:56:10	38.5
403	2022/02/07	12:56:13	37.0
404	2022/02/07	12:56:16	36.0
405	2022/02/07	12:56:19	36.4
406	2022/02/07	12:56:22	36.0
407	2022/02/07	12:56:25	39.0
408	2022/02/07	12:56:28	36.5
409	2022/02/07	12:56:31	38.3
410	2022/02/07	12:56:34	37.1
411	2022/02/07	12:56:37	37.3
412	2022/02/07	12:56:40	37.3
413	2022/02/07	12:56:43	36.5
414	2022/02/07	12:56:46	38.1
415	2022/02/07	12:56:49	39.8
416	2022/02/07	12:56:52	40.5
417	2022/02/07	12:56:55	43.9
418	2022/02/07	12:56:58	42.2
419	2022/02/07	12:57:01	47.4
420	2022/02/07	12:57:04	48.4
421	2022/02/07	12:57:07	51.9
422	2022/02/07	12:57:10	41.8*
423	2022/02/07	12:57:13	53.0*
424	2022/02/07	12:57:16	62.2*
425	2022/02/07	12:57:19	58.1*
426	2022/02/07	12:57:22	54.1*
427	2022/02/07	12:57:25	58.2*
428	2022/02/07	12:57:28	57.0*
429	2022/02/07	12:57:31	58.1*
430	2022/02/07	12:57:34	54.6*
431	2022/02/07	12:57:37	53.9*
432	2022/02/07	12:57:40	59.7*
433	2022/02/07	12:57:43	58.4*
434	2022/02/07	12:57:46	60.7*
435	2022/02/07	12:57:49	53.8*
436	2022/02/07	12:57:52	46.8*
437	2022/02/07	12:57:55	51.9*
438	2022/02/07	12:57:58	52.9*
439	2022/02/07	12:58:01	59.5*
440	2022/02/07	12:58:04	55.9*
441	2022/02/07	12:58:07	59.5*
442	2022/02/07	12:58:10	56.2*
443	2022/02/07	12:58:13	59.9*
444	2022/02/07	12:58:16	60.3*
445	2022/02/07	12:58:19	54.9*
446	2022/02/07	12:58:22	61.7*
447	2022/02/07	12:58:25	55.6*
448	2022/02/07	12:58:28	46.0*
449	2022/02/07	12:58:31	54.2*
450	2022/02/07	12:58:34	47.7*
451	2022/02/07	12:58:37	53.3*
452	2022/02/07	12:58:40	51.2*
453	2022/02/07	12:58:43	51.5*
454	2022/02/07	12:58:46	47.9*
455	2022/02/07	12:58:49	38.4*
456	2022/02/07	12:58:52	52.8*
457	2022/02/07	12:58:55	48.1*
458	2022/02/07	12:58:58	60.6*
459	2022/02/07	12:59:01	52.8*
460	2022/02/07	12:59:04	46.6*
461	2022/02/07	12:59:07	54.2*
462	2022/02/07	12:59:10	54.9*
463	2022/02/07	12:59:13	55.2*
464	2022/02/07	12:59:16	53.2*
465	2022/02/07	12:59:19	48.1*
466	2022/02/07	12:59:22	46.9*
467	2022/02/07	12:59:25	54.4*
468	2022/02/07	12:59:28	59.7*
469	2022/02/07	12:59:31	54.8*
470	2022/02/07	12:59:34	49.3*
471	2022/02/07	12:59:37	55.9*
472	2022/02/07	12:59:40	49.2*
473	2022/02/07	12:59:43	44.8*
474	2022/02/07	12:59:46	42.0*
475	2022/02/07	12:59:49	41.3*
476	2022/02/07	12:59:52	42.4*

477	2022/02/07	12:59:55	47.5*
478	2022/02/07	12:59:58	50.0*
479	2022/02/07	13:00:01	53.3*
480	2022/02/07	13:00:04	56.8*
481	2022/02/07	13:00:07	57.0*
482	2022/02/07	13:00:10	48.2*
483	2022/02/07	13:00:13	49.2*
484	2022/02/07	13:00:16	43.5*
485	2022/02/07	13:00:19	38.2*
486	2022/02/07	13:00:22	42.7*
487	2022/02/07	13:00:25	42.1*
488	2022/02/07	13:00:28	43.2*
489	2022/02/07	13:00:31	37.7*
490	2022/02/07	13:00:34	47.1*
491	2022/02/07	13:00:37	41.3*
492	2022/02/07	13:00:40	47.8*
493	2022/02/07	13:00:43	47.4*
494	2022/02/07	13:00:46	45.1*
495	2022/02/07	13:00:49	47.9*
496	2022/02/07	13:00:52	48.3*
497	2022/02/07	13:00:55	45.8*
498	2022/02/07	13:00:58	49.6*
499	2022/02/07	13:01:01	44.2*
500	2022/02/07	13:01:04	43.1*
501	2022/02/07	13:01:07	49.0*
502	2022/02/07	13:01:10	47.0*
503	2022/02/07	13:01:13	51.4*
504	2022/02/07	13:01:16	55.1*
505	2022/02/07	13:01:19	56.0*
506	2022/02/07	13:01:22	61.5*
507	2022/02/07	13:01:25	61.8*
508	2022/02/07	13:01:28	67.1*
509	2022/02/07	13:01:31	66.3*
510	2022/02/07	13:01:34	62.9*

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 70.2 - 2022/02/07 13:33:30
- Level Range : 40-100
- SEL : 76.2
- Leq : 45.3
-

No.s	Date Time	(dB)
1	2022/02/07 13:11:32	38.1
2	2022/02/07 13:11:35	35.7
3	2022/02/07 13:11:38	34.4
4	2022/02/07 13:11:41	32.0
5	2022/02/07 13:11:44	31.4
6	2022/02/07 13:11:47	30.3
7	2022/02/07 13:11:50	30.4
8	2022/02/07 13:11:53	30.5
9	2022/02/07 13:11:56	30.6
10	2022/02/07 13:11:59	30.3
11	2022/02/07 13:12:02	30.2
12	2022/02/07 13:12:05	30.2
13	2022/02/07 13:12:08	30.7
14	2022/02/07 13:12:11	30.1
15	2022/02/07 13:12:14	31.0
16	2022/02/07 13:12:17	31.3
17	2022/02/07 13:12:20	30.1
18	2022/02/07 13:12:23	30.3
19	2022/02/07 13:12:26	30.9
20	2022/02/07 13:12:29	30.8
21	2022/02/07 13:12:32	30.4
22	2022/02/07 13:12:35	30.5
23	2022/02/07 13:12:38	31.2
24	2022/02/07 13:12:41	31.1
25	2022/02/07 13:12:44	30.8
26	2022/02/07 13:12:47	30.9
27	2022/02/07 13:12:50	30.8
28	2022/02/07 13:12:53	30.6
29	2022/02/07 13:12:56	30.7
30	2022/02/07 13:12:59	31.9
31	2022/02/07 13:13:02	31.6
32	2022/02/07 13:13:05	31.1
33	2022/02/07 13:13:08	30.9
34	2022/02/07 13:13:11	31.7
35	2022/02/07 13:13:14	31.9
36	2022/02/07 13:13:17	31.9
37	2022/02/07 13:13:20	31.2
38	2022/02/07 13:13:23	31.4
39	2022/02/07 13:13:26	31.4
40	2022/02/07 13:13:29	31.3
41	2022/02/07 13:13:32	31.6
42	2022/02/07 13:13:35	31.8
43	2022/02/07 13:13:38	32.0
44	2022/02/07 13:13:41	31.9
45	2022/02/07 13:13:44	32.3
46	2022/02/07 13:13:47	32.1
47	2022/02/07 13:13:50	32.0
48	2022/02/07 13:13:53	32.2
49	2022/02/07 13:13:56	32.0
50	2022/02/07 13:13:59	31.6
51	2022/02/07 13:14:02	31.5
52	2022/02/07 13:14:05	31.2
53	2022/02/07 13:14:08	31.3
54	2022/02/07 13:14:11	30.9
55	2022/02/07 13:14:14	31.9
56	2022/02/07 13:14:17	31.5
57	2022/02/07 13:14:20	31.6
58	2022/02/07 13:14:23	31.9
59	2022/02/07 13:14:26	32.6
60	2022/02/07 13:14:29	33.4
61	2022/02/07 13:14:32	33.0
62	2022/02/07 13:14:35	32.1
63	2022/02/07 13:14:38	32.9
64	2022/02/07 13:14:41	32.7
65	2022/02/07 13:14:44	32.4
66	2022/02/07 13:14:47	31.8
67	2022/02/07 13:14:50	31.9
68	2022/02/07 13:14:53	32.1
69	2022/02/07 13:14:56	31.6
70	2022/02/07 13:14:59	33.0
71	2022/02/07 13:15:02	33.3
72	2022/02/07 13:15:05	33.2
73	2022/02/07 13:15:08	33.9
74	2022/02/07 13:15:11	33.7
75	2022/02/07 13:15:14	33.4
76	2022/02/07 13:15:17	33.9
77	2022/02/07 13:15:20	35.4
78	2022/02/07 13:15:23	39.3
79	2022/02/07 13:15:26	40.0
80	2022/02/07 13:15:29	36.1
81	2022/02/07 13:15:32	39.6
82	2022/02/07 13:15:35	37.1
83	2022/02/07 13:15:38	37.9
84	2022/02/07 13:15:41	37.9

85	2022/02/07	13:15:44	39.4
86	2022/02/07	13:15:47	39.4
87	2022/02/07	13:15:50	39.6
88	2022/02/07	13:15:53	40.6
89	2022/02/07	13:15:56	38.4
90	2022/02/07	13:15:59	39.2
91	2022/02/07	13:16:02	38.0
92	2022/02/07	13:16:05	41.6
93	2022/02/07	13:16:08	40.0
94	2022/02/07	13:16:11	41.6
95	2022/02/07	13:16:14	42.4
96	2022/02/07	13:16:17	44.3
97	2022/02/07	13:16:20	47.4
98	2022/02/07	13:16:23	44.5
99	2022/02/07	13:16:26	44.4
100	2022/02/07	13:16:29	46.9
101	2022/02/07	13:16:32	47.7
102	2022/02/07	13:16:35	43.3
103	2022/02/07	13:16:38	39.9
104	2022/02/07	13:16:41	36.4
105	2022/02/07	13:16:44	36.4
106	2022/02/07	13:16:47	37.4
107	2022/02/07	13:16:50	34.6
108	2022/02/07	13:16:53	34.4
109	2022/02/07	13:16:56	33.0
110	2022/02/07	13:16:59	32.3
111	2022/02/07	13:17:02	33.1
112	2022/02/07	13:17:05	32.8
113	2022/02/07	13:17:08	31.5
114	2022/02/07	13:17:11	31.2
115	2022/02/07	13:17:14	31.6
116	2022/02/07	13:17:17	33.0
117	2022/02/07	13:17:20	32.4
118	2022/02/07	13:17:23	33.4
119	2022/02/07	13:17:26	32.1
120	2022/02/07	13:17:29	32.7
121	2022/02/07	13:17:32	31.8
122	2022/02/07	13:17:35	31.7
123	2022/02/07	13:17:38	31.7
124	2022/02/07	13:17:41	31.2
125	2022/02/07	13:17:44	31.4
126	2022/02/07	13:17:47	51.0
127	2022/02/07	13:17:50	47.7
128	2022/02/07	13:17:53	36.7
129	2022/02/07	13:17:56	32.1
130	2022/02/07	13:17:59	31.7
131	2022/02/07	13:18:02	31.9
132	2022/02/07	13:18:05	32.3
133	2022/02/07	13:18:08	32.5
134	2022/02/07	13:18:11	31.9
135	2022/02/07	13:18:14	31.3
136	2022/02/07	13:18:17	30.9
137	2022/02/07	13:18:20	30.8
138	2022/02/07	13:18:23	30.9
139	2022/02/07	13:18:26	30.6
140	2022/02/07	13:18:29	30.5
141	2022/02/07	13:18:32	30.8
142	2022/02/07	13:18:35	31.0
143	2022/02/07	13:18:38	31.1
144	2022/02/07	13:18:41	31.2
145	2022/02/07	13:18:44	30.4
146	2022/02/07	13:18:47	30.8
147	2022/02/07	13:18:50	30.7
148	2022/02/07	13:18:53	30.4
149	2022/02/07	13:18:56	30.5
150	2022/02/07	13:18:59	30.9
151	2022/02/07	13:19:02	30.9
152	2022/02/07	13:19:05	30.8
153	2022/02/07	13:19:08	31.0
154	2022/02/07	13:19:11	31.2
155	2022/02/07	13:19:14	31.3
156	2022/02/07	13:19:17	32.1
157	2022/02/07	13:19:20	31.6
158	2022/02/07	13:19:23	30.9
159	2022/02/07	13:19:26	30.8
160	2022/02/07	13:19:29	31.3
161	2022/02/07	13:19:32	31.2
162	2022/02/07	13:19:35	31.0
163	2022/02/07	13:19:38	31.1
164	2022/02/07	13:19:41	30.7
165	2022/02/07	13:19:44	30.5
166	2022/02/07	13:19:47	30.7
167	2022/02/07	13:19:50	30.8
168	2022/02/07	13:19:53	31.2
169	2022/02/07	13:19:56	30.9
170	2022/02/07	13:19:59	31.1
171	2022/02/07	13:20:02	31.3
172	2022/02/07	13:20:05	31.6
173	2022/02/07	13:20:08	31.9
174	2022/02/07	13:20:11	31.4
175	2022/02/07	13:20:14	31.7
176	2022/02/07	13:20:17	32.1
177	2022/02/07	13:20:20	32.3
178	2022/02/07	13:20:23	31.9
179	2022/02/07	13:20:26	31.9
180	2022/02/07	13:20:29	31.8
181	2022/02/07	13:20:32	31.9
182	2022/02/07	13:20:35	33.0

183	2022/02/07	13:20:38	32.7
184	2022/02/07	13:20:41	33.6
185	2022/02/07	13:20:44	32.9
186	2022/02/07	13:20:47	32.1
187	2022/02/07	13:20:50	33.0
188	2022/02/07	13:20:53	31.4
189	2022/02/07	13:20:56	30.8
190	2022/02/07	13:20:59	30.8
191	2022/02/07	13:21:02	30.6
192	2022/02/07	13:21:05	30.8
193	2022/02/07	13:21:08	30.9
194	2022/02/07	13:21:11	31.4
195	2022/02/07	13:21:14	32.2
196	2022/02/07	13:21:17	33.2
197	2022/02/07	13:21:20	33.3
198	2022/02/07	13:21:23	32.8
199	2022/02/07	13:21:26	33.4
200	2022/02/07	13:21:29	35.5
201	2022/02/07	13:21:32	37.8
202	2022/02/07	13:21:35	37.8
203	2022/02/07	13:21:38	35.1
204	2022/02/07	13:21:41	34.3
205	2022/02/07	13:21:44	33.1
206	2022/02/07	13:21:47	32.1
207	2022/02/07	13:21:50	31.6
208	2022/02/07	13:21:53	32.1
209	2022/02/07	13:21:56	34.0
210	2022/02/07	13:21:59	32.5
211	2022/02/07	13:22:02	32.2
212	2022/02/07	13:22:05	33.6
213	2022/02/07	13:22:08	33.6
214	2022/02/07	13:22:11	32.8
215	2022/02/07	13:22:14	31.7
216	2022/02/07	13:22:17	32.2
217	2022/02/07	13:22:20	31.8
218	2022/02/07	13:22:23	33.1
219	2022/02/07	13:22:26	33.1
220	2022/02/07	13:22:29	33.1
221	2022/02/07	13:22:32	33.2
222	2022/02/07	13:22:35	33.7
223	2022/02/07	13:22:38	32.6
224	2022/02/07	13:22:41	34.5
225	2022/02/07	13:22:44	33.0
226	2022/02/07	13:22:47	32.9
227	2022/02/07	13:22:50	32.9
228	2022/02/07	13:22:53	34.1
229	2022/02/07	13:22:56	35.2
230	2022/02/07	13:22:59	33.5
231	2022/02/07	13:23:02	35.1
232	2022/02/07	13:23:05	38.8
233	2022/02/07	13:23:08	37.3
234	2022/02/07	13:23:11	41.6
235	2022/02/07	13:23:14	41.6
236	2022/02/07	13:23:17	40.3
237	2022/02/07	13:23:20	39.2
238	2022/02/07	13:23:23	38.4
239	2022/02/07	13:23:26	35.4
240	2022/02/07	13:23:29	33.3
241	2022/02/07	13:23:32	33.8
242	2022/02/07	13:23:35	35.7
243	2022/02/07	13:23:38	33.4
244	2022/02/07	13:23:41	34.7
245	2022/02/07	13:23:44	35.3
246	2022/02/07	13:23:47	35.3
247	2022/02/07	13:23:50	33.0
248	2022/02/07	13:23:53	33.4
249	2022/02/07	13:23:56	33.9
250	2022/02/07	13:23:59	32.8
251	2022/02/07	13:24:02	32.1
252	2022/02/07	13:24:05	32.8
253	2022/02/07	13:24:08	32.4
254	2022/02/07	13:24:11	32.7
255	2022/02/07	13:24:14	33.0
256	2022/02/07	13:24:17	32.7
257	2022/02/07	13:24:20	32.8
258	2022/02/07	13:24:23	33.1
259	2022/02/07	13:24:26	33.8
260	2022/02/07	13:24:29	36.2
261	2022/02/07	13:24:32	34.8
262	2022/02/07	13:24:35	36.9
263	2022/02/07	13:24:38	35.8
264	2022/02/07	13:24:41	33.5
265	2022/02/07	13:24:44	32.4
266	2022/02/07	13:24:47	32.2
267	2022/02/07	13:24:50	31.6
268	2022/02/07	13:24:53	31.7
269	2022/02/07	13:24:56	32.4
270	2022/02/07	13:24:59	32.2
271	2022/02/07	13:25:02	32.9
272	2022/02/07	13:25:05	32.3
273	2022/02/07	13:25:08	32.6
274	2022/02/07	13:25:11	32.4
275	2022/02/07	13:25:14	31.6
276	2022/02/07	13:25:17	32.0
277	2022/02/07	13:25:20	31.4
278	2022/02/07	13:25:23	30.9
279	2022/02/07	13:25:26	30.8
280	2022/02/07	13:25:29	30.8

281	2022/02/07	13:25:32	31.9
282	2022/02/07	13:25:35	32.0
283	2022/02/07	13:25:38	33.7
284	2022/02/07	13:25:41	31.8
285	2022/02/07	13:25:44	31.3
286	2022/02/07	13:25:47	31.3
287	2022/02/07	13:25:50	31.5
288	2022/02/07	13:25:53	30.8
289	2022/02/07	13:25:56	31.3
290	2022/02/07	13:25:59	31.1
291	2022/02/07	13:26:02	31.2
292	2022/02/07	13:26:05	31.1
293	2022/02/07	13:26:08	31.0
294	2022/02/07	13:26:11	30.9
295	2022/02/07	13:26:14	31.0
296	2022/02/07	13:26:17	31.5
297	2022/02/07	13:26:20	31.3
298	2022/02/07	13:26:23	31.4
299	2022/02/07	13:26:26	31.6
300	2022/02/07	13:26:29	31.3
301	2022/02/07	13:26:32	31.6
302	2022/02/07	13:26:35	31.5
303	2022/02/07	13:26:38	31.8
304	2022/02/07	13:26:41	31.3
305	2022/02/07	13:26:44	31.3
306	2022/02/07	13:26:47	31.6
307	2022/02/07	13:26:50	31.6
308	2022/02/07	13:26:53	31.6
309	2022/02/07	13:26:56	31.7
310	2022/02/07	13:26:59	31.1
311	2022/02/07	13:27:02	30.7
312	2022/02/07	13:27:05	30.6
313	2022/02/07	13:27:08	32.5
314	2022/02/07	13:27:11	31.9
315	2022/02/07	13:27:14	31.4
316	2022/02/07	13:27:17	33.4
317	2022/02/07	13:27:20	31.9
318	2022/02/07	13:27:23	31.9
319	2022/02/07	13:27:26	31.9
320	2022/02/07	13:27:29	31.3
321	2022/02/07	13:27:32	31.4
322	2022/02/07	13:27:35	31.0
323	2022/02/07	13:27:38	30.7
324	2022/02/07	13:27:41	30.7
325	2022/02/07	13:27:44	30.5
326	2022/02/07	13:27:47	30.4
327	2022/02/07	13:27:50	30.8
328	2022/02/07	13:27:53	30.7
329	2022/02/07	13:27:56	30.6
330	2022/02/07	13:27:59	30.4
331	2022/02/07	13:28:02	30.0
332	2022/02/07	13:28:05	30.3
333	2022/02/07	13:28:08	30.5
334	2022/02/07	13:28:11	36.2
335	2022/02/07	13:28:14	31.5
336	2022/02/07	13:28:17	31.2
337	2022/02/07	13:28:20	31.3
338	2022/02/07	13:28:23	31.3
339	2022/02/07	13:28:26	31.3
340	2022/02/07	13:28:29	34.6
341	2022/02/07	13:28:32	30.9
342	2022/02/07	13:28:35	31.0
343	2022/02/07	13:28:38	31.7
344	2022/02/07	13:28:41	31.3
345	2022/02/07	13:28:44	31.2
346	2022/02/07	13:28:47	30.7
347	2022/02/07	13:28:50	30.9
348	2022/02/07	13:28:53	30.9
349	2022/02/07	13:28:56	31.1
350	2022/02/07	13:28:59	31.2
351	2022/02/07	13:29:02	31.3
352	2022/02/07	13:29:05	31.0
353	2022/02/07	13:29:08	31.1
354	2022/02/07	13:29:11	31.2
355	2022/02/07	13:29:14	31.8
356	2022/02/07	13:29:17	31.6
357	2022/02/07	13:29:20	31.9
358	2022/02/07	13:29:23	32.3
359	2022/02/07	13:29:26	32.9
360	2022/02/07	13:29:29	35.0
361	2022/02/07	13:29:32	33.7
362	2022/02/07	13:29:35	32.4
363	2022/02/07	13:29:38	32.2
364	2022/02/07	13:29:41	32.7
365	2022/02/07	13:29:44	32.1
366	2022/02/07	13:29:47	32.3
367	2022/02/07	13:29:50	32.1
368	2022/02/07	13:29:53	35.6
369	2022/02/07	13:29:56	31.7
370	2022/02/07	13:29:59	31.2
371	2022/02/07	13:30:02	31.2
372	2022/02/07	13:30:05	31.2
373	2022/02/07	13:30:08	31.1
374	2022/02/07	13:30:11	31.0
375	2022/02/07	13:30:14	31.4
376	2022/02/07	13:30:17	31.3
377	2022/02/07	13:30:20	31.2
378	2022/02/07	13:30:23	31.5

379	2022/02/07	13:30:26	30.9
380	2022/02/07	13:30:29	31.1
381	2022/02/07	13:30:32	40.7
382	2022/02/07	13:30:35	33.1
383	2022/02/07	13:30:38	30.7
384	2022/02/07	13:30:41	30.6
385	2022/02/07	13:30:44	30.8
386	2022/02/07	13:30:47	31.6
387	2022/02/07	13:30:50	30.3
388	2022/02/07	13:30:53	30.4
389	2022/02/07	13:30:56	30.5
390	2022/02/07	13:30:59	31.1
391	2022/02/07	13:31:02	31.2
392	2022/02/07	13:31:05	31.8
393	2022/02/07	13:31:08	31.9
394	2022/02/07	13:31:11	34.0
395	2022/02/07	13:31:14	37.6
396	2022/02/07	13:31:17	38.2
397	2022/02/07	13:31:20	37.7
398	2022/02/07	13:31:23	38.9
399	2022/02/07	13:31:26	34.1
400	2022/02/07	13:31:29	32.6
401	2022/02/07	13:31:32	43.4*
402	2022/02/07	13:31:35	60.2*
403	2022/02/07	13:31:38	55.5*
404	2022/02/07	13:31:41	52.0*
405	2022/02/07	13:31:44	55.8*
406	2022/02/07	13:31:47	54.9*
407	2022/02/07	13:31:50	51.7*
408	2022/02/07	13:31:53	56.5*
409	2022/02/07	13:31:56	61.5*
410	2022/02/07	13:31:59	57.9*
411	2022/02/07	13:32:02	57.1*
412	2022/02/07	13:32:05	60.1*
413	2022/02/07	13:32:08	54.8*
414	2022/02/07	13:32:11	52.0*
415	2022/02/07	13:32:14	59.6*
416	2022/02/07	13:32:17	57.3*
417	2022/02/07	13:32:20	52.3*
418	2022/02/07	13:32:23	60.5*
419	2022/02/07	13:32:26	62.7*
420	2022/02/07	13:32:29	57.1*
421	2022/02/07	13:32:32	60.7*
422	2022/02/07	13:32:35	61.2*
423	2022/02/07	13:32:38	58.3*
424	2022/02/07	13:32:41	56.3*
425	2022/02/07	13:32:44	59.2*
426	2022/02/07	13:32:47	62.5*
427	2022/02/07	13:32:50	62.8*
428	2022/02/07	13:32:53	63.2*
429	2022/02/07	13:32:56	57.3*
430	2022/02/07	13:32:59	58.8*
431	2022/02/07	13:33:02	62.8*
432	2022/02/07	13:33:05	59.3*
433	2022/02/07	13:33:08	61.6*
434	2022/02/07	13:33:11	60.5*
435	2022/02/07	13:33:14	60.7*
436	2022/02/07	13:33:17	66.4*
437	2022/02/07	13:33:20	62.4*
438	2022/02/07	13:33:23	58.0*
439	2022/02/07	13:33:26	61.4*
440	2022/02/07	13:33:29	65.3*
441	2022/02/07	13:33:32	62.8*
442	2022/02/07	13:33:35	61.5*
443	2022/02/07	13:33:38	60.3*
444	2022/02/07	13:33:41	56.3*
445	2022/02/07	13:33:44	60.5*
446	2022/02/07	13:33:47	54.4
447	2022/02/07	13:33:50	59.0
448	2022/02/07	13:33:53	57.1
449	2022/02/07	13:33:56	54.9
450	2022/02/07	13:33:59	57.0
451	2022/02/07	13:34:02	53.5
452	2022/02/07	13:34:05	49.1
453	2022/02/07	13:34:08	53.2
454	2022/02/07	13:34:11	60.4
455	2022/02/07	13:34:14	54.9
456	2022/02/07	13:34:17	59.2
457	2022/02/07	13:34:20	59.5
458	2022/02/07	13:34:23	59.5
459	2022/02/07	13:34:26	60.5
460	2022/02/07	13:34:29	59.7
461	2022/02/07	13:34:32	58.9
462	2022/02/07	13:34:35	63.6
463	2022/02/07	13:34:38	61.9
464	2022/02/07	13:34:41	53.4

38HDR

ELECTRICAL DATA

38HDR UNIT SIZE	V–PH–Hz	VOLTAGE RANGE*		COMPRESSOR		OUTDOOR FAN MOTOR			MIN CKT AMPS	FUSE/ HACR BKR AMPS
		Min	Max	RLA	LRA	FLA	NEC Hp	kW Out		
018	208/230–1–60	187	253	9.0	48.0	0.80	0.125	0.09	12.1	20
024	208/230–1–60	187	253	12.8	58.3	0.80	0.125	0.09	16.8	25
030	208/230–1–60	187	253	14.1	73.0	1.45	0.25	0.19	19.1	30
036	208/230–1–60	187	253	14.1	77.0	1.45	0.25	0.19	19.1	30
	208/230–3–60	187	253	9.0	71.0	1.45	0.25	0.19	12.7	20
	460–3–60	414	506	5.6	38.0	0.80	0.25	0.19	7.8	15
048	208/230–1–60	187	253	21.8	117.0	1.45	0.25	0.19	28.7	50
	208/230–3–60	187	253	13.7	83.1	1.45	0.25	0.19	18.6	30
	460–3–60	414	506	6.2	41.0	0.80	0.25	0.19	8.6	15
060	208/230–1–60	187	253	26.4	134.0	1.45	0.25	0.19	34.5	60
	208/230–3–60	187	253	16.0	110.0	1.45	0.25	0.19	21.5	35
	460–3–60	414	506	7.8	52.0	0.80	0.25	0.19	10.6	15

* Permissible limits of the voltage range at which the unit will operate satisfactorily

FLA – Full Load Amps
HACR – Heating, Air Conditininng, Refrigeration
LRA – Locked Rotor Amps
NEC – National Electrical Code
RLA – Rated Load Amps (compressor)

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

SOUND LEVEL

Unit Size	Standard Rating (dB)	Typical Octave Band Spectrum (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018	68	52.0	57.5	60.5	63.5	60.5	57.5	46.5
024	69	57.5	61.5	63.0	61.0	60.0	56.0	45.0
030	72	56.5	63.0	65.0	66.0	64.0	62.5	57.0
036	72	65.0	61.5	63.5	65.0	64.5	61.0	54.5
048	72	58.5	61.0	64.0	67.5	66.0	64.0	57.0
060	72	63.0	61.5	64.0	66.5	66.0	64.5	55.5

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE–VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C)
018	12 (6.7)
024	12 (6.7)
030	12 (6.7)
036	12 (6.7)
048	12 (6.7)
060	12 (6.7)

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 65.7 - 2022/02/07 12:26:21
- Level Range : 40-100
- SEL : 71.8
- Leq : 41.1
-

No.s	Date Time	(dB)
1	2022/02/07 12:02:50	41.9
2	2022/02/07 12:02:53	39.1
3	2022/02/07 12:02:56	37.1
4	2022/02/07 12:02:59	35.6
5	2022/02/07 12:03:02	35.6
6	2022/02/07 12:03:05	34.5
7	2022/02/07 12:03:08	35.0
8	2022/02/07 12:03:11	35.9
9	2022/02/07 12:03:14	35.3
10	2022/02/07 12:03:17	36.3
11	2022/02/07 12:03:20	34.1
12	2022/02/07 12:03:23	33.9
13	2022/02/07 12:03:26	33.6
14	2022/02/07 12:03:29	33.4
15	2022/02/07 12:03:32	33.8
16	2022/02/07 12:03:35	34.2
17	2022/02/07 12:03:38	33.5
18	2022/02/07 12:03:41	33.1
19	2022/02/07 12:03:44	33.1
20	2022/02/07 12:03:47	34.0
21	2022/02/07 12:03:50	33.5
22	2022/02/07 12:03:53	35.4
23	2022/02/07 12:03:56	34.5
24	2022/02/07 12:03:59	34.3
25	2022/02/07 12:04:02	34.4
26	2022/02/07 12:04:05	39.1
27	2022/02/07 12:04:08	38.4
28	2022/02/07 12:04:11	38.5
29	2022/02/07 12:04:14	38.7
30	2022/02/07 12:04:17	37.1
31	2022/02/07 12:04:20	37.1
32	2022/02/07 12:04:23	36.8
33	2022/02/07 12:04:26	36.8
34	2022/02/07 12:04:29	37.4
35	2022/02/07 12:04:32	36.1
36	2022/02/07 12:04:35	35.9
37	2022/02/07 12:04:38	38.8
38	2022/02/07 12:04:41	41.4
39	2022/02/07 12:04:44	39.8
40	2022/02/07 12:04:47	42.9
41	2022/02/07 12:04:50	43.6
42	2022/02/07 12:04:53	47.8
43	2022/02/07 12:04:56	46.2
44	2022/02/07 12:04:59	47.6
45	2022/02/07 12:05:02	48.9
46	2022/02/07 12:05:05	50.6
47	2022/02/07 12:05:08	52.1
48	2022/02/07 12:05:11	54.6
49	2022/02/07 12:05:14	56.1
50	2022/02/07 12:05:17	58.2
51	2022/02/07 12:05:20	57.8
52	2022/02/07 12:05:23	56.0
53	2022/02/07 12:05:26	53.4
54	2022/02/07 12:05:29	50.6
55	2022/02/07 12:05:32	49.2
56	2022/02/07 12:05:35	47.1
57	2022/02/07 12:05:38	44.1
58	2022/02/07 12:05:41	41.9
59	2022/02/07 12:05:44	42.3
60	2022/02/07 12:05:47	39.6
61	2022/02/07 12:05:50	38.9
62	2022/02/07 12:05:53	38.0
63	2022/02/07 12:05:56	36.7
64	2022/02/07 12:05:59	39.1
65	2022/02/07 12:06:02	38.9
66	2022/02/07 12:06:05	36.8
67	2022/02/07 12:06:08	36.5
68	2022/02/07 12:06:11	35.7
69	2022/02/07 12:06:14	34.0
70	2022/02/07 12:06:17	36.3
71	2022/02/07 12:06:20	36.3
72	2022/02/07 12:06:23	37.2
73	2022/02/07 12:06:26	38.1
74	2022/02/07 12:06:29	35.8
75	2022/02/07 12:06:32	39.5
76	2022/02/07 12:06:35	38.9
77	2022/02/07 12:06:38	35.9
78	2022/02/07 12:06:41	35.5
79	2022/02/07 12:06:44	42.7
80	2022/02/07 12:06:47	36.3
81	2022/02/07 12:06:50	35.9
82	2022/02/07 12:06:53	36.5
83	2022/02/07 12:06:56	36.3
84	2022/02/07 12:06:59	39.4

85	2022/02/07	12:07:02	38.1
86	2022/02/07	12:07:05	37.5
87	2022/02/07	12:07:08	41.6
88	2022/02/07	12:07:11	37.2
89	2022/02/07	12:07:14	35.9
90	2022/02/07	12:07:17	38.4
91	2022/02/07	12:07:20	39.8
92	2022/02/07	12:07:23	37.1
93	2022/02/07	12:07:26	35.0
94	2022/02/07	12:07:29	35.5
95	2022/02/07	12:07:32	35.8
96	2022/02/07	12:07:35	38.8
97	2022/02/07	12:07:38	39.7
98	2022/02/07	12:07:41	35.9
99	2022/02/07	12:07:44	35.1
100	2022/02/07	12:07:47	34.5
101	2022/02/07	12:07:50	36.5
102	2022/02/07	12:07:53	38.7
103	2022/02/07	12:07:56	42.9
104	2022/02/07	12:07:59	37.7
105	2022/02/07	12:08:02	37.8
106	2022/02/07	12:08:05	37.5
107	2022/02/07	12:08:08	36.9
108	2022/02/07	12:08:11	37.4
109	2022/02/07	12:08:14	37.1
110	2022/02/07	12:08:17	36.3
111	2022/02/07	12:08:20	39.1
112	2022/02/07	12:08:23	37.9
113	2022/02/07	12:08:26	36.5
114	2022/02/07	12:08:29	36.4
115	2022/02/07	12:08:32	36.7
116	2022/02/07	12:08:35	36.2
117	2022/02/07	12:08:38	36.0
118	2022/02/07	12:08:41	35.0
119	2022/02/07	12:08:44	35.1
120	2022/02/07	12:08:47	36.9
121	2022/02/07	12:08:50	37.9
122	2022/02/07	12:08:53	36.6
123	2022/02/07	12:08:56	35.4
124	2022/02/07	12:08:59	35.8
125	2022/02/07	12:09:02	35.2
126	2022/02/07	12:09:05	34.8
127	2022/02/07	12:09:08	34.7
128	2022/02/07	12:09:11	35.0
129	2022/02/07	12:09:14	34.4
130	2022/02/07	12:09:17	35.0
131	2022/02/07	12:09:20	35.2
132	2022/02/07	12:09:23	36.0
133	2022/02/07	12:09:26	35.6
134	2022/02/07	12:09:29	36.3
135	2022/02/07	12:09:32	35.0
136	2022/02/07	12:09:35	36.8
137	2022/02/07	12:09:38	36.4
138	2022/02/07	12:09:41	35.4
139	2022/02/07	12:09:44	34.5
140	2022/02/07	12:09:47	35.3
141	2022/02/07	12:09:50	35.7
142	2022/02/07	12:09:53	35.4
143	2022/02/07	12:09:56	35.3
144	2022/02/07	12:09:59	35.0
145	2022/02/07	12:10:02	34.0
146	2022/02/07	12:10:05	35.9
147	2022/02/07	12:10:08	34.5
148	2022/02/07	12:10:11	37.4
149	2022/02/07	12:10:14	39.5
150	2022/02/07	12:10:17	36.4
151	2022/02/07	12:10:20	36.5
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153	2022/02/07	12:10:26	36.1
154	2022/02/07	12:10:29	36.6
155	2022/02/07	12:10:32	36.4
156	2022/02/07	12:10:35	36.1
157	2022/02/07	12:10:38	38.7
158	2022/02/07	12:10:41	37.1
159	2022/02/07	12:10:44	39.3
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161	2022/02/07	12:10:50	39.2
162	2022/02/07	12:10:53	38.0
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164	2022/02/07	12:10:59	37.9
165	2022/02/07	12:11:02	34.9
166	2022/02/07	12:11:05	34.4
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168	2022/02/07	12:11:11	34.3
169	2022/02/07	12:11:14	35.7
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172	2022/02/07	12:11:23	37.0
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181	2022/02/07	12:11:50	35.2
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188	2022/02/07	12:12:11	34.6
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190	2022/02/07	12:12:17	35.7
191	2022/02/07	12:12:20	35.0
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193	2022/02/07	12:12:26	35.5
194	2022/02/07	12:12:29	34.3
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203	2022/02/07	12:12:56	34.9
204	2022/02/07	12:12:59	34.0
205	2022/02/07	12:13:02	34.8
206	2022/02/07	12:13:05	34.4
207	2022/02/07	12:13:08	33.8
208	2022/02/07	12:13:11	34.6
209	2022/02/07	12:13:14	34.9
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218	2022/02/07	12:13:41	37.8
219	2022/02/07	12:13:44	37.5
220	2022/02/07	12:13:47	39.0
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234	2022/02/07	12:14:29	35.5
235	2022/02/07	12:14:32	37.7
236	2022/02/07	12:14:35	35.0
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238	2022/02/07	12:14:41	33.7
239	2022/02/07	12:14:44	33.4
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243	2022/02/07	12:14:56	37.9
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246	2022/02/07	12:15:05	35.5
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248	2022/02/07	12:15:11	36.0
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250	2022/02/07	12:15:17	34.2
251	2022/02/07	12:15:20	36.2
252	2022/02/07	12:15:23	36.3
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262	2022/02/07	12:15:53	36.7
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265	2022/02/07	12:16:02	37.8
266	2022/02/07	12:16:05	37.1
267	2022/02/07	12:16:08	37.0
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269	2022/02/07	12:16:14	38.1
270	2022/02/07	12:16:17	35.7
271	2022/02/07	12:16:20	36.8
272	2022/02/07	12:16:23	37.0
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274	2022/02/07	12:16:29	35.0
275	2022/02/07	12:16:32	34.4
276	2022/02/07	12:16:35	36.9
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284	2022/02/07	12:16:59	35.6
285	2022/02/07	12:17:02	36.2
286	2022/02/07	12:17:05	35.6
287	2022/02/07	12:17:08	36.8
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298	2022/02/07	12:17:41	35.3
299	2022/02/07	12:17:44	33.9
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309	2022/02/07	12:18:14	35.7
310	2022/02/07	12:18:17	36.1
311	2022/02/07	12:18:20	35.8
312	2022/02/07	12:18:23	35.5
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317	2022/02/07	12:18:38	35.0
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319	2022/02/07	12:18:44	34.8
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323	2022/02/07	12:18:56	34.5
324	2022/02/07	12:18:59	34.9
325	2022/02/07	12:19:02	34.5
326	2022/02/07	12:19:05	34.7
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331	2022/02/07	12:19:20	34.4
332	2022/02/07	12:19:23	35.0
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334	2022/02/07	12:19:29	35.4
335	2022/02/07	12:19:32	36.1
336	2022/02/07	12:19:35	35.3
337	2022/02/07	12:19:38	35.0
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339	2022/02/07	12:19:44	34.7
340	2022/02/07	12:19:47	35.0
341	2022/02/07	12:19:50	34.4
342	2022/02/07	12:19:53	34.0
343	2022/02/07	12:19:56	34.4
344	2022/02/07	12:19:59	34.4
345	2022/02/07	12:20:02	34.3
346	2022/02/07	12:20:05	34.3
347	2022/02/07	12:20:08	34.1
348	2022/02/07	12:20:11	34.2
349	2022/02/07	12:20:14	33.9
350	2022/02/07	12:20:17	34.8
351	2022/02/07	12:20:20	34.4
352	2022/02/07	12:20:23	34.1
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355	2022/02/07	12:20:32	34.8
356	2022/02/07	12:20:35	34.8
357	2022/02/07	12:20:38	35.3
358	2022/02/07	12:20:41	36.8
359	2022/02/07	12:20:44	35.9
360	2022/02/07	12:20:47	37.9
361	2022/02/07	12:20:50	38.9
362	2022/02/07	12:20:53	38.5
363	2022/02/07	12:20:56	42.4
364	2022/02/07	12:20:59	41.4
365	2022/02/07	12:21:02	38.4
366	2022/02/07	12:21:05	36.7
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368	2022/02/07	12:21:11	37.7
369	2022/02/07	12:21:14	37.9
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373	2022/02/07	12:21:26	36.6
374	2022/02/07	12:21:29	40.6
375	2022/02/07	12:21:32	36.8
376	2022/02/07	12:21:35	36.7
377	2022/02/07	12:21:38	36.6
378	2022/02/07	12:21:41	36.5

379	2022/02/07	12:21:44	37.8
380	2022/02/07	12:21:47	37.6
381	2022/02/07	12:21:50	39.0
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383	2022/02/07	12:21:56	37.6
384	2022/02/07	12:21:59	36.1
385	2022/02/07	12:22:02	38.3
386	2022/02/07	12:22:05	37.2
387	2022/02/07	12:22:08	36.1
388	2022/02/07	12:22:11	37.0
389	2022/02/07	12:22:14	35.8
390	2022/02/07	12:22:17	36.4
391	2022/02/07	12:22:20	35.8
392	2022/02/07	12:22:23	34.9
393	2022/02/07	12:22:26	35.7
394	2022/02/07	12:22:29	34.5
395	2022/02/07	12:22:32	37.5
396	2022/02/07	12:22:35	35.9
397	2022/02/07	12:22:38	36.9
398	2022/02/07	12:22:41	37.9
399	2022/02/07	12:22:44	37.2
400	2022/02/07	12:22:47	40.3
401	2022/02/07	12:22:50	37.3*
402	2022/02/07	12:22:53	39.3*
403	2022/02/07	12:22:56	46.5*
404	2022/02/07	12:22:59	49.5*
405	2022/02/07	12:23:02	46.3*
406	2022/02/07	12:23:05	49.8*
407	2022/02/07	12:23:08	42.4*
408	2022/02/07	12:23:11	44.8*
409	2022/02/07	12:23:14	46.2*
410	2022/02/07	12:23:17	55.5*
411	2022/02/07	12:23:20	47.3*
412	2022/02/07	12:23:23	49.8*
413	2022/02/07	12:23:26	49.6*
414	2022/02/07	12:23:29	59.0*
415	2022/02/07	12:23:32	54.7*
416	2022/02/07	12:23:35	50.2*
417	2022/02/07	12:23:38	49.4*
418	2022/02/07	12:23:41	50.1*
419	2022/02/07	12:23:44	55.5*
420	2022/02/07	12:23:47	49.2*
421	2022/02/07	12:23:50	46.4*
422	2022/02/07	12:23:53	40.8*
423	2022/02/07	12:23:56	51.6*
424	2022/02/07	12:23:59	61.4*
425	2022/02/07	12:24:02	63.0*
426	2022/02/07	12:24:05	58.8*
427	2022/02/07	12:24:08	56.1*
428	2022/02/07	12:24:11	58.7*
429	2022/02/07	12:24:14	53.2*
430	2022/02/07	12:24:17	59.7*
431	2022/02/07	12:24:20	55.0*
432	2022/02/07	12:24:23	48.7*
433	2022/02/07	12:24:26	41.7*
434	2022/02/07	12:24:29	38.1*
435	2022/02/07	12:24:32	48.7*
436	2022/02/07	12:24:35	44.5*
437	2022/02/07	12:24:38	47.2*
438	2022/02/07	12:24:41	64.2*
439	2022/02/07	12:24:44	54.6*
440	2022/02/07	12:24:47	43.1*
441	2022/02/07	12:24:50	63.1*
442	2022/02/07	12:24:53	61.2*
443	2022/02/07	12:24:56	57.4*
444	2022/02/07	12:24:59	56.3*
445	2022/02/07	12:25:02	59.4*
446	2022/02/07	12:25:05	55.3*
447	2022/02/07	12:25:08	50.8*
448	2022/02/07	12:25:11	43.5*
449	2022/02/07	12:25:14	48.9*
450	2022/02/07	12:25:17	52.7*
451	2022/02/07	12:25:20	61.3*
452	2022/02/07	12:25:23	62.0*
453	2022/02/07	12:25:26	52.6*
454	2022/02/07	12:25:29	60.5*
455	2022/02/07	12:25:32	52.6*
456	2022/02/07	12:25:35	50.4*
457	2022/02/07	12:25:38	47.1*
458	2022/02/07	12:25:41	42.4*
459	2022/02/07	12:25:44	55.5*
460	2022/02/07	12:25:47	48.1*
461	2022/02/07	12:25:50	40.0*
462	2022/02/07	12:25:53	45.4*
463	2022/02/07	12:25:56	47.4*
464	2022/02/07	12:25:59	57.2*
465	2022/02/07	12:26:02	59.7*
466	2022/02/07	12:26:05	62.5*
467	2022/02/07	12:26:08	56.8*
468	2022/02/07	12:26:11	62.7*
469	2022/02/07	12:26:14	63.6*
470	2022/02/07	12:26:17	62.7*
471	2022/02/07	12:26:20	63.4*
472	2022/02/07	12:26:23	64.8*
473	2022/02/07	12:26:26	63.4*
474	2022/02/07	12:26:29	53.8

-        Freq Weight : A
-        Time Weight : SLOW
-        Level Range : 40-100
-        Max dB : 68.2 - 2022/02/07 13:01:34
-        Level Range : 40-100
-        SEL : 70.0
-        Leq : 39.0
-

No.s	Date Time	(dB)
1	2022/02/07 12:36:07	39.6
2	2022/02/07 12:36:10	41.2
3	2022/02/07 12:36:13	40.9
4	2022/02/07 12:36:16	37.1
5	2022/02/07 12:36:19	37.5
6	2022/02/07 12:36:22	38.2
7	2022/02/07 12:36:25	39.3
8	2022/02/07 12:36:28	39.5
9	2022/02/07 12:36:31	37.4
10	2022/02/07 12:36:34	38.4
11	2022/02/07 12:36:37	36.4
12	2022/02/07 12:36:40	36.1
13	2022/02/07 12:36:43	35.6
14	2022/02/07 12:36:46	36.5
15	2022/02/07 12:36:49	36.8
16	2022/02/07 12:36:52	36.1
17	2022/02/07 12:36:55	36.8
18	2022/02/07 12:36:58	35.3
19	2022/02/07 12:37:01	36.6
20	2022/02/07 12:37:04	38.2
21	2022/02/07 12:37:07	35.7
22	2022/02/07 12:37:10	36.2
23	2022/02/07 12:37:13	38.7
24	2022/02/07 12:37:16	39.7
25	2022/02/07 12:37:19	38.1
26	2022/02/07 12:37:22	39.5
27	2022/02/07 12:37:25	39.0
28	2022/02/07 12:37:28	39.2
29	2022/02/07 12:37:31	40.0
30	2022/02/07 12:37:34	40.3
31	2022/02/07 12:37:37	39.3
32	2022/02/07 12:37:40	39.1
33	2022/02/07 12:37:43	39.3
34	2022/02/07 12:37:46	37.5
35	2022/02/07 12:37:49	37.9
36	2022/02/07 12:37:52	37.4
37	2022/02/07 12:37:55	38.8
38	2022/02/07 12:37:58	37.0
39	2022/02/07 12:38:01	38.5
40	2022/02/07 12:38:04	36.7
41	2022/02/07 12:38:07	36.4
42	2022/02/07 12:38:10	35.5
43	2022/02/07 12:38:13	35.5
44	2022/02/07 12:38:16	37.4
45	2022/02/07 12:38:19	36.3
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98	2022/02/07	12:40:58	33.4
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451	2022/02/07	12:58:37	53.3*
452	2022/02/07	12:58:40	51.2*
453	2022/02/07	12:58:43	51.5*
454	2022/02/07	12:58:46	47.9*
455	2022/02/07	12:58:49	38.4*
456	2022/02/07	12:58:52	52.8*
457	2022/02/07	12:58:55	48.1*
458	2022/02/07	12:58:58	60.6*
459	2022/02/07	12:59:01	52.8*
460	2022/02/07	12:59:04	46.6*
461	2022/02/07	12:59:07	54.2*
462	2022/02/07	12:59:10	54.9*
463	2022/02/07	12:59:13	55.2*
464	2022/02/07	12:59:16	53.2*
465	2022/02/07	12:59:19	48.1*
466	2022/02/07	12:59:22	46.9*
467	2022/02/07	12:59:25	54.4*
468	2022/02/07	12:59:28	59.7*
469	2022/02/07	12:59:31	54.8*
470	2022/02/07	12:59:34	49.3*
471	2022/02/07	12:59:37	55.9*
472	2022/02/07	12:59:40	49.2*
473	2022/02/07	12:59:43	44.8*
474	2022/02/07	12:59:46	42.0*
475	2022/02/07	12:59:49	41.3*
476	2022/02/07	12:59:52	42.4*

477	2022/02/07	12:59:55	47.5*
478	2022/02/07	12:59:58	50.0*
479	2022/02/07	13:00:01	53.3*
480	2022/02/07	13:00:04	56.8*
481	2022/02/07	13:00:07	57.0*
482	2022/02/07	13:00:10	48.2*
483	2022/02/07	13:00:13	49.2*
484	2022/02/07	13:00:16	43.5*
485	2022/02/07	13:00:19	38.2*
486	2022/02/07	13:00:22	42.7*
487	2022/02/07	13:00:25	42.1*
488	2022/02/07	13:00:28	43.2*
489	2022/02/07	13:00:31	37.7*
490	2022/02/07	13:00:34	47.1*
491	2022/02/07	13:00:37	41.3*
492	2022/02/07	13:00:40	47.8*
493	2022/02/07	13:00:43	47.4*
494	2022/02/07	13:00:46	45.1*
495	2022/02/07	13:00:49	47.9*
496	2022/02/07	13:00:52	48.3*
497	2022/02/07	13:00:55	45.8*
498	2022/02/07	13:00:58	49.6*
499	2022/02/07	13:01:01	44.2*
500	2022/02/07	13:01:04	43.1*
501	2022/02/07	13:01:07	49.0*
502	2022/02/07	13:01:10	47.0*
503	2022/02/07	13:01:13	51.4*
504	2022/02/07	13:01:16	55.1*
505	2022/02/07	13:01:19	56.0*
506	2022/02/07	13:01:22	61.5*
507	2022/02/07	13:01:25	61.8*
508	2022/02/07	13:01:28	67.1*
509	2022/02/07	13:01:31	66.3*
510	2022/02/07	13:01:34	62.9*

- Freq Weight : A
- Time Weight : SLOW
- Level Range : 40-100
- Max dB : 70.2 - 2022/02/07 13:33:30
- Level Range : 40-100
- SEL : 76.2
- Leq : 45.3
-

No.s	Date Time	(dB)
1	2022/02/07 13:11:32	38.1
2	2022/02/07 13:11:35	35.7
3	2022/02/07 13:11:38	34.4
4	2022/02/07 13:11:41	32.0
5	2022/02/07 13:11:44	31.4
6	2022/02/07 13:11:47	30.3
7	2022/02/07 13:11:50	30.4
8	2022/02/07 13:11:53	30.5
9	2022/02/07 13:11:56	30.6
10	2022/02/07 13:11:59	30.3
11	2022/02/07 13:12:02	30.2
12	2022/02/07 13:12:05	30.2
13	2022/02/07 13:12:08	30.7
14	2022/02/07 13:12:11	30.1
15	2022/02/07 13:12:14	31.0
16	2022/02/07 13:12:17	31.3
17	2022/02/07 13:12:20	30.1
18	2022/02/07 13:12:23	30.3
19	2022/02/07 13:12:26	30.9
20	2022/02/07 13:12:29	30.8
21	2022/02/07 13:12:32	30.4
22	2022/02/07 13:12:35	30.5
23	2022/02/07 13:12:38	31.2
24	2022/02/07 13:12:41	31.1
25	2022/02/07 13:12:44	30.8
26	2022/02/07 13:12:47	30.9
27	2022/02/07 13:12:50	30.8
28	2022/02/07 13:12:53	30.6
29	2022/02/07 13:12:56	30.7
30	2022/02/07 13:12:59	31.9
31	2022/02/07 13:13:02	31.6
32	2022/02/07 13:13:05	31.1
33	2022/02/07 13:13:08	30.9
34	2022/02/07 13:13:11	31.7
35	2022/02/07 13:13:14	31.9
36	2022/02/07 13:13:17	31.9
37	2022/02/07 13:13:20	31.2
38	2022/02/07 13:13:23	31.4
39	2022/02/07 13:13:26	31.4
40	2022/02/07 13:13:29	31.3
41	2022/02/07 13:13:32	31.6
42	2022/02/07 13:13:35	31.8
43	2022/02/07 13:13:38	32.0
44	2022/02/07 13:13:41	31.9
45	2022/02/07 13:13:44	32.3
46	2022/02/07 13:13:47	32.1
47	2022/02/07 13:13:50	32.0
48	2022/02/07 13:13:53	32.2
49	2022/02/07 13:13:56	32.0
50	2022/02/07 13:13:59	31.6
51	2022/02/07 13:14:02	31.5
52	2022/02/07 13:14:05	31.2
53	2022/02/07 13:14:08	31.3
54	2022/02/07 13:14:11	30.9
55	2022/02/07 13:14:14	31.9
56	2022/02/07 13:14:17	31.5
57	2022/02/07 13:14:20	31.6
58	2022/02/07 13:14:23	31.9
59	2022/02/07 13:14:26	32.6
60	2022/02/07 13:14:29	33.4
61	2022/02/07 13:14:32	33.0
62	2022/02/07 13:14:35	32.1
63	2022/02/07 13:14:38	32.9
64	2022/02/07 13:14:41	32.7
65	2022/02/07 13:14:44	32.4
66	2022/02/07 13:14:47	31.8
67	2022/02/07 13:14:50	31.9
68	2022/02/07 13:14:53	32.1
69	2022/02/07 13:14:56	31.6
70	2022/02/07 13:14:59	33.0
71	2022/02/07 13:15:02	33.3
72	2022/02/07 13:15:05	33.2
73	2022/02/07 13:15:08	33.9
74	2022/02/07 13:15:11	33.7
75	2022/02/07 13:15:14	33.4
76	2022/02/07 13:15:17	33.9
77	2022/02/07 13:15:20	35.4
78	2022/02/07 13:15:23	39.3
79	2022/02/07 13:15:26	40.0
80	2022/02/07 13:15:29	36.1
81	2022/02/07 13:15:32	39.6
82	2022/02/07 13:15:35	37.1
83	2022/02/07 13:15:38	37.9
84	2022/02/07 13:15:41	37.9

85	2022/02/07	13:15:44	39.4
86	2022/02/07	13:15:47	39.4
87	2022/02/07	13:15:50	39.6
88	2022/02/07	13:15:53	40.6
89	2022/02/07	13:15:56	38.4
90	2022/02/07	13:15:59	39.2
91	2022/02/07	13:16:02	38.0
92	2022/02/07	13:16:05	41.6
93	2022/02/07	13:16:08	40.0
94	2022/02/07	13:16:11	41.6
95	2022/02/07	13:16:14	42.4
96	2022/02/07	13:16:17	44.3
97	2022/02/07	13:16:20	47.4
98	2022/02/07	13:16:23	44.5
99	2022/02/07	13:16:26	44.4
100	2022/02/07	13:16:29	46.9
101	2022/02/07	13:16:32	47.7
102	2022/02/07	13:16:35	43.3
103	2022/02/07	13:16:38	39.9
104	2022/02/07	13:16:41	36.4
105	2022/02/07	13:16:44	36.4
106	2022/02/07	13:16:47	37.4
107	2022/02/07	13:16:50	34.6
108	2022/02/07	13:16:53	34.4
109	2022/02/07	13:16:56	33.0
110	2022/02/07	13:16:59	32.3
111	2022/02/07	13:17:02	33.1
112	2022/02/07	13:17:05	32.8
113	2022/02/07	13:17:08	31.5
114	2022/02/07	13:17:11	31.2
115	2022/02/07	13:17:14	31.6
116	2022/02/07	13:17:17	33.0
117	2022/02/07	13:17:20	32.4
118	2022/02/07	13:17:23	33.4
119	2022/02/07	13:17:26	32.1
120	2022/02/07	13:17:29	32.7
121	2022/02/07	13:17:32	31.8
122	2022/02/07	13:17:35	31.7
123	2022/02/07	13:17:38	31.7
124	2022/02/07	13:17:41	31.2
125	2022/02/07	13:17:44	31.4
126	2022/02/07	13:17:47	51.0
127	2022/02/07	13:17:50	47.7
128	2022/02/07	13:17:53	36.7
129	2022/02/07	13:17:56	32.1
130	2022/02/07	13:17:59	31.7
131	2022/02/07	13:18:02	31.9
132	2022/02/07	13:18:05	32.3
133	2022/02/07	13:18:08	32.5
134	2022/02/07	13:18:11	31.9
135	2022/02/07	13:18:14	31.3
136	2022/02/07	13:18:17	30.9
137	2022/02/07	13:18:20	30.8
138	2022/02/07	13:18:23	30.9
139	2022/02/07	13:18:26	30.6
140	2022/02/07	13:18:29	30.5
141	2022/02/07	13:18:32	30.8
142	2022/02/07	13:18:35	31.0
143	2022/02/07	13:18:38	31.1
144	2022/02/07	13:18:41	31.2
145	2022/02/07	13:18:44	30.4
146	2022/02/07	13:18:47	30.8
147	2022/02/07	13:18:50	30.7
148	2022/02/07	13:18:53	30.4
149	2022/02/07	13:18:56	30.5
150	2022/02/07	13:18:59	30.9
151	2022/02/07	13:19:02	30.9
152	2022/02/07	13:19:05	30.8
153	2022/02/07	13:19:08	31.0
154	2022/02/07	13:19:11	31.2
155	2022/02/07	13:19:14	31.3
156	2022/02/07	13:19:17	32.1
157	2022/02/07	13:19:20	31.6
158	2022/02/07	13:19:23	30.9
159	2022/02/07	13:19:26	30.8
160	2022/02/07	13:19:29	31.3
161	2022/02/07	13:19:32	31.2
162	2022/02/07	13:19:35	31.0
163	2022/02/07	13:19:38	31.1
164	2022/02/07	13:19:41	30.7
165	2022/02/07	13:19:44	30.5
166	2022/02/07	13:19:47	30.7
167	2022/02/07	13:19:50	30.8
168	2022/02/07	13:19:53	31.2
169	2022/02/07	13:19:56	30.9
170	2022/02/07	13:19:59	31.1
171	2022/02/07	13:20:02	31.3
172	2022/02/07	13:20:05	31.6
173	2022/02/07	13:20:08	31.9
174	2022/02/07	13:20:11	31.4
175	2022/02/07	13:20:14	31.7
176	2022/02/07	13:20:17	32.1
177	2022/02/07	13:20:20	32.3
178	2022/02/07	13:20:23	31.9
179	2022/02/07	13:20:26	31.9
180	2022/02/07	13:20:29	31.8
181	2022/02/07	13:20:32	31.9
182	2022/02/07	13:20:35	33.0

183	2022/02/07	13:20:38	32.7
184	2022/02/07	13:20:41	33.6
185	2022/02/07	13:20:44	32.9
186	2022/02/07	13:20:47	32.1
187	2022/02/07	13:20:50	33.0
188	2022/02/07	13:20:53	31.4
189	2022/02/07	13:20:56	30.8
190	2022/02/07	13:20:59	30.8
191	2022/02/07	13:21:02	30.6
192	2022/02/07	13:21:05	30.8
193	2022/02/07	13:21:08	30.9
194	2022/02/07	13:21:11	31.4
195	2022/02/07	13:21:14	32.2
196	2022/02/07	13:21:17	33.2
197	2022/02/07	13:21:20	33.3
198	2022/02/07	13:21:23	32.8
199	2022/02/07	13:21:26	33.4
200	2022/02/07	13:21:29	35.5
201	2022/02/07	13:21:32	37.8
202	2022/02/07	13:21:35	37.8
203	2022/02/07	13:21:38	35.1
204	2022/02/07	13:21:41	34.3
205	2022/02/07	13:21:44	33.1
206	2022/02/07	13:21:47	32.1
207	2022/02/07	13:21:50	31.6
208	2022/02/07	13:21:53	32.1
209	2022/02/07	13:21:56	34.0
210	2022/02/07	13:21:59	32.5
211	2022/02/07	13:22:02	32.2
212	2022/02/07	13:22:05	33.6
213	2022/02/07	13:22:08	33.6
214	2022/02/07	13:22:11	32.8
215	2022/02/07	13:22:14	31.7
216	2022/02/07	13:22:17	32.2
217	2022/02/07	13:22:20	31.8
218	2022/02/07	13:22:23	33.1
219	2022/02/07	13:22:26	33.1
220	2022/02/07	13:22:29	33.1
221	2022/02/07	13:22:32	33.2
222	2022/02/07	13:22:35	33.7
223	2022/02/07	13:22:38	32.6
224	2022/02/07	13:22:41	34.5
225	2022/02/07	13:22:44	33.0
226	2022/02/07	13:22:47	32.9
227	2022/02/07	13:22:50	32.9
228	2022/02/07	13:22:53	34.1
229	2022/02/07	13:22:56	35.2
230	2022/02/07	13:22:59	33.5
231	2022/02/07	13:23:02	35.1
232	2022/02/07	13:23:05	38.8
233	2022/02/07	13:23:08	37.3
234	2022/02/07	13:23:11	41.6
235	2022/02/07	13:23:14	41.6
236	2022/02/07	13:23:17	40.3
237	2022/02/07	13:23:20	39.2
238	2022/02/07	13:23:23	38.4
239	2022/02/07	13:23:26	35.4
240	2022/02/07	13:23:29	33.3
241	2022/02/07	13:23:32	33.8
242	2022/02/07	13:23:35	35.7
243	2022/02/07	13:23:38	33.4
244	2022/02/07	13:23:41	34.7
245	2022/02/07	13:23:44	35.3
246	2022/02/07	13:23:47	35.3
247	2022/02/07	13:23:50	33.0
248	2022/02/07	13:23:53	33.4
249	2022/02/07	13:23:56	33.9
250	2022/02/07	13:23:59	32.8
251	2022/02/07	13:24:02	32.1
252	2022/02/07	13:24:05	32.8
253	2022/02/07	13:24:08	32.4
254	2022/02/07	13:24:11	32.7
255	2022/02/07	13:24:14	33.0
256	2022/02/07	13:24:17	32.7
257	2022/02/07	13:24:20	32.8
258	2022/02/07	13:24:23	33.1
259	2022/02/07	13:24:26	33.8
260	2022/02/07	13:24:29	36.2
261	2022/02/07	13:24:32	34.8
262	2022/02/07	13:24:35	36.9
263	2022/02/07	13:24:38	35.8
264	2022/02/07	13:24:41	33.5
265	2022/02/07	13:24:44	32.4
266	2022/02/07	13:24:47	32.2
267	2022/02/07	13:24:50	31.6
268	2022/02/07	13:24:53	31.7
269	2022/02/07	13:24:56	32.4
270	2022/02/07	13:24:59	32.2
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273	2022/02/07	13:25:08	32.6
274	2022/02/07	13:25:11	32.4
275	2022/02/07	13:25:14	31.6
276	2022/02/07	13:25:17	32.0
277	2022/02/07	13:25:20	31.4
278	2022/02/07	13:25:23	30.9
279	2022/02/07	13:25:26	30.8
280	2022/02/07	13:25:29	30.8

281	2022/02/07	13:25:32	31.9
282	2022/02/07	13:25:35	32.0
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284	2022/02/07	13:25:41	31.8
285	2022/02/07	13:25:44	31.3
286	2022/02/07	13:25:47	31.3
287	2022/02/07	13:25:50	31.5
288	2022/02/07	13:25:53	30.8
289	2022/02/07	13:25:56	31.3
290	2022/02/07	13:25:59	31.1
291	2022/02/07	13:26:02	31.2
292	2022/02/07	13:26:05	31.1
293	2022/02/07	13:26:08	31.0
294	2022/02/07	13:26:11	30.9
295	2022/02/07	13:26:14	31.0
296	2022/02/07	13:26:17	31.5
297	2022/02/07	13:26:20	31.3
298	2022/02/07	13:26:23	31.4
299	2022/02/07	13:26:26	31.6
300	2022/02/07	13:26:29	31.3
301	2022/02/07	13:26:32	31.6
302	2022/02/07	13:26:35	31.5
303	2022/02/07	13:26:38	31.8
304	2022/02/07	13:26:41	31.3
305	2022/02/07	13:26:44	31.3
306	2022/02/07	13:26:47	31.6
307	2022/02/07	13:26:50	31.6
308	2022/02/07	13:26:53	31.6
309	2022/02/07	13:26:56	31.7
310	2022/02/07	13:26:59	31.1
311	2022/02/07	13:27:02	30.7
312	2022/02/07	13:27:05	30.6
313	2022/02/07	13:27:08	32.5
314	2022/02/07	13:27:11	31.9
315	2022/02/07	13:27:14	31.4
316	2022/02/07	13:27:17	33.4
317	2022/02/07	13:27:20	31.9
318	2022/02/07	13:27:23	31.9
319	2022/02/07	13:27:26	31.9
320	2022/02/07	13:27:29	31.3
321	2022/02/07	13:27:32	31.4
322	2022/02/07	13:27:35	31.0
323	2022/02/07	13:27:38	30.7
324	2022/02/07	13:27:41	30.7
325	2022/02/07	13:27:44	30.5
326	2022/02/07	13:27:47	30.4
327	2022/02/07	13:27:50	30.8
328	2022/02/07	13:27:53	30.7
329	2022/02/07	13:27:56	30.6
330	2022/02/07	13:27:59	30.4
331	2022/02/07	13:28:02	30.0
332	2022/02/07	13:28:05	30.3
333	2022/02/07	13:28:08	30.5
334	2022/02/07	13:28:11	36.2
335	2022/02/07	13:28:14	31.5
336	2022/02/07	13:28:17	31.2
337	2022/02/07	13:28:20	31.3
338	2022/02/07	13:28:23	31.3
339	2022/02/07	13:28:26	31.3
340	2022/02/07	13:28:29	34.6
341	2022/02/07	13:28:32	30.9
342	2022/02/07	13:28:35	31.0
343	2022/02/07	13:28:38	31.7
344	2022/02/07	13:28:41	31.3
345	2022/02/07	13:28:44	31.2
346	2022/02/07	13:28:47	30.7
347	2022/02/07	13:28:50	30.9
348	2022/02/07	13:28:53	30.9
349	2022/02/07	13:28:56	31.1
350	2022/02/07	13:28:59	31.2
351	2022/02/07	13:29:02	31.3
352	2022/02/07	13:29:05	31.0
353	2022/02/07	13:29:08	31.1
354	2022/02/07	13:29:11	31.2
355	2022/02/07	13:29:14	31.8
356	2022/02/07	13:29:17	31.6
357	2022/02/07	13:29:20	31.9
358	2022/02/07	13:29:23	32.3
359	2022/02/07	13:29:26	32.9
360	2022/02/07	13:29:29	35.0
361	2022/02/07	13:29:32	33.7
362	2022/02/07	13:29:35	32.4
363	2022/02/07	13:29:38	32.2
364	2022/02/07	13:29:41	32.7
365	2022/02/07	13:29:44	32.1
366	2022/02/07	13:29:47	32.3
367	2022/02/07	13:29:50	32.1
368	2022/02/07	13:29:53	35.6
369	2022/02/07	13:29:56	31.7
370	2022/02/07	13:29:59	31.2
371	2022/02/07	13:30:02	31.2
372	2022/02/07	13:30:05	31.2
373	2022/02/07	13:30:08	31.1
374	2022/02/07	13:30:11	31.0
375	2022/02/07	13:30:14	31.4
376	2022/02/07	13:30:17	31.3
377	2022/02/07	13:30:20	31.2
378	2022/02/07	13:30:23	31.5

379	2022/02/07	13:30:26	30.9
380	2022/02/07	13:30:29	31.1
381	2022/02/07	13:30:32	40.7
382	2022/02/07	13:30:35	33.1
383	2022/02/07	13:30:38	30.7
384	2022/02/07	13:30:41	30.6
385	2022/02/07	13:30:44	30.8
386	2022/02/07	13:30:47	31.6
387	2022/02/07	13:30:50	30.3
388	2022/02/07	13:30:53	30.4
389	2022/02/07	13:30:56	30.5
390	2022/02/07	13:30:59	31.1
391	2022/02/07	13:31:02	31.2
392	2022/02/07	13:31:05	31.8
393	2022/02/07	13:31:08	31.9
394	2022/02/07	13:31:11	34.0
395	2022/02/07	13:31:14	37.6
396	2022/02/07	13:31:17	38.2
397	2022/02/07	13:31:20	37.7
398	2022/02/07	13:31:23	38.9
399	2022/02/07	13:31:26	34.1
400	2022/02/07	13:31:29	32.6
401	2022/02/07	13:31:32	43.4*
402	2022/02/07	13:31:35	60.2*
403	2022/02/07	13:31:38	55.5*
404	2022/02/07	13:31:41	52.0*
405	2022/02/07	13:31:44	55.8*
406	2022/02/07	13:31:47	54.9*
407	2022/02/07	13:31:50	51.7*
408	2022/02/07	13:31:53	56.5*
409	2022/02/07	13:31:56	61.5*
410	2022/02/07	13:31:59	57.9*
411	2022/02/07	13:32:02	57.1*
412	2022/02/07	13:32:05	60.1*
413	2022/02/07	13:32:08	54.8*
414	2022/02/07	13:32:11	52.0*
415	2022/02/07	13:32:14	59.6*
416	2022/02/07	13:32:17	57.3*
417	2022/02/07	13:32:20	52.3*
418	2022/02/07	13:32:23	60.5*
419	2022/02/07	13:32:26	62.7*
420	2022/02/07	13:32:29	57.1*
421	2022/02/07	13:32:32	60.7*
422	2022/02/07	13:32:35	61.2*
423	2022/02/07	13:32:38	58.3*
424	2022/02/07	13:32:41	56.3*
425	2022/02/07	13:32:44	59.2*
426	2022/02/07	13:32:47	62.5*
427	2022/02/07	13:32:50	62.8*
428	2022/02/07	13:32:53	63.2*
429	2022/02/07	13:32:56	57.3*
430	2022/02/07	13:32:59	58.8*
431	2022/02/07	13:33:02	62.8*
432	2022/02/07	13:33:05	59.3*
433	2022/02/07	13:33:08	61.6*
434	2022/02/07	13:33:11	60.5*
435	2022/02/07	13:33:14	60.7*
436	2022/02/07	13:33:17	66.4*
437	2022/02/07	13:33:20	62.4*
438	2022/02/07	13:33:23	58.0*
439	2022/02/07	13:33:26	61.4*
440	2022/02/07	13:33:29	65.3*
441	2022/02/07	13:33:32	62.8*
442	2022/02/07	13:33:35	61.5*
443	2022/02/07	13:33:38	60.3*
444	2022/02/07	13:33:41	56.3*
445	2022/02/07	13:33:44	60.5*
446	2022/02/07	13:33:47	54.4
447	2022/02/07	13:33:50	59.0
448	2022/02/07	13:33:53	57.1
449	2022/02/07	13:33:56	54.9
450	2022/02/07	13:33:59	57.0
451	2022/02/07	13:34:02	53.5
452	2022/02/07	13:34:05	49.1
453	2022/02/07	13:34:08	53.2
454	2022/02/07	13:34:11	60.4
455	2022/02/07	13:34:14	54.9
456	2022/02/07	13:34:17	59.2
457	2022/02/07	13:34:20	59.5
458	2022/02/07	13:34:23	59.5
459	2022/02/07	13:34:26	60.5
460	2022/02/07	13:34:29	59.7
461	2022/02/07	13:34:32	58.9
462	2022/02/07	13:34:35	63.6
463	2022/02/07	13:34:38	61.9
464	2022/02/07	13:34:41	53.4

38HDR

ELECTRICAL DATA

38HDR UNIT SIZE	V–PH–Hz	VOLTAGE RANGE*		COMPRESSOR		OUTDOOR FAN MOTOR			MIN CKT AMPS	FUSE/ HACR BKR AMPS
		Min	Max	RLA	LRA	FLA	NEC Hp	kW Out		
018	208/230–1–60	187	253	9.0	48.0	0.80	0.125	0.09	12.1	20
024	208/230–1–60	187	253	12.8	58.3	0.80	0.125	0.09	16.8	25
030	208/230–1–60	187	253	14.1	73.0	1.45	0.25	0.19	19.1	30
036	208/230–1–60	187	253	14.1	77.0	1.45	0.25	0.19	19.1	30
	208/230–3–60	187	253	9.0	71.0	1.45	0.25	0.19	12.7	20
	460–3–60	414	506	5.6	38.0	0.80	0.25	0.19	7.8	15
048	208/230–1–60	187	253	21.8	117.0	1.45	0.25	0.19	28.7	50
	208/230–3–60	187	253	13.7	83.1	1.45	0.25	0.19	18.6	30
	460–3–60	414	506	6.2	41.0	0.80	0.25	0.19	8.6	15
060	208/230–1–60	187	253	26.4	134.0	1.45	0.25	0.19	34.5	60
	208/230–3–60	187	253	16.0	110.0	1.45	0.25	0.19	21.5	35
	460–3–60	414	506	7.8	52.0	0.80	0.25	0.19	10.6	15

* Permissible limits of the voltage range at which the unit will operate satisfactorily

FLA – Full Load Amps
HACR – Heating, Air Conditininng, Refrigeration
LRA – Locked Rotor Amps
NEC – National Electrical Code
RLA – Rated Load Amps (compressor)

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

SOUND LEVEL

Unit Size	Standard Rating (dB)	Typical Octave Band Spectrum (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018	68	52.0	57.5	60.5	63.5	60.5	57.5	46.5
024	69	57.5	61.5	63.0	61.0	60.0	56.0	45.0
030	72	56.5	63.0	65.0	66.0	64.0	62.5	57.0
036	72	65.0	61.5	63.5	65.0	64.5	61.0	54.5
048	72	58.5	61.0	64.0	67.5	66.0	64.0	57.0
060	72	63.0	61.5	64.0	66.5	66.0	64.5	55.5

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE–VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C)
018	12 (6.7)
024	12 (6.7)
030	12 (6.7)
036	12 (6.7)
048	12 (6.7)
060	12 (6.7)

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 5/19/2022
Case Description: 20-10682 Lee Subdiv EIR - Grading

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	80	80	80

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40		81.7	100	0
Excavator	No	40		80.7	100	0
Front End Loader	No	40		79.1	100	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Dozer		75.6	71.7
Excavator		74.7	70.7
Front End Loader		73.1	69.1
	Total	75.6	75.4

*Calculated Lmax is the Loudest value.

Appendix ___

Rincon FHWA Traffic Noise Model

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Existing		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment From	Segment To	Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%) Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	24-Hour Traffic Distribution (%) Day	Evening	Night	K-Factor
1	Airline Highway	Union Road	Valaire Drive	11,360	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	7,040	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	9,720	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	9,080	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	3,840	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	NA	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	3,840	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	7,140	45	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	1,710	35	30	97			2	1	85		15	

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Existing
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment From	Segment To	Noise Levels (dB) ldn Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	73.3	0.0	0.0	61.9	63.2	73.9
2	Union Road	Airline Highway	Valley View Road	68.4	0.0	0.0	58.2	59.8	69.3
3	Union Road	Airline Highway	Southside Road	69.8	0.0	0.0	59.6	61.2	70.7
4	Airline Highway	Union Road	Enterprise Road	72.3	0.0	0.0	60.9	62.2	73.0
5	Fairview Road	Union Road	John Smith Road	65.7	0.0	0.0	55.6	57.2	66.7
6	Union Road	Fairview Road	Calistoga Drive	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
7	Fairview Road	Union Road	Maranatha Drive	65.7	0.0	0.0	55.6	57.2	66.7
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	68.4	0.0	0.0	58.3	59.9	69.4
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	59.1	0.0	0.0	49.4	51.4	60.1

Distance to Traffic Noise Contours (feet) 70 dB	65 dB	60 dB	55 dB	50 dB
62	196	621	1,963	6,208
17	54	170	537	1,698
23	74	234	741	2,345
50	157	496	1,569	4,962
9	29	93	293	926
#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
9	29	93	293	926
17	54	172	545	1,722
3	10	31	98	309

Appendix ___

Rincon FHWA Traffic Noise Model

rincon

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Existing		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Sunnnyslope Road	Fairview Road	Beverly Drive	4,460	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	4,430	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	3,840	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	5,320	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	7,690	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	3,790	30	20	97			2	1	85		15	

rincon

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Existing
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	63.2	0.0	0.0	53.5	55.6	64.3
2	Fairview Road	Sunnnyslope Road	John Smith Road	66.4	0.0	0.0	56.2	57.8	67.3
3	Fairview Road	Airline Highway	Old Ranch Road	65.7	0.0	0.0	55.6	57.2	66.7
4	Airline Highway	Fairview Road	Best Road	70.0	0.0	0.0	58.6	59.9	70.7
5	Airline Highway	Fairview Road	Enterprise Road	71.6	0.0	0.0	60.2	61.5	72.3
6	Ridgemark Drive	Airline Highway	Joes Lane	64.0	0.0	0.0	54.4	56.7	65.1

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
8	25	80	254	805
11	34	107	338	1,069
9	29	93	293	926
29	92	291	919	2,907
42	133	420	1,329	4,202
6	20	65	205	648

Appendix ___

Rincon FHWA Traffic Noise Model

rincon

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Existing Plus Project		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment From	Segment To	Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%) Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	24-Hour Traffic Distribution (%) Day	Evening	Night	K-Factor
1	Airline Highway	Union Road	Valaire Drive	11,690	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	7,070	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	9,960	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	9,680	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	4,770	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	NA	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	4,770	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	7,780	45	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	1,710	25	30	97			2	1	85		15	

rincon

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Existing Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment From	Segment To	Noise Levels (dB) ldn Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	73.4	0.0	0.0	62.0	63.3	74.1
2	Union Road	Airline Highway	Valley View Road	68.4	0.0	0.0	58.2	59.8	69.3
3	Union Road	Airline Highway	Southside Road	69.9	0.0	0.0	59.7	61.3	70.8
4	Airline Highway	Union Road	Enterprise Road	72.6	0.0	0.0	61.2	62.5	73.3
5	Fairview Road	Union Road	John Smith Road	66.7	0.0	0.0	56.5	58.1	67.6
6	Union Road	Fairview Road	Calistoga Drive	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
7	Fairview Road	Union Road	Maranatha Drive	66.7	0.0	0.0	56.5	58.1	67.6
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	68.8	0.0	0.0	58.6	60.3	69.7
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	58.9	0.0	0.0	49.3	51.8	60.0

Distance to Traffic Noise Contours (feet) 70 dB	65 dB	60 dB	55 dB	50 dB
64	202	639	2,020	6,388
17	54	171	539	1,705
24	76	240	760	2,403
53	167	529	1,673	5,290
12	36	115	364	1,151
#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
12	36	115	364	1,151
19	59	188	593	1,877
3	10	30	95	302

Appendix ___

Rincon FHWA Traffic Noise Model

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Existing Plus Project		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment From	Segment To	Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%) Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	24-Hour Traffic Distribution (%) Day	Evening	Night	K-Factor
1	Sunnnyslope Road	Fairview Road	Beverly Drive	4,760	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	5,370	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	4,500	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	5,380	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	8,290	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	3,950	30	20	97			2	1	85		15	

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Existing Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment From	Segment To	Noise Levels (dB) ldn Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	63.5	0.0	0.0	53.8	55.8	64.6
2	Fairview Road	Sunnnyslope Road	John Smith Road	67.2	0.0	0.0	57.0	58.6	68.1
3	Fairview Road	Airline Highway	Old Ranch Road	66.4	0.0	0.0	56.2	57.9	67.3
4	Airline Highway	Fairview Road	Best Road	70.0	0.0	0.0	58.6	59.9	70.7
5	Airline Highway	Fairview Road	Enterprise Road	71.9	0.0	0.0	60.5	61.8	72.6
6	Ridgemark Drive	Airline Highway	Joes Lane	64.2	0.0	0.0	54.6	56.9	65.3

Distance to Traffic Noise Contours (feet) 70 dB	65 dB	60 dB	55 dB	50 dB
9	27	86	272	859
13	41	130	410	1,295
11	34	109	343	1,086
29	93	294	930	2,940
45	143	453	1,433	4,530
7	21	67	213	675

Appendix ___

Rincon FHWA Traffic Noise Model

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Model Input

Project Name :	Lee Subdivision EIR			
Project Number :	20-10682			
Modeling Condition :	Background			
Ground Type :	Hard		**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn		**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Airline Highway	Union Road	Valaire Drive	18,330	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	10,810	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	14,600	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	12,780	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	9,170	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	4,340	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	6,630	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	13,480	45	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	7,910	35	30	97			2	1	85		15	

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Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Background
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	75.3	0.0	0.0	63.9	65.3	76.0
2	Union Road	Airline Highway	Valley View Road	70.2	0.0	0.0	60.1	61.7	71.2
3	Union Road	Airline Highway	Southside Road	71.5	0.0	0.0	61.4	63.0	72.5
4	Airline Highway	Union Road	Enterprise Road	73.8	0.0	0.0	62.4	63.7	74.5
5	Fairview Road	Union Road	John Smith Road	69.5	0.0	0.0	59.3	61.0	70.4
6	Union Road	Fairview Road	Calistoga Drive	66.3	0.0	0.0	56.1	57.7	67.2
7	Fairview Road	Union Road	Maranatha Drive	68.1	0.0	0.0	57.9	59.6	69.0
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	71.2	0.0	0.0	61.0	62.6	72.1
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	65.7	0.0	0.0	56.0	58.1	66.8

Segment Number	Distance to Traffic Noise Contours (feet)				
	70 dB	65 dB	60 dB	55 dB	50 dB
1	100	317	1,002	3,168	10,017
2	26	82	261	825	2,608
3	35	111	352	1,114	3,522
4	70	221	698	2,208	6,984
5	22	70	221	700	2,212
6	10	33	105	331	1,047
7	16	51	160	506	1,599
8	33	103	325	1,028	3,252
9	14	45	143	451	1,427

Appendix ___

Rincon FHWA Traffic Noise Model

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Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Background		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment From	Segment To	Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%) Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	24-Hour Traffic Distribution (%) Day	Evening	Night	K-Factor
1	Sunnnyslope Road	Fairview Road	Beverly Drive	10,700	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	9,950	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	5,850	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	7,640	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	9,860	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	6,060	30	20	97			2	1	85		15	

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Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Background
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment From	Segment To	Noise Levels (dB) ldn Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	67.0	0.0	0.0	57.3	59.4	68.1
2	Fairview Road	Sunnnyslope Road	John Smith Road	69.9	0.0	0.0	59.7	61.3	70.8
3	Fairview Road	Airline Highway	Old Ranch Road	67.6	0.0	0.0	57.4	59.0	68.5
4	Airline Highway	Fairview Road	Best Road	71.5	0.0	0.0	60.1	61.5	72.2
5	Airline Highway	Fairview Road	Enterprise Road	72.7	0.0	0.0	61.3	62.6	73.3
6	Ridgemark Drive	Airline Highway	Joes Lane	66.0	0.0	0.0	56.4	58.7	67.1

Distance to Traffic Noise Contours (feet) 70 dB	65 dB	60 dB	55 dB	50 dB
19	61	193	611	1,931
24	76	240	759	2,400
14	45	141	446	1,411
42	132	417	1,320	4,175
54	170	539	1,704	5,388
10	33	104	327	1,035

Appendix ___

Rincon FHWA Traffic Noise Model

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Background Plus Project		
Ground Type :	Hard	**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Airline Highway	Union Road	Valaire Drive	18,990	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	11,430	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	14,840	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	13,060	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	9,770	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	4,990	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	7,880	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	13,910	25	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	7,910	25	30	97			2	1	85		15	

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Background Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	75.5	0.0	0.0	64.1	65.4	76.2
2	Union Road	Airline Highway	Valley View Road	70.5	0.0	0.0	60.3	61.9	71.4
3	Union Road	Airline Highway	Southside Road	71.6	0.0	0.0	61.4	63.1	72.5
4	Airline Highway	Union Road	Enterprise Road	73.9	0.0	0.0	62.5	63.8	74.6
5	Fairview Road	Union Road	John Smith Road	69.8	0.0	0.0	59.6	61.2	70.7
6	Union Road	Fairview Road	Calistoga Drive	66.9	0.0	0.0	56.7	58.3	67.8
7	Fairview Road	Union Road	Maranatha Drive	68.9	0.0	0.0	58.7	60.3	69.8
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	69.7	0.0	0.0	60.1	62.7	70.9
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	65.5	0.0	0.0	55.9	58.5	66.7

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
104	328	1,038	3,282	10,377
28	87	276	872	2,757
36	113	358	1,132	3,580
71	226	714	2,257	7,137
24	75	236	745	2,357
12	38	120	381	1,204
19	60	190	601	1,901
25	78	245	776	2,454
14	44	140	441	1,395

Appendix ___

Rincon FHWA Traffic Noise Model

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Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Background Plus Project		
Ground Type :	Hard	**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Sunnyslope Road	Fairview Road	Beverly Drive	10,870	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	10,550	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	6,190	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	7,700	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	10,140	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	4,130	30	20	97			2	1	85		15	
										2	1			15	
										2	1			15	
										2	1			15	

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Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Background Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	67.1	0.0	0.0	57.4	59.4	68.2
2	Fairview Road	Sunnnyslope Road	John Smith Road	70.1	0.0	0.0	59.9	61.6	71.0
3	Fairview Road	Airline Highway	Old Ranch Road	67.8	0.0	0.0	57.6	59.3	68.7
4	Airline Highway	Fairview Road	Best Road	71.6	0.0	0.0	60.2	61.5	72.3
5	Airline Highway	Fairview Road	Enterprise Road	72.8	0.0	0.0	61.4	62.7	73.5
6	Ridgemark Drive	Airline Highway	Joes Lane	64.3	0.0	0.0	54.8	57.1	65.5

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
20	62	196	620	1,961
25	80	254	805	2,545
15	47	149	472	1,493
42	133	421	1,331	4,208
55	175	554	1,752	5,541
7	22	71	223	706

Appendix ___

Rincon FHWA Traffic Noise Model

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Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Cumulative		
Ground Type :	Hard	**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Airline Highway	Union Road	Valaire Drive	34,990	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	15,020	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	17,430	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	29,060	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	11,330	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	4,430	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	8,320	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	15,370	45	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	7,910	35	30	97			2	1	85		15	

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Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Cumulative
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	78.2	0.0	0.0	66.8	68.1	78.8
2	Union Road	Airline Highway	Valley View Road	71.7	0.0	0.0	61.5	63.1	72.6
3	Union Road	Airline Highway	Southside Road	72.3	0.0	0.0	62.1	63.8	73.2
4	Airline Highway	Union Road	Enterprise Road	77.3	0.0	0.0	65.9	67.3	78.0
5	Fairview Road	Union Road	John Smith Road	70.4	0.0	0.0	60.3	61.9	71.4
6	Union Road	Fairview Road	Calistoga Drive	66.4	0.0	0.0	56.2	57.8	67.3
7	Fairview Road	Union Road	Maranatha Drive	69.1	0.0	0.0	58.9	60.5	70.0
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	71.8	0.0	0.0	61.6	63.2	72.7
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	65.7	0.0	0.0	56.0	58.1	66.8

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
191	605	1,912	6,047	19,121
36	115	362	1,146	3,623
42	133	420	1,330	4,205
159	502	1,588	5,022	15,880
27	86	273	864	2,733
11	34	107	338	1,069
20	63	201	635	2,007
37	117	371	1,172	3,708
14	45	143	451	1,427

Appendix ___

Rincon FHWA Traffic Noise Model

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Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Cumulative		
Ground Type :	Hard	Peak ratio to ADT:	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	Traffic Desc. (Peak or ADT) :	ADT

Segment Number	Roadway	Segment From	Segment To	Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%) Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	24-Hour Traffic Distribution (%) Day	Evening	Night	K-Factor
1	Sunnnyslope Road	Fairview Road	Beverly Drive	10,880	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	11,980	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	7,540	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	22,280	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	26,140	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	7,400	30	20	97			2	1	85		15	

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Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Cumulative
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment From	Segment To	Noise Levels (dB) ldn Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	67.1	0.0	0.0	57.4	59.4	68.2
2	Fairview Road	Sunnnyslope Road	John Smith Road	70.7	0.0	0.0	60.5	62.1	71.6
3	Fairview Road	Airline Highway	Old Ranch Road	68.7	0.0	0.0	58.5	60.1	69.6
4	Airline Highway	Fairview Road	Best Road	76.2	0.0	0.0	64.8	66.1	76.9
5	Airline Highway	Fairview Road	Enterprise Road	76.9	0.0	0.0	65.5	66.8	77.6
6	Ridgemark Drive	Airline Highway	Joes Lane	66.9	0.0	0.0	57.3	59.6	68.0

Distance to Traffic Noise Contours (feet) 70 dB	65 dB	60 dB	55 dB	50 dB
20	62	196	621	1,963
29	91	289	914	2,890
18	58	182	575	1,819
122	385	1,218	3,850	12,175
143	452	1,428	4,517	14,285
13	40	126	400	1,264

Appendix ___

Rincon FHWA Traffic Noise Model

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Cumulative Plus Project		
Ground Type :	Hard	**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Airline Highway	Union Road	Valaire Drive	35,650	65	25	97			2	1	85		15	
2	Union Road	Airline Highway	Valley View Road	15,640	45	20	97			2	1	85		15	
3	Union Road	Airline Highway	Southside Road	17,670	45	20	97			2	1	85		15	
4	Airline Highway	Union Road	Enterprise Road	29,340	65	25	97			2	1	85		15	
5	Fairview Road	Union Road	John Smith Road	11,550	45	20	97			2	1	85		15	
6	Union Road	Fairview Road	Calistoga Drive	5,080	45	20	97			2	1	85		15	
7	Fairview Road	Union Road	Maranatha Drive	9,570	45	20	97			2	1	85		15	
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	15,800	45	20	97			2	1	85		15	
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	7,910	35	30	97			2	1	85		15	

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Cumulative Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Airline Highway	Union Road	Valaire Drive	78.2	0.0	0.0	66.8	68.1	78.9
2	Union Road	Airline Highway	Valley View Road	71.8	0.0	0.0	61.7	63.3	72.8
3	Union Road	Airline Highway	Southside Road	72.4	0.0	0.0	62.2	63.8	73.3
4	Airline Highway	Union Road	Enterprise Road	77.4	0.0	0.0	66.0	67.3	78.1
5	Fairview Road	Union Road	John Smith Road	70.5	0.0	0.0	60.3	62.0	71.4
6	Union Road	Fairview Road	Calistoga Drive	67.0	0.0	0.0	56.8	58.4	67.9
7	Fairview Road	Union Road	Maranatha Drive	69.7	0.0	0.0	59.5	61.2	70.6
8	Fairview Road	Sunnnyslope Road	Hillcrest Road	71.9	0.0	0.0	61.7	63.3	72.8
9	Sunnnyslope Road	Fairview Road	Sunflower Drive	65.7	0.0	0.0	56.0	58.1	66.8

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
195	616	1,948	6,161	19,481
38	119	377	1,193	3,773
43	135	426	1,348	4,262
160	507	1,603	5,070	16,033
28	88	279	881	2,786
12	39	123	388	1,225
23	73	231	730	2,309
38	121	381	1,205	3,811
14	45	143	451	1,427

Appendix ___

Rincon FHWA Traffic Noise Model

Model Input

Project Name :	Lee Subdivision EIR		
Project Number :	20-10682		
Modeling Condition :	Cumulative Plus Project		
Ground Type :	Hard	**Peak ratio to ADT:**	
Metric (L_{eq}, L_{dn}, CNEL) :	ldn	**Traffic Desc. (Peak or ADT) :**	ADT

Segment Number	Roadway	Segment		Traffic Volume	Speed (mph)	Distance to Centerline	Vehicle Cassification Mix (%)					24-Hour Traffic Distribution (%)			K-Factor
		From	To				Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Day	Evening	Night	
1	Sunnnyslope Road	Fairview Road	Beverly Drive	11,050	35	30	97			2	1	85		15	
2	Fairview Road	Sunnnyslope Road	John Smith Road	12,580	45	20	97			2	1	85		15	
3	Fairview Road	Airline Highway	Old Ranch Road	7,880	45	20	97			2	1	85		15	
4	Airline Highway	Fairview Road	Best Road	22,340	65	25	97			2	1	85		15	
5	Airline Highway	Fairview Road	Enterprise Road	26,420	65	25	97			2	1	85		15	
6	Ridgemark Drive	Airline Highway	Joes Lane	7,400	30	20	97			2	1	85		15	
										2	1			15	
										2	1			15	
										2	1			15	

Model Results

Project Number :	Lee Subdivision EIR
Modeling Condition :	20-10682
Ground Type :	Cumulative Plus Project
Metric (Leq, Ldn, CNEL) :	ldn

Segment Number	Roadway	Segment		Noise Levels (dB) ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Sunnnyslope Road	Fairview Road	Beverly Drive	67.2	0.0	0.0	57.5	59.5	68.2
2	Fairview Road	Sunnnyslope Road	John Smith Road	70.9	0.0	0.0	60.7	62.3	71.8
3	Fairview Road	Airline Highway	Old Ranch Road	68.9	0.0	0.0	58.7	60.3	69.8
4	Airline Highway	Fairview Road	Best Road	76.2	0.0	0.0	64.8	66.1	76.9
5	Airline Highway	Fairview Road	Enterprise Road	76.9	0.0	0.0	65.5	66.8	77.6
6	Ridgemark Drive	Airline Highway	Joes Lane	66.9	0.0	0.0	57.3	59.6	68.0

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
20	63	199	630	1,994
30	96	303	960	3,035
19	60	190	601	1,901
122	386	1,221	3,861	12,208
144	457	1,444	4,566	14,438
13	40	126	400	1,264

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/2/2022
Case Description: Lee Subdivision Project - Pipeline Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residential	Residential	80	80	80

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	40	0
Front End Loader	No	40		79.1	40	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Concrete Saw		91.5	84.5
Front End Loader		81	77.1
	Total	91.5	85.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/2/2022
Case Description: Lee Subdivision Project - Pipeline Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residential	Residential	80	80	80

Equipment

	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	80	0
Front End Loader	No	40		79.1	80	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Saw		85.5	78.5
Front End Loader		75	71
	Total	85.5	79.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 5/19/2022
Case Description: 20-10682 Lee Subdiv EIR - Grading

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	80	80	80

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40		81.7	100	0
Excavator	No	40		80.7	100	0
Front End Loader	No	40		79.1	100	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Dozer		75.6	71.7
Excavator		74.7	70.7
Front End Loader		73.1	69.1
	Total	75.6	75.4

*Calculated Lmax is the Loudest value.

Model CSSB-2 Construction Site Sound Blankets

eNoise Control
129 Penn St, Westfield, IN 46074
Phone 888.213.4711 Fax 317-774-1911

Product Features:

- Weatherproof
- Outdoor use/Sheds water
- 2” thick, quilted exterior rated facing
- Grommets for easy attachment to a fence
- STC-21, estimated 10-20 decibel reduction
- In-stock option for quick ship

eNoise Control’s Construction Site Sound Blankets are used to block noise on construction sites, drilling sites, compressor stations, and other outdoor noise sources. Our Model CSSB-2 consists of a UV resistant, heavy duty 10 ounce per square yard vinyl coated polyester (VCP) facing on both sides of a nominal 2” thick quilted fiberglass. Sound Blankets are constructed with grommets and sewn with Gore Tenara exterior grade thread for maximum longevity. The sound blankets can simply be zip-tied to your existing chain link perimeter fence, wood fence, jersey barrier fencing, or support framing.

Specification:

Supply weatherproof, exterior-rated quilted sound blankets for sound barrier and visual barrier at construction site perimeter. Material shall be nominal 2” thick, diamond stitched UV resistant 10 ounce per square yard vinyl coated polyester (VCP) faced both sides. Sewn using exterior-rated Gore Tenara thread. Grommets integrated into blankets for securing to job site fencing. Minimum STC-21 rating. Minimum NRC-0.75 rating. Secure blankets with no visual gaps at joints and tight to ground level, complying to manufacturers installation guidelines. Use Model CSSB-2, Construction Site Sound Blanket manufactured by eNoise Control, 129 Penn St, Westfield, IN 46074, 888.213.4711, info@enoisecontrol.com.

Technical Data:

Facing	UV resistant, weather proof VCP both sides
Thickness	Nominal 2.00” [1.5” post fabrication]
Standard Width	48”
Weight	0.50 lb-psf
Temperature Range	-40° to +180°F
Sound Data Summary	STC-21, NRC-0.75

SOUND ABSORPTION (ASTM C-423)						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
.46	.94	.85	.64	.47	.33	.75

SOUND TRANSMISSION LOSS (ASTM E-90 & E-413)						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	STC
9	14	19	21	27	34	21

Appendix H

Transportation Analysis

Hexagon Transportation Consultants, Inc.

Lee Subdivision Residential

Draft Transportation Analysis

Prepared for:

KB Home

May 13, 2022

Hexagon Transportation Consultants, Inc.
Hexagon Office: 8070 Santa Teresa Boulevard, Suite 230
Gilroy, CA 95020
Hexagon Job Number: 22RD02
Phone: 408.846.7410

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Executive Summary

This report presents the results of a Transportation Analysis (TA) for the proposed residential development located at 291 Old Ranch Road in unincorporated San Benito County. The project site encompasses most of APN 025-320-004 and is located at the end of Old Ranch Road (see Figure 1). The project proposes to extend the existing segment of Old Ranch Road into the project site to provide access from Fairview Road.

The project, as proposed, would allow for the subdivision of 141 residential lots, consisting of 121 single family homes and 20 single-family duet units. The project also proposes to allow for the construction of up to 25 accessory dwelling units (ADUs) as an option to home buyers. The project would include the construction of internal streets and a park. The project site plan is shown on Figure 2.

Transportation Analysis Scope

The transportation analysis consists of a California Environmental Quality Act (CEQA) required vehicle-miles-traveled (VMT) analysis and a supplemental traffic operations analysis that demonstrates the project's consistency with the *San Benito County General Plan* goals and policies. The TA was evaluated following the standards and methodologies set forth in the San Benito County *Draft SB 743 Implementation Policy* and by the California Environmental Quality Act (CEQA).

CEQA Transportation Analysis Scope

The CEQA transportation analysis for the project consists of a project-level VMT impact analysis using the County's Travel Demand Forecasting (TDF) Model.

Transportation Operations Analysis Scope

The transportation operations analysis includes the evaluation of weekday AM and PM peak hour operations at selected intersections for the purpose of identifying operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site. The transportation operations analysis also includes an evaluation of the effects of the project on other transportation issues related to on-site access, on-site circulation, sight distance, pedestrian, bicycle, and transit facilities in the immediate area of the project.

CEQA VMT Analysis

Project-Level VMT Impact Analysis

The results of the VMT analysis, using the County's model, indicates that the proposed project is projected to generate 21.3 VMT per capita. Because the project's VMT per capita would exceed the impact threshold of 19.6 VMT per capita, the proposed project would have an impact on the transportation system based on the County's VMT impact criteria.

Project Impacts and Mitigation Measures

Project Impact: Since the VMT generated by the project (21.3 VMT per capita) would exceed the threshold of 19.6 VMT per capita, the project would result in a significant transportation impact on VMT. Therefore, mitigation measures are required to reduce the VMT impact. Per the county's impact thresholds, the project would need to implement VMT reduction measures to achieve an 8 percent reduction (21.3 to 19.6) in its VMT per capita for the proposed residential uses to reduce its impact to less than significant levels.

The County's policy identifies the following TDM measures for residential uses:

- T-8 Subsidized Transit Program: Provide subsidized or discounted, or free transit passes for residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving increasing the total number of transit trips and decreasing vehicle trips.
- T-22 Community-Based Travel Planning: Target residences in the community with community-based travel planning (CBTP). CBTP is a residential based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles.
- T-17 Pedestrian Network Improvement: Increase sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive.
- T-18 Construct or Improve Bike Facility: Construct or improve a single bicycle lane facility that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area.

However, the implementation of the above measures and resulting reduction in VMT presumes that there are robust existing transit services, and an existing bicycle and pedestrian network. Since the supporting transit, bicycle, and pedestrian facilities do not exist, the VMT per capita would still be greater than the County's recommended impact threshold of 19.6 VMT per capita with the implementation of the identified measures.

The County's 15% below existing VMT impact threshold (also recommended by the OPR) encourages developments in transit-rich, highly mixed-use areas to implement design features and trip reduction measures to take advantage of existing multi-model infrastructure and land use mixes in reducing trip making and/or trip lengths. However, the project is located in a rural setting with very limited multi-modal transportation infrastructure and low mixture of complementary land uses. The lack of major transit options results in a greater number and longer commute trips. Therefore, it is highly unlikely that residential developments like the proposed project in the County can achieve the 15% reduction in VMT. Therefore, absent of the County reducing its adopted VMT impact thresholds, the proposed project's VMT impact must be deemed significant and unavoidable.

Transportation Operations Analysis

The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection operation is not considered a CEQA impact metric. The transportation operations analysis includes the analysis of AM and PM peak-hour traffic conditions for eleven signalized intersections and four unsignalized intersections. The intersections were evaluated using Synchro software, utilizing the Highway Capacity Manual 6th Edition (HCM 6) methodology.

Trip Generation

Based on the trip generation rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*, it is estimated that the project would generate 1,608 daily vehicle trips, with 118 trips (31 inbound and 87 outbound) occurring during the AM peak hour and 160 trips (101 inbound and 59 outbound) occurring during the PM peak hour.

Intersection Operation Analysis

The results of the intersection operations analysis are summarized in Table ES-1.

Existing Plus Project Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the addition of project-generated trips would not adversely affect traffic operations at any of the study intersections under existing plus project conditions.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the unsignalized study intersections currently have and will continue to have traffic conditions that fall below the thresholds that warrant signalization with the addition of project-generated trips.

Background Intersection Operation Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the following three intersections would be adversely affected by the project under background plus project conditions:

1. Airline Highway and Union Road CT (**Adverse Effect**)
11. Fairview Road and Hillcrest Road SBC (**Adverse Effect**)
15. Enterprise Road and Airline Highway CT (**Adverse Effect**)

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the following two intersections would have traffic conditions that meet the thresholds that warrant signalization and would be adversely affected by the project under background plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road SBC (**Adverse Effect**)
15. Enterprise Road and Airline Highway CT (**Adverse Effect**)

The potential improvement measures that may be included as part of the project's Conditions of Approval are described below.

1. Airline Highway and Union Road (Caltrans)

The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve delay and LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

11. Fairview Road and Hillcrest Road (County)

The installation of a traffic signal at this intersection as part of the widening of Fairview Road to four lanes between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward implementation of improvements at this intersection.

<u>Cumulative Conditions</u>

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the following nine intersections would be adversely affected by the project under cumulative plus project conditions:

1. Airline Highway and Union Road [CT] (**Adverse Effect)**
3. Airline Highway and Union Road [CT] (**Adverse Effect)**
5. SR 25 and Hillcrest Road [CT] (**Adverse Effect)**
6. SR 25 and Meridian Street [CT] (**Adverse Effect)**
7. SR 25 and Santa Ana Road [CT] (**Adverse Effect)**
8. San Felipe Road and SR 25 [CT] (**Adverse Effect)**
11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect)**
14. South Ridgemark Drive/Best Road and Airline Highway [CT] (**Adverse Effect)**
15. Fairview Road/Ridgemark Drive and Airline Highway [CT] (**Adverse Effect)**

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the following three intersections would have traffic conditions that meet the thresholds that warrant signalization and would be adversely affected by the project under cumulative plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect)**
14. Fairview Road/Ridgemark Drive and Airline Highway [CT] (**Adverse Effect)**
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect)**

The potential improvement measures that may be included as part of the project's Conditions of Approval are described below.

1. Airline Highway and Union Road (Caltrans)

The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF).

In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

3. SR 25 and Sunnyslope Road/Tres Pinos Road (Caltrans)

Necessary improvements at this intersection include the addition of a separate northbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

5. SR 25 and Hillcrest Road (Caltrans)

Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

6. SR 25 and Meridian Street (Caltrans)

Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

7. SR 25 and Santa Ana Road (Caltrans)

Necessary improvements at this intersection include the addition of a separate eastbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

8. San Felipe Road and SR 25 (Caltrans)

Necessary improvements at this intersection include the addition of a second eastbound right-turn lane. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

11. Fairview Road and Hillcrest Road (County)

The installation of a traffic signal at the intersection as part of the widening of Fairview Road between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

14. Fairview Road/Ridgemark Drive and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection

Table ES- 1
Intersection Level of Service Summary

#	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Int. Control	Existing			Existing Plus Project			
							Warrant Met?[3]	Delay[1]	LOS	Warrant Met?[3]	Delay[1]	LOS	Change in Delay[2]
1	Airline Highway and Union Road	Caltrans	D	AM	05/22/19	Signal	--	49.4	D	--	53.5	D	4.1
				PM	05/22/19		--	41.9	D	--	47.3	D	5.4
2	Airline Highway and Sunset Drive	Caltrans	D	AM	05/22/19	Signal	--	11.1	B	--	11.1	B	0.0
				PM	05/22/19		--	9.8	A	--	9.9	A	0.1
3	SR 25 and Sunnyslope Road/Tres Pinos Road	Caltrans	D	AM	05/22/19	Signal	--	19.0	B	--	19.1	B	0.1
				PM	05/22/19		--	17.6	B	--	17.8	B	0.2
4	SR 25 and East Park Street	Caltrans	D	AM	05/22/19	Signal	--	6.6	A	--	6.6	A	0.0
				PM	05/22/19		--	5.4	A	--	5.3	A	-0.1
5	SR 25 and Hillcrest Road	Caltrans	D	AM	05/22/19	Signal	--	19.6	B	--	20.0	B	0.4
				PM	05/22/19		--	17.9	B	--	18.2	B	0.3
6	SR 25 and Meridian Street	Caltrans	D	AM	05/22/19	Signal	--	16.7	B	--	17.1	B	0.4
				PM	05/22/19		--	13.2	B	--	13.3	B	0.1
7	SR 25 and Santa Ana Road	Caltrans	D	AM	05/22/19	Signal	--	16.7	B	--	17.0	B	0.3
				PM	05/22/19		--	16.1	B	--	16.4	B	0.3
8	San Felipe Road and SR 25	Caltrans	D	AM	11/06/18	Signal	--	15.5	B	--	15.6	B	0.1
				PM	11/06/18		--	19.3	B	--	19.5	B	0.2
9	Fairview Road and Union Road	County	D	AM	--	Signal	--	0.7	A	--	0.8	A	0.1
				PM	--		--	0.7	A	--	0.7	A	0.0
10	Fairview Road and Sunnyslope Road	County	D	AM	05/22/19	Signal	--	18.5	B	--	18.1	B	-0.4
				PM	05/22/19		--	17.2	B	--	16.6	B	-0.6
11	Fairview Road and Hillcrest Road	County	D	AM	05/22/19	TWSC	**Yes**	19.1	C	**Yes**	20.5	C	1.4
				PM	05/22/19		No	13.4	B	**Yes**	13.8	B	0.4
12	Fairview Road and Santa Ana Road	County	D	AM	05/22/19	Signal	--	--	--	--	--	--	--
				PM	05/22/19		--	--	--	--	--	--	--
13	Fairview Road and Old Ranch Road	County	D	AM	--	TWSC	No	0.0	A	No	11.1	B	11.1
				PM	--		No	0.0	A	No	11.2	B	11.2
14	Fairview Road/Ridgemark Drive and Airline Highway	Caltrans	D	AM	05/22/19	AWSC	**Yes**	12.6	B	**Yes**	12.9	B	0.3
				PM	05/22/19		**Yes**	11.6	B	**Yes**	12.1	B	0.5
15	Enterprise Road and Airline Highway	Caltrans	D	AM	05/22/19	TWSC	No	15.6	C	No	16.4	C	0.8
				PM	05/22/19		No	19.2	C	No	20.8	C	1.6

Notes:
[1]The reported delay and corresponding level of service for signalized intersections represent the average delay for all approaches at the intersection.
The reported delay and corresponding level of service for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.
[2] Change in delay measured relative to existing conditions.
[3] Signal warrant analysis is not applicable to signalized intersections.
Bold indicates unacceptable LOS/signal warrant met.
Bold and boxed indicate adverse effect as a result of the project.

Table ES-1 (cont.)
Intersection Level of Service Summary

#	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Int. Control	Background			Background Plus Project				Cumulative No Project			Cumulative Plus Project			
							Warrant Met?[4]	Delay[1]	LOS	Warrant Met?[4]	Delay[1]	LOS	Change in Delay[2]	Warrant Met?[4]	Delay[1]	LOS	Warrant Met?[4]	Delay[1]	LOS	Change in Delay[3]
1	Airline Highway and Union Road	Caltrans	D	AM	#N/A	Signal	--	**126.3**	**F**	--	**143.1**	**F**	**16.8**	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
				PM	#N/A		--	**145.4**	**F**	--	**153.7**	**F**	**8.3**	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
2	Airline Highway and Sunset Drive	Caltrans	D	AM	#N/A	Signal	--	11.9	B	--	12.0	B	0.1	--	23.8	C	--	25.1	C	1.3
				PM	#N/A		--	11.5	B	--	11.6	B	0.1	--	18.7	B	--	19.3	B	0.6
3	SR 25 and Sunnyslope Road/Tres Pinos Road	Caltrans	D	AM	#N/A	Signal	--	24.8	C	--	25.1	C	0.3	--	47.4	D	--	49.1	D	1.7
				PM	#N/A		--	26.1	C	--	26.6	C	0.5	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
4	SR 25 and East Park Street	Caltrans	D	AM	#N/A	Signal	--	7.1	A	--	7.1	A	0.0	--	8.3	A	--	8.4	A	0.1
				PM	#N/A		--	8.3	A	--	8.6	A	0.3	--	20.9	C	--	25.8	C	4.9
5	SR 25 and Hillcrest Road	Caltrans	D	AM	#N/A	Signal	--	32.9	C	--	33.5	C	0.6	--	**135.2**	**F**	--	**138.9**	**F**	**3.7**
				PM	#N/A		--	41.6	D	--	43.5	D	1.9	--	**193.8**	**F**	--	**199.3**	**F**	**5.5**
6	SR 25 and Meridian Street	Caltrans	D	AM	#N/A	Signal	--	22.9	C	--	23.5	C	0.6	--	**87.5**	**F**	--	**90.8**	**F**	**3.3**
				PM	#N/A		--	19.3	B	--	19.8	B	0.5	--	**121.7**	**F**	--	**124.5**	**F**	**2.8**
7	SR 25 and Santa Ana Road	Caltrans	D	AM	#N/A	Signal	--	21.4	C	--	22.1	C	0.7	--	**80.8**	**F**	--	**84.1**	**F**	**3.3**
				PM	#N/A		--	20.9	C	--	21.7	C	0.8	--	**147.9**	**F**	--	**149.0**	**F**	**1.1**
8	San Felipe Road and SR 25	Caltrans	D	AM	#N/A	Signal	--	17.5	B	--	17.7	B	0.2	--	36.1	D	--	36.6	D	0.5
				PM	#N/A		--	23.7	C	--	24.1	C	0.4	--	**137.0**	**F**	--	**138.3**	**F**	**1.3**
9	Fairview Road and Union Road	County	D	AM	#N/A	Signal	--	7.6	A	--	7.6	A	0.0	--	7.6	A	--	7.6	A	0.0
				PM	#N/A		--	6.4	A	--	6.8	A	0.4	--	6.4	A	--	6.8	A	0.4
10	Fairview Road and Sunnyslope Road	County	D	AM	#N/A	Signal	--	25.8	C	--	26.9	C	1.1	--	31.0	C	--	32.8	C	1.8
				PM	#N/A		--	19.0	B	--	19.4	B	0.4	--	20.7	C	--	21.4	C	0.7
11	Fairview Road and Hillcrest Road	County	D	AM	#N/A	TWSC	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>4.0**	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>4.0**
				PM	#N/A		**Yes**	**N/A[4]**	**N/A[4]**	**Yes**	**N/A[5]**	**N/A[5]**	**>4.0**	**Yes**	**N/A[5]**	**N/A[5]**	**Yes**	**N/A[5]**	**N/A[5]**	**>4.0**
12	Fairview Road and Santa Ana Road	County	D	AM	#N/A	Signal	--	7.8	A	--	7.9	A	0.1	--	8.4	A	--	8.4	A	0
				PM	#N/A		--	8.9	A	--	9.0	A	0.1	--	11.6	B	--	12.1	B	0.5
13	Fairview Road and Old Ranch Road	County	D	AM	#N/A	TWSC	No	0.0	A	No	11.5	B	11.5	No	0.0	A	No	12.5	B	12.5
				PM	#N/A		No	0.0	A	No	11.9	B	11.9	No	0.0	A	No	13.1	B	13.1
14	Fairview Road/Ridgemark Drive and Airline Highway	Caltrans	D	AM	#N/A	AWSC	--	15.1	C	--	15.3	C	0.2	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
				PM	#N/A		--	15.1	C	--	15.5	C	0.4	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
15	Enterprise Road and Airline Highway	Caltrans	D	AM	#N/A	TWSC	**Yes**	23.6	C	**Yes**	24.5	C	0.9	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
				PM	#N/A		**Yes**	**46.8**	**E**	**Yes**	**49.9**	**E**	**3.1**	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**

Notes:

[1]The reported delay and corresponding level of service for signalized intersections represent the average delay for all approaches at the intersection.
The reported delay and corresponding level of service for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.

[2] Change in delay measured relative to background conditions.

[3] Change in delay measured relative to cumulative no project conditions.

[4] Signal warrant analysis is not applicable to signalized intersections.

[4] Lane configuration and volume conditions exceed the bounds of the unsignalized level of service methodology. The intersection is over capacity, and delay cannot be calculated.

Bold indicates unacceptable LOS/signal warrant met.

Bold and boxed indicate adverse effect as a result of the project.

Bicycle and Pedestrian Circulation

Currently, the project site is not served directly by any bicycle facilities. The nearest Class II bike lanes are provided along Union Road, west of the project site.

Sidewalks would be constructed within the proposed development. The existing project site and the surrounding area is mostly undeveloped, with very few sidewalks. Sidewalks are present in similar subdivisions located off of Fairview Road. However, existing sidewalks are not provided along Fairview Road.

The proposed project could increase the demand for bicycle facilities in the vicinity of the project site. With the existing limited and discontinuous bicycle network, the potential project-related bike riders would have to share the roadway with vehicular traffic, which could discourage the use of the bicycle as an alternative mode of transportation.

The County's Bikeway and Pedestrian Master Plan identifies several planned bicycle facilities that would connect the project site to other bicycle facilities and points of interests. With the implementation of the planned bicycle facilities identified in the County's Bikeway and Pedestrian Master Plan, a connection would be provided between the project site and other bicycle facilities to and from the west, providing a continuous bicycle network with access to most areas within Hollister and major facilities outside of town. The County's Bikeway and Pedestrian Master Plan identifies planned bike lanes along Fairview Road, Union Road, and Airline Highway. However, since the above-planned bicycle facilities are not fully funded, it is uncertain when these facilities would be available. Until these facilities are built out, project-related bicycle traffic would need to share the roadway with auto traffic.

The missing sidewalks in the project area make pedestrian travel to/from the project site challenging, discouraging pedestrian activity, or forcing pedestrians to walk along undeveloped roadway shoulders and/or within the street. However, few pedestrian destinations, such as shopping centers, or other pedestrian services, are located within what would be considered an acceptable walking distance (0.25 to 0.5 miles) from the project site. There are several residential subdivision developments that are proposed, approved, or are under construction along Fairview Road. These developments may generate a small number of pedestrian trips. However, since the pedestrian network is undeveloped, it is unlikely pedestrian trips would occur from subdivision to subdivision. Therefore, it is very unlikely that the project would generate a measurable need for pedestrian facilities.

Transit Service

County Express operates several fixed-route buses in Hollister and San Benito County. There are currently two County Express bus lines (Blue Line and Green Line) that operate within the City of Hollister. The nearest bus stop to the project site is located along Calistoga Drive, just north of Union Road, approximately 0.8 northwest of the project site.

Although no reduction to the project trip generation estimates was applied due to transit services, it can be assumed that some of the project trips could utilize public transportation. Applying an estimated three percent transit mode share, which is a conservative estimate for the project, equates to approximately at most 5 new transit riders generated by the proposed project during each of the peak hours. The project is not directly served by any transit services. However, the additional transit demand generated by the project would not justify additional transit services in the study area based on the project demand alone.

Site Access and On-Site Circulation

The report makes the following recommendations regarding site access, on-site circulation, and sight distance:

- A southbound left-turn pocket within the median of Fairview Road should be constructed by the project to facilitate access to Old Ranch Road without blocking travel along southbound Fairview Road.
- A “Dead End” or “No Outlet” sign should be posted at the entrance to the cul-de-sac
- The proposed project should adhere to County roadway design standards and guidelines when designing roadway widths and turn radii.
- Any landscaping or street trees should be planted and maintained so that they do not block sight distance at internal intersections. Stop signs should be provided at cross streets within the proposed internal roadways.

1. Introduction

This report presents the results of a Transportation Analysis (TA) for the proposed residential development located at 291 Old Ranch Road in unincorporated San Benito County. The project site encompasses most of APN 025-320-004 and is located at the end of Old Ranch Road (see Figure 1). The project proposes to extend the existing segment of Old Ranch Road into the project site to provide access from Fairview Road.

The project, as proposed, would allow for the subdivision of 141 residential lots, consisting of 121 single family homes and 20 single-family duet units. The project also proposes to allow for the construction of up to 25 accessory dwelling units (ADUs) as an option to home buyers. The project would include the construction of internal streets and a park. The project site plan is shown on Figure 2.

Transportation Policies

Draft SB 743 Implementation Policy

Historically, traffic impact analysis has utilized vehicular delay to identify traffic impacts and potential roadway improvements to relieve traffic congestion that may result due to proposed/planned growth. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. With the adoption of SB 743 legislation, public agencies are now required to base the determination of transportation impacts on Vehicle Miles Traveled (VMT) rather than level of service (LOS).

In adherence to SB 743, the San Benito County has adopted a new Transportation Analysis Policy, the San Benito County *Draft SB 743 Implementation Policy*. The policy establishes the thresholds for transportation impacts under the CEQA based on VMT instead of LOS. All new development projects are required to analyze transportation impacts using the VMT metric and conform to the *Draft SB 743 Implementation Policy*.

Transportation Analysis Scope

The TA consists of a California Environmental Quality Act (CEQA) required vehicle-miles-traveled (VMT) analysis and a supplemental traffic operations analysis that demonstrates the project's consistency with the *San Benito County General Plan* goals and policies. The TA was evaluated

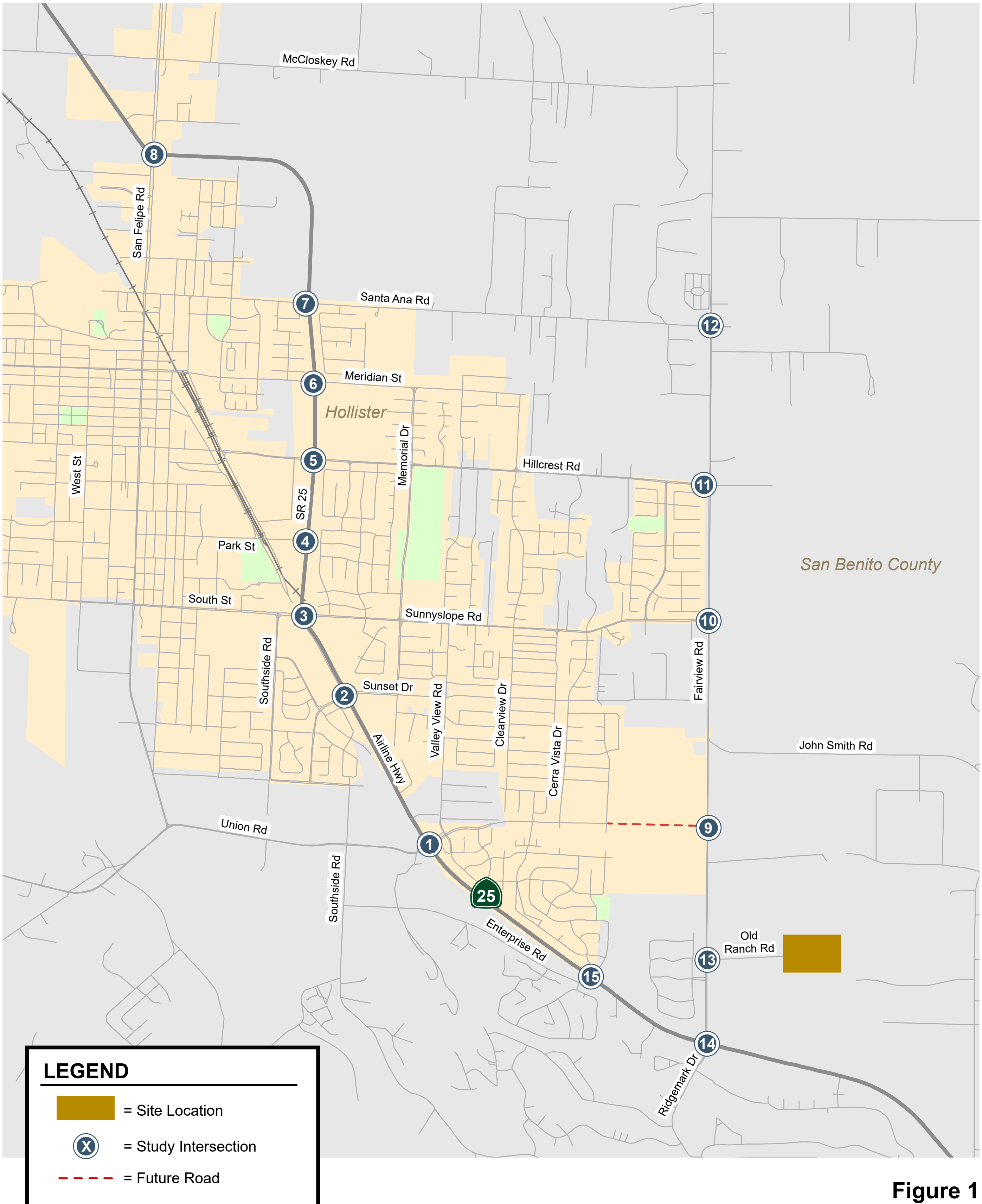


Figure 1
Site Location and Study Intersections

NOTE: THE PHASING DEPICTED ON THIS SHEET IS PRELIMINARY. APPLICANT RESERVES THE RIGHT TO MODIFY PROJECT PHASING IN THE FUTURE.

LEGEND

- DUET LOT
- SINGLE FAMILY DETACHED LOT
- O LOT CAPABLE OF ACCOMMODATING ADU PLAN
- * LOT CAPABLE OF ACCOMMODATING SINGLE STORY PLAN

Figure 2
Project Site Plan

following the standards and methodologies set forth in the San Benito County *Draft SB 743 Implementation Policy* and by the California Environmental Quality Act (CEQA).

CEQA Transportation Analysis Scope

The San Benito County *Draft SB 743 Implementation Policy* establishes procedures for determining project impacts on VMT based on project description, characteristics, and/or location. The policy also includes screening criteria that are used to identify types, characteristics, and/or locations of projects that would not exceed the CEQA thresholds of significance. If a project meets the County's screening criteria, the project is expected to result in less-than-significant VMT impacts and a detailed CEQA VMT analysis is not required. However, the proposed project will not meet the applicable VMT screening criteria. Therefore, a CEQA-level transportation analysis that evaluates the project's effects on VMT is required and is presented in Chapter 3.

The CEQA transportation analysis for the project consists of a project-level VMT impact analysis using the County's Travel Demand Forecasting (TDF) Model.

Transportation Operations Analysis Scope

The current County General Plan, *San Benito County 2035 General Plan,* adopted in July 2015 uses Level of Service (LOS) as its primary metric for the evaluation of the projected operation of the City's roadway system. Therefore, a traffic operations analysis based upon peak hour intersection level of service analysis is included for consistency with the General Plan goals and policies. The transportation operations analysis supplements the CEQA VMT analysis and identifies transportation and traffic operational issues that may arise due to a development project. However, the determination of project impacts per CEQA requirements is based solely on the VMT analysis.

The transportation operations analysis includes the evaluation of weekday AM and PM peak hour operations at selected intersections for the purpose of identifying operational issues (queuing, signal operations, and potential multi-modal issues) at intersections in the general vicinity of the project site. The transportation operations analysis also includes an evaluation of the effects of the project on other transportation issues related to on-site access, on-site circulation, sight distance, pedestrian, bicycle, and transit facilities in the immediate area of the project.

The effects of the proposed development on traffic operations on the surrounding roadway system were evaluated following the standards and methodologies set forth by the San Benito County 2035 General Plan.

Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes existing transportation system including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the VMT analysis methodology, baseline and potential project VMT impacts, and required mitigation measures to reduce any VMT impacts. Chapter 4 describes the transportation operations analysis including the method by which project traffic is estimated, intersection operations analysis methodology, any adverse intersection traffic effects caused by the project, and effects on bicycle, pedestrian, and transit facilities. Chapter 5 presents the conclusions of the transportation analysis.

2.
Existing Transportation System

This chapter describes the existing transportation system within the study area of the project, including the roadway network, transit services, and pedestrian and bicycle facilities.

Existing Roadway Network

Regional access to the project area is provided by State Routes 25 and 156 and Airline Highway while local access to the project area is provided by Fairview Road, Sunnyslope Road, Hillcrest Road, Santa Ana Road, Union Road, and Old Ranch Road. These facilities are described below.

State Route 25 (SR 25) is a two-lane highway that carries regional traffic between Gilroy and Hollister. It begins at its junction with Highway 101 in Gilroy and extends southward through Hollister towards Paicines. SR 25 is also designated as Hollister Road, Bolsa Road, Pinnacles National Park Highway, and Airline Highway. SR 25 has posted speed limits of 40 and 45 mph within the City of Hollister with bike lanes on both sides between Sunnyslope Road and San Felipe Roads and 55 mph with no bike lane outside the city's limit. SR 25 provides access to the project site via its intersections with Santa Ana Road, Hillcrest Road, Sunnyslope Road, and Fairview Road.

State Route 156 (SR 156) is generally a two-lane highway that carries regional traffic between Highway 101 and Highway 152 while passing through San Juan Bautista and the outskirts of the City of Hollister. SR 156 has a posted speed limit of 55 mph and is a two-lane highway between Hollister and San Juan Bautista and a four-lane divided highway between San Juan Bautista and US 101. SR 156 provides access to the project site via its intersections with Union Road, Fairview Road, and SR 25.

Airline Highway is a two- to four-lane arterial roadway that runs through Hollister. Airline Highway begins at Tres Pinos Road/Sunnyslope Road and is also SR 25 in the south part of Hollister.

Fairview Road is a two-lane north-south collector that is situated on the east edge of Hollister. Fairview Road has a posted speed limit of 55 mph with no bike lane and intermittent sidewalks and provides connections to Airline Highway to the south and SR 25 and SR 156 to the north. Fairview Road transitions into Ridgemark Drive, south of Airline Highway. Access from Fairview Road to the project site is provided via Old Ranch Road.

Sunnyslope Road is a four-lane roadway that extends from Fairview Road in the east to SR 25 in the west, where it becomes Tres Pinos Road. Sunnyslope Road has a posted speed limit of 35 mph with bike lanes and sidewalks on both sides of the street. Access to the project site from Sunnyslope Road is provided via its intersection with Fairview Road.

Hillcrest Road is a two-to-four-lane roadway that extends from Fairview Road in the east to McCray Street in the west, where it becomes South Road. Hillcrest Road has posted speed limits between 35 and 45 mph. Intermittent sidewalks are provided throughout Hillcrest Road. Access to the project site from Hillcrest Road is provided via its intersection with Fairview Road.

Santa Ana Road is a two-to-three-lane roadway that extends from Fairview Road in the east to San Benito Street in the west, where it becomes North Road. Santa Ana Road has posted speed limits between 25 and 40 mph. Intermittent sidewalks are provided throughout Santa Ana Road. Access to the project site from Santa Ana Road is provided via its intersection with Fairview Road.

Union Road is a two-lane roadway in south Hollister that extends from SR 156 to beyond Airline Highway, where it terminates. Union Road, east of Airline Highway, has a posted speed limit of 35 mph with bike lanes and sidewalks on both sides of the street. West of Airline Highway, Union Road has a posted speed limit of 55 mph with no bike lane or sidewalk. Access to the project site from Union Road is provided via its intersection with Fairview Road.

Old Ranch Road is a rural two-lane roadway that provides direct access to the project from Fairview Road. Old Ranch Road has no shoulders, centerline, bike lanes, or on-street parking.

Existing Pedestrian, Bicycle and Transit Facilities

Bicycle facilities are divided into three classes of relative significance. Class I bikeways are bike paths that are physically separated from motor vehicles and offer two-way bicycle travel on a separate path. Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings. Class III bikeways are bike routes and only have signs to help guide bicyclists on recommended routes to certain locations. The locations of existing bicycle facilities are shown in Figure 3.

Currently, the project site is not served directly by any bicycle facilities. However, class II bike lanes are provided on the following roadways:

1. Sunnyslope Road between SR 25 & Memorial Drive and Cerra Vista Drive & Fairview Road
2. Highway 25 between San Felipe Road and Sunnyslope Road
3. Southside Road from north of Union Road to just south of Hospital Road and between Sunset Drive & San Benito Street
4. Union Road between SR 25 and Cerra Vista Drive
5. Sunset Drive between SR 25 and Southside Drive
6. Ladd Lane between south of Tres Pinos Road and Southside Drive
7. East Park Street between SR 25 and McCray Street
8. Fairview Road, between Sunnyslope Road and Hillcrest Road
9. San Benito Street, between Union Road and Nash Road
10. Hillcrest Road, between SR 25 and Paseo Drive

The existing roadway network in the study area currently includes many areas with undeveloped roadway frontages that do not provide sidewalks including areas along Fairview Road and Airline Highway. The lack of sidewalks along surrounding streets in the area does not support pedestrian travel between the project site and other pedestrian destinations, such as schools and transit stops.

Existing Transit Service

Transit service to the project area is provided by County Express Transit System. Transit services provided in the City of Hollister are described below and shown in Figure 4.

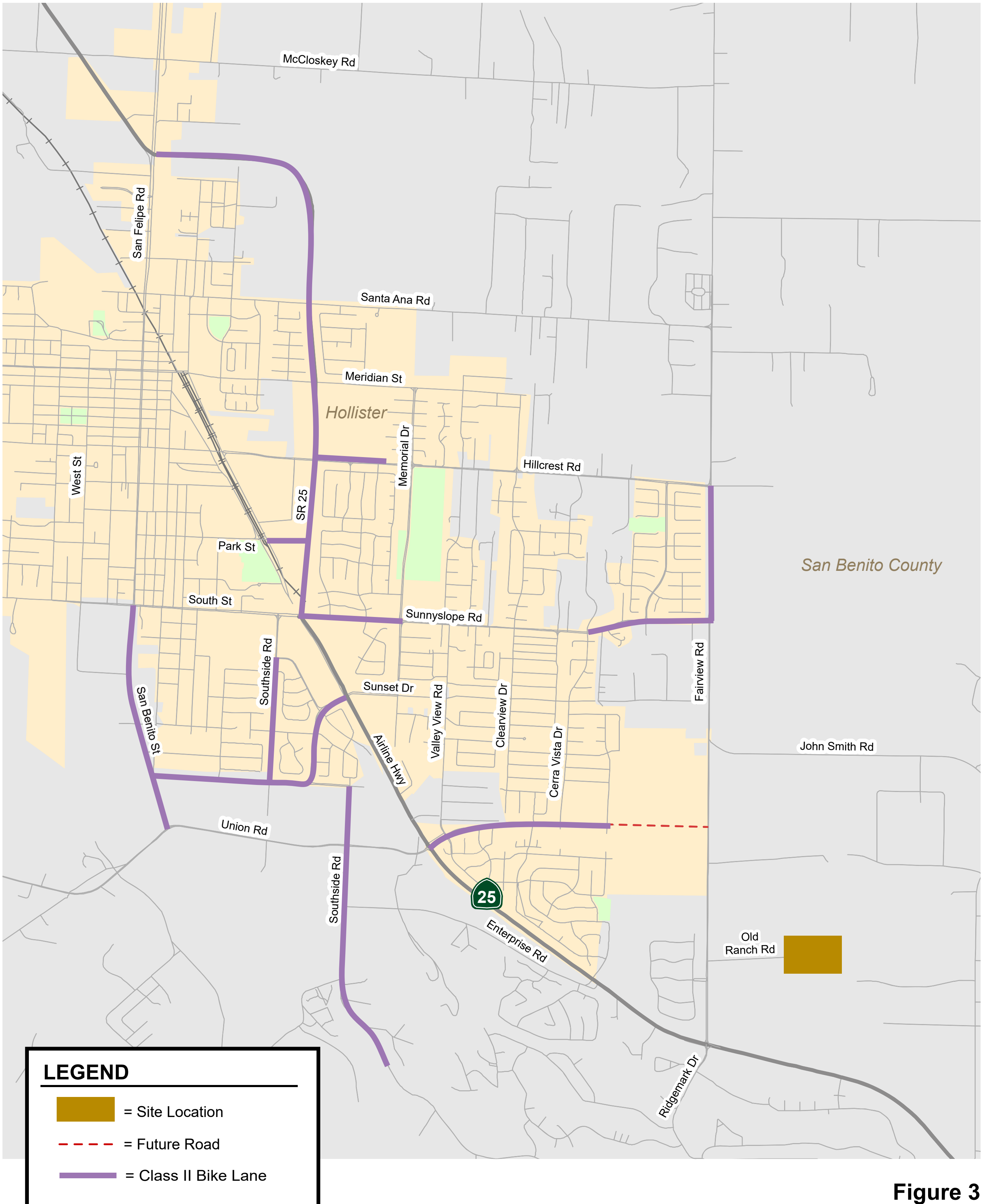


Figure 3
Existing Bicycle Facilities

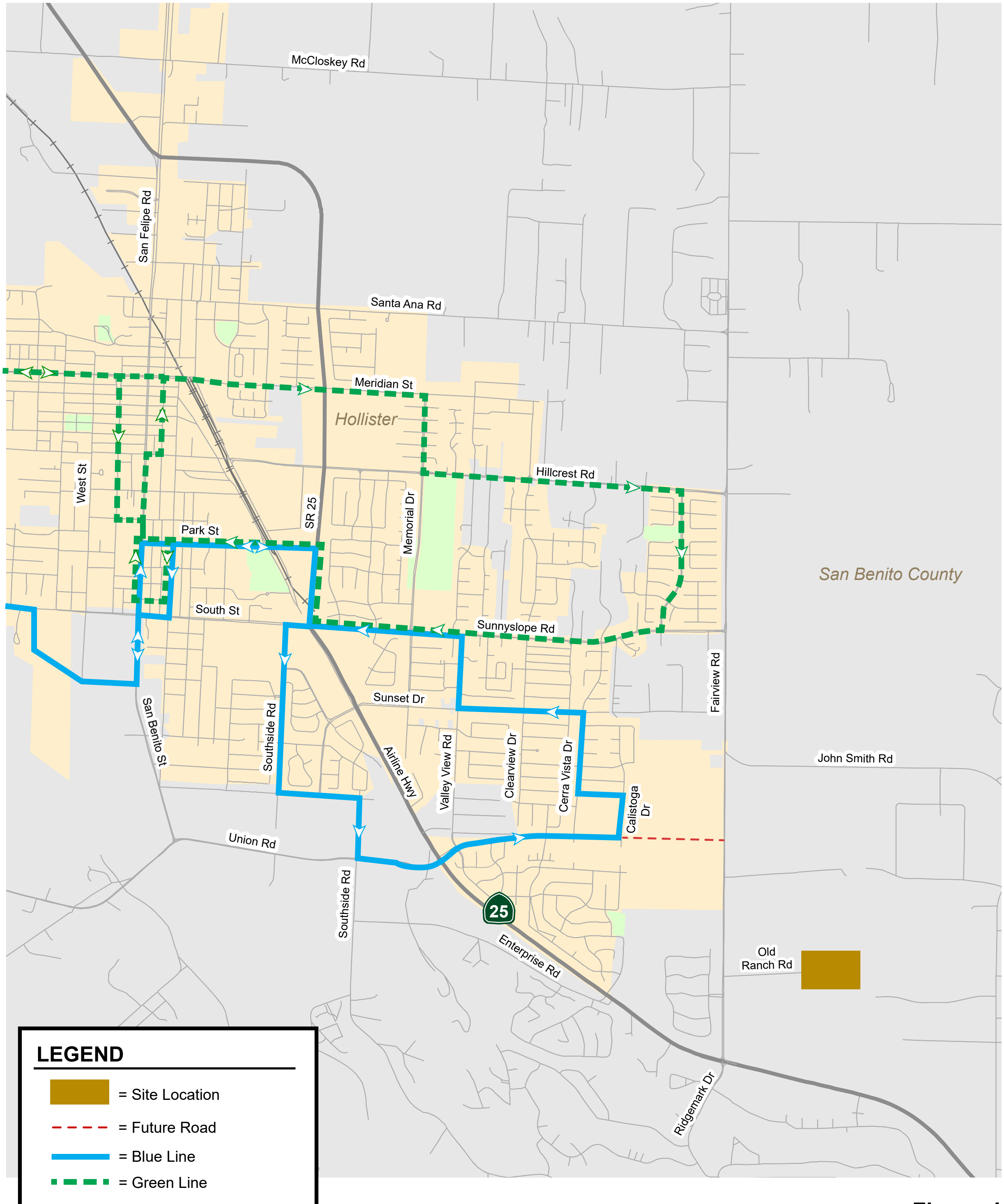


Figure 4
Existing Transit Services

Local Bus Service

County Express operates several fixed-route buses in Hollister and San Benito County. However, none of those routes operate on roadways that are within walking distance of the project site. The nearest bus stop to the project site is located along Calistoga Drive, just north of Union Road, approximately 0.8 northwest of the project site. Areas not served by fixed-route bus service are eligible for dial-a-ride service.

Dial-A-Ride Service

Areas not served by the fixed-route bus service are eligible for Dial-a-Ride service. County Express provides the Dial-a-Ride service to Northern San Benito County, including Hollister, San Juan Bautista, and Tres Pinos, on weekdays between 6 AM and 6 PM and on weekends between 9 AM and 3 PM. County Express Transit System provides two types of Dial-a-Ride service – the general public and paratransit. General public Dial-a-Ride serves those persons whose trips begin or end in a location more than three-quarters of a mile from the fixed route. Paratransit service provides rides to persons who have been determined to be Americans with Disabilities Act (ADA) eligible through the Local Transit Authority application process. Appointments for Dial-a-Ride service can be made up to 14 days in advance or on the day of the ride. However, same-day scheduling is subject to a $1.00 convenience fee and availability.

Inter-County Service

County Express Transit System's inter-county service includes service to the Gilroy Transit Center. Shuttle service to the Gilroy Transit Center operates Monday through Friday from 4:55 AM to 8:20 PM and connects to Caltrain to provide service between Gilroy and San Francisco. Regular service to Gavilan College is also provided during the school year.

3.
CEQA VMT Evaluation

This chapter describes the CEQA transportation analysis, including the VMT analysis methodology and significance criteria, potential project impacts on VMT, and mitigation measures recommended to reduce significant impacts. Pursuant to Senate Bill (SB) 743, the California Environmental Quality Act (CEQA) 2019 Update Guidelines Section 15064.3, subdivision (b) states that VMT will be the metric in analyzing transportation impacts for land use projects for CEQA purposes.

VMT Evaluation Methodology and Criteria

The effects of the proposed project on VMT were evaluated using the methodology outlined in the San Benito County *Draft SB 743 Implementation Policy*.

VMT is generally defined as the total miles of travel by personal motorized vehicles a project is expected to generate in a day. When assessing a residential project, the project generated home-based VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita.

Typically, development projects that are farther from other, complementary land uses (such as a business park far from housing) and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving than development near complementary land uses with more robust transportation options. Therefore, developments located in a central business district with high density and diversity of complementary land uses and frequent transit services are expected to internalize trips and generate shorter and fewer vehicle trips than developments located in a suburban area with low density of residential developments and no transit service in the project vicinity.

VMT Policies and Impact Criteria

In adherence to SB 743, San Benito County has adopted its *Draft SB 743 Implementation Policy*. The policy aligns with the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018.

Per OPR's technical advisory and the County's policy, home-based VMT per resident (capita) is the recommended metric to evaluate CEQA-related transportation impacts for residential land uses. As stated in the technical advisory, OPR recommends an impact threshold of 15% below the existing VMT levels for residential land uses. OPR allows the existing VMT to be measured as regional or citywide VMT per capita. Therefore, the County's policy has established 15% below the county-wide home-based VMT per capita as the impact threshold for residential uses in the county.

Countywide Model

The San Benito County travel demand forecast model was last updated in late 2020. The county's model is a mathematical representation of travel within the three counties in the Monterey Bay Region, as well as with the neighboring Santa Clara County. It is mainly composed of four components: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e. households, population, number of jobs) to estimate travel within the four modeled counties. Socioeconomic inputs are aggregated into geographic areas, known as TAZs (transportation analysis zones). There are 443 TAZs within the model to represent the entire County of San Benito. The model is the best available tool to represent travel within the County and serves as the primary forecasting tool for the County.

The County's model indicates that the countywide average home-based VMT per capita is currently 23.1. Thus, the project will result in a significant impact if it results in project generated VMT of 19.6 VMT per capita, 15% below the existing countywide average, or greater.

If a project is found to have a significant impact on VMT, the impact must be reduced by modifying the project to reduce its VMT to an acceptable level (below the established thresholds of significance applicable to the project) and/or mitigating the impact through mitigation measures, which can include implementing a TDM program.

Project VMT Impact Analysis

The results of the VMT analysis, using the County's model, indicates that the proposed project is located in TAZ 330, which has an existing home-based VMT per capita of 21.3. It is assumed that the proposed project would exhibit similar travel characteristics and have the same home-based VMT per capita as other residential uses within its TAZ. Because the project's VMT per capita would exceed the impact threshold of 19.6 VMT per capita, the proposed project would have an impact on the transportation system based on the County's VMT impact criteria. The VMT analysis results are summarized in Table 1.

Table 1
VMT Analysis Summary

	Residential Home-Based VMT per Capita				
	County-Wide Average	VMT Threshold	Project's TAZ	VMT Impact?	% Mitigation Needed to Eliminate Impact
Existing Conditions	23.1	19.6	21.3	**Yes**	8%

Notes:
VMT = Vehicle Miles Travelled; TAZ=Traffic Analysis Zone
All data generated by the San Benito County travel demand forecast model.

Project Impacts and Mitigation Measures

Project Impact: Since the VMT generated by the project (21.3 VMT per capita) would exceed the threshold of 19.6 VMT per capita, the project would result in a significant transportation impact on VMT. Therefore, mitigation measures are required to reduce the VMT impact. Per the county's impact thresholds, the project would need to implement VMT reduction measures to achieve an 8 percent reduction (21.3 to 19.6) in its VMT per capita for the proposed residential uses to reduce its impact to less than significant levels.

The County's *Draft SB 743 Implementation Policy* identifies several Travel Demand Management (TDM) strategies that can be implemented to reduce a project's VMT. However, most of the measures are applicable to only employment uses and/or are beyond the means of implementation by a single development project. The County's policy identifies the following TDM measures for residential uses:

- T-8 Subsidized Transit Program: Provide subsidized or discounted, or free transit passes for residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving increasing the total number of transit trips and decreasing vehicle trips.
- T-22 Community-Based Travel Planning: Target residences in the community with community-based travel planning (CBTP). CBTP is a residential based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles.
- T-17 Pedestrian Network Improvement: Increase sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive.
- T-18 Construct or Improve Bike Facility: Construct or improve a single bicycle lane facility that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area.

However, the implementation of the above measures and resulting reduction in VMT presumes that there are robust existing transit services, and an existing bicycle and pedestrian network. Since the supporting transit, bicycle, and pedestrian facilities do not exist, the VMT per capita would still be greater than the County's recommended impact threshold of 19.6 VMT per capita with the implementation of the identified measures.

The County's 15% below existing VMT impact threshold (also recommended by the OPR) encourages developments in transit-rich, highly mixed-use areas to implement design features and trip reduction measures to take advantage of existing multi-model infrastructure and land use mixes in reducing trip making and/or trip lengths. However, the project is located in a rural setting with very limited multi-modal transportation infrastructure and low mixture of complementary land uses. The lack of major transit options results in a greater number and longer commute trips. Therefore, it is highly unlikely that residential developments like the proposed project in the County can achieve the 15% reduction in VMT. Therefore, absent of the County reducing its adopted VMT impact thresholds, the proposed project's VMT impact must be deemed significant and unavoidable.

4. Traffic Operations Analysis

This chapter describes the traffic operations analysis. The traffic operations analysis provides supplemental analysis for use by San Benito County in identifying adverse effects related to traffic operations due to the proposed project and to identify potential improvements to the transportation system. However, the identified roadway operations and improvements are not required or considered project impacts per CEQA guidelines.

The chapter presents the method by which project traffic is estimated, intersection operations analysis for each of the study scenarios, the identification of any adverse effects on study intersections caused by the project generated trips, and recommended improvements to alleviate the identified operational issues. In addition, the chapter includes review of the proposed site access and on-site circulation, review of the project's effects on bicycle, pedestrian, and transit facilities, and a review of required parking.

Project Description

The project, as proposed, would allow for the subdivision of 141 residential lots, consisting of 121 single family homes and 20 single-family duet units. The project also proposes to allow for the construction of up to 25 accessory dwelling units (ADUs) as an option to home buyers. The project would construct internal streets and a park. The project proposes to extend the existing segment of Old Ranch Road into the project site to provide access from Fairview Road.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel are estimated. In the project trip assignment, the project trips are assigned to specific streets and intersections. . These procedures are described further in the following sections.

Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The fitted curve trip generation rates for Single Family Home (Land Use 210) as published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (2021) were applied to the proposed residential development. The ITE trip rates for Single Family Homes were applied to the ADUs since the

ITE *Trip Generation Manual* does not provide specific trip rates for ADUs. Therefore, the trip generation estimates are reflective of a total of 166 units (121 single-family homes, 20 duet units, and 25 ADU units).

Based on the ITE trip generation rates and proposed 166 residential units, it is estimated that the project would generate 1,608 daily vehicle trips, with 118 trips (31 inbound and 87 outbound) occurring during the AM peak hour and 160 trips (101 inbound and 59 outbound) occurring during the PM peak hour. The project trip generation estimates are presented in Table 2.

Table 2
Project Trip Generation Estimates

					AM Peak Hour						PM Peak Hour					
			Daily Trips			Split		Trip				Split		Trip		
Land Use	Size		Rate	Trip	Rate	In	Out	In	Out	Total	Rate	In	Out	In	Out	Total
Proposed Land Use																
#210 - Single-Family Detached Housing	166	Dwelling Units	9.689	1,608	0.712	26%	74%	31	87	118	0.964	63%	37%	101	59	160
Source: ITE Trip Generation Manual, 11th Edition 2021.																

Trip Distribution and Trip Assignment

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The peak-hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern. The project trip distribution pattern is shown graphically in Figure 5. Figure 6 shows the assignment of project traffic on the existing transportation network. Figure 7 shows the assignment of project traffic under background and cumulative conditions with the Union Road extension to Fairview Road.

Intersection Operations Methodology

This section presents the methods used to evaluate traffic operations at the study intersections. It includes descriptions of the data requirements, the analysis methodologies, the applicable level of service standards, and the criteria defining adverse effects at the study intersections. The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection is not considered a CEQA impact metric.

Study Intersections

The traffic operations analysis includes an analysis of peak-hour traffic conditions for ten signalized intersections one future signalized intersection, and four unsignalized intersections. The study intersections are identified below.

1. Airline Highway and Union Road [CT – Signalized]
2. Airline Highway and Sunset Drive [CT – Signalized]
3. SR 25/Airline Highway and Sunnyslope Road/Tres Pinos Road [CT – Signalized]
4. SR 25/East Park Street [CT – Signalized]
5. SR 25 and Hillcrest Road [CT – Signalized]
6. SR 25 and Meridian Street [CT - Signalized]
7. SR 25 and Santa Ana Road [CT – Signalized]
8. San Felipe Road and SR 25 [CT – Signalized]
9. Fairview Road and Union Road [SBC – Future Signalized]
10. Fairview Road and Sunnyslope Road [SBC – Signalized]

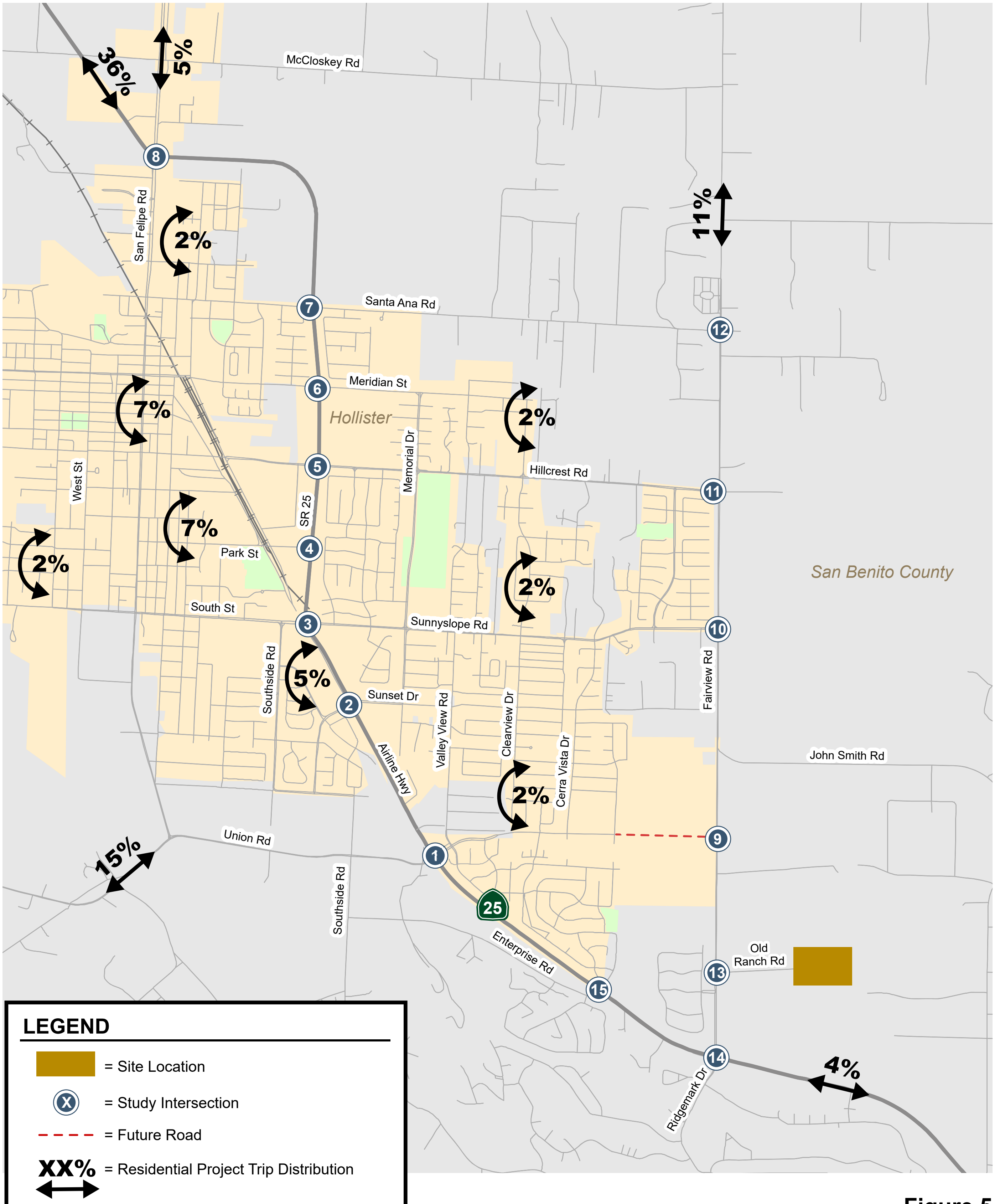
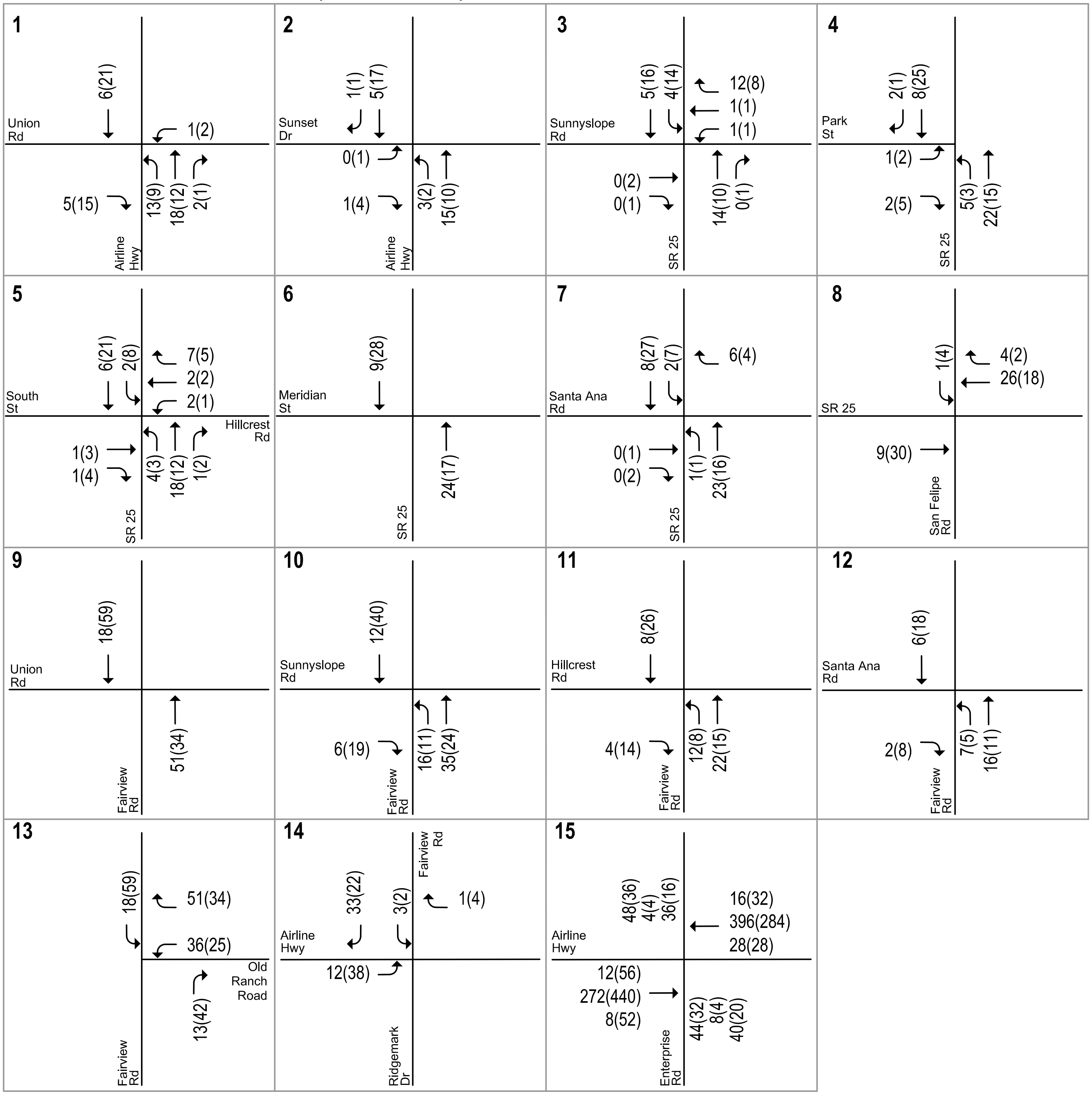


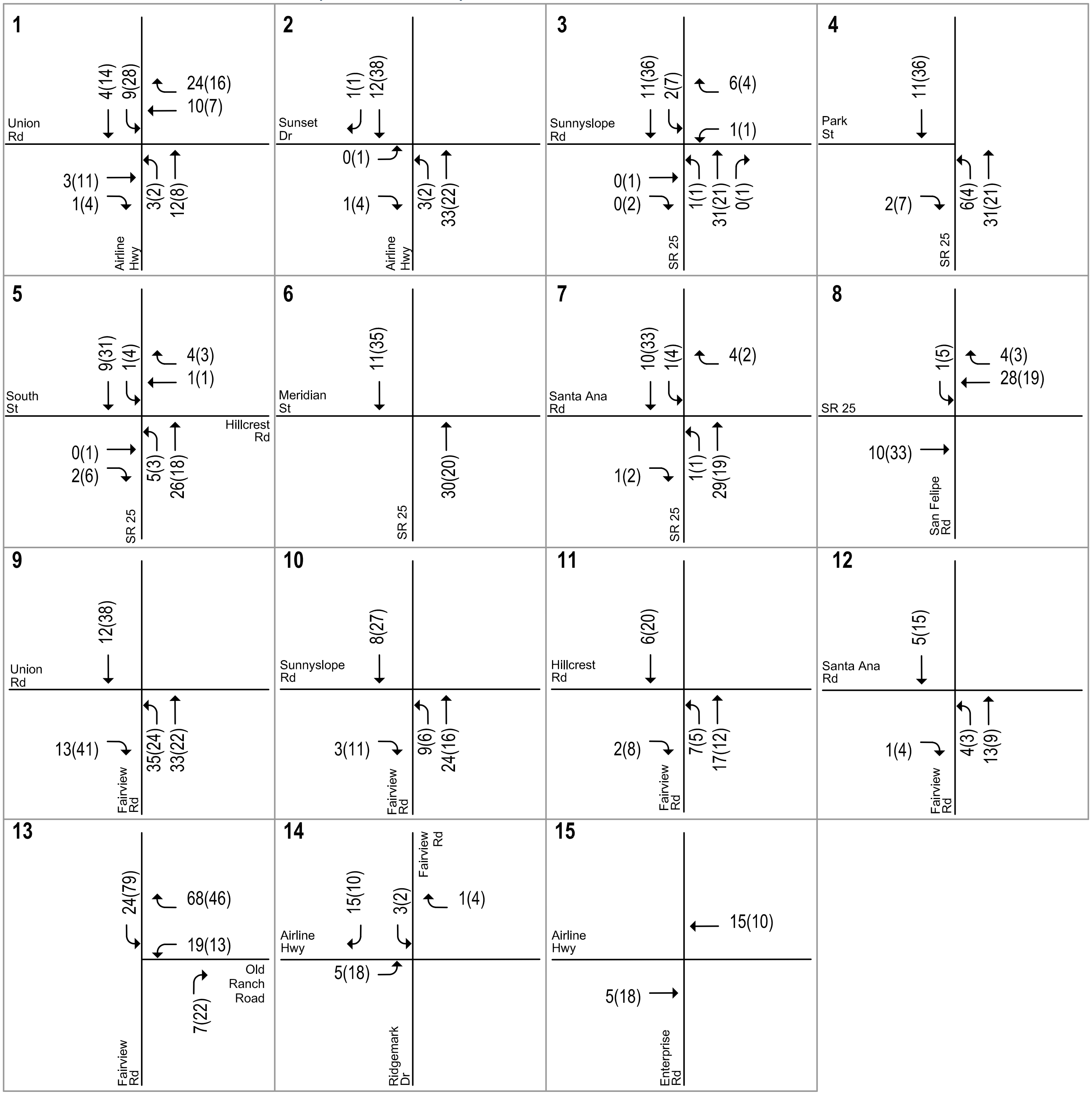
Figure 5
Project Trip Distribution



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 6
Project Trip Assignment (Existing Conditions)



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 7
Project Trip Assignment (Background and Cumulative Conditions)

HEXAGON

NORTH
Not to Scale

11. Fairview Road and Hillcrest Road SBC – unsignalized
12. Fairview Road and Santa Ana Road SBC – Signalized
13. Fairview Road and Old Ranch Road SBC – unsignalized
14. Fairview Road/Ridgemark Drive and Airline Highway CT – unsignalized
15. Enterprise Road and Airline Highway CT – unsignalized

Intersections denoted with the superscript "CT" are under the jurisdiction of Caltrans.
Intersections denoted with the superscript "SBC" are under the jurisdiction of San Benito County.

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour typically occurs between 7:00 AM and 9:00 AM and the PM peak hour typically occurs between 4:00 PM and 6:00 PM on a regular weekday. These are the peak commute hours during which most weekday traffic congestion occurs on the roadways in the study area.

Study Scenarios

Intersection operations were evaluated for the following scenarios:

- **Existing Conditions:** Existing conditions represent existing peak-hour traffic volumes on the existing roadway network. Existing traffic volumes were obtained from recently completed traffic studies.

- **Existing Plus Project Conditions:** Existing plus project conditions represent existing peak-hour traffic volumes on the existing roadway network with the addition of traffic generated by the proposed project assuming the project was completed and occupied today. Existing plus project conditions were evaluated relative to existing conditions to determine potential adverse effects as a result of the project traffic on the existing transportation network.

- **Background Conditions:** Background conditions represent near-term future traffic volumes on the near-term future transportation network. Background traffic volumes were estimated by adding trips from approved but not yet constructed development projects to existing peak-hour traffic volumes. Approved project information was provided by the City of Hollister and San Benito County Planning Departments. Background conditions represent the baseline conditions to which project conditions are compared to determine adverse effects as a result of the project traffic.

- **Background Plus Project Conditions:** Background plus project conditions (also referred to as *Project Conditions*) represent background traffic volumes, with the project, on the near-term future roadway network. Background plus project conditions were estimated by adding to background traffic volumes the trips associated with the proposed project (or *project traffic volumes*). Background plus project conditions were evaluated relative to background conditions to determine potential adverse effects as a result of the project traffic.

- **Cumulative Conditions**: Cumulative conditions represent future traffic volumes on the future transportation network that would result from traffic growth projected to occur due to proposed but not yet approved (pending) development projects, in addition to trips from approved project trips and the proposed project. Pending project information was provided by the City of Hollister and San Benito County Planning Departments. Cumulative conditions were evaluated for two scenarios: (1) without the proposed project and (2) with project-generated traffic. The change between these two scenarios illustrates any adverse effects the proposed project could have on cumulative conditions.

Data Requirements

The data required for the analysis were obtained from previous traffic studies, the City of Hollister, San Benito County, and field observations. The following data were collected from these sources:

- existing traffic volumes
- lane configurations and traffic control
- signal timing and phasing (for signalized intersections)
- approved and pending developments (size, use, and location)

Lane Configurations

The existing lane configurations and traffic controls at the study intersections (shown on Figure 8) were determined by observations in the field and review of aerial images.

The transportation network under background and cumulative conditions is assumed to be the same as the existing transportation network with the exception of the following improvements that are assumed to be completed as part of other approved development projects:

Union Road Extension. Union Road will be extended from its current termination point, east of Airline Highway, eastward to Fairview Road. The future intersection of Fairview Road and Union Road will be signalized.

Hillcrest Road Extension. Hillcrest Road will be extended eastward from its current termination point at Fairview Road. The westbound leg (east leg) is assumed to consist of a shared through-left lane and a right-turn lane. Similarly, the eastbound leg (west leg) is assumed to consist of a shared through-left lane and a right-turn lane.

Lane configurations and traffic controls at study intersections under background and cumulative conditions are shown on Figure 9.

Traffic Volumes

Peak-hour intersection turning movement volumes for all intersections and study scenarios are tabulated in Appendix A.

Existing Traffic Volumes

Existing weekday AM and PM peak-hour traffic volumes were obtained from recently completed traffic studies. New traffic counts are not currently being collected due to the current COVID-19 pandemic and its effects on normal traffic conditions. Therefore, existing traffic volumes were represented by pre-pandemic traffic counts collected in November 2018 and May 2019. The existing peak-hour intersection volumes are shown on Figure 10.

Caltrans requires its intersections to be analyzed using peak 15-minute flow rates. Therefore, the peak one-hour traffic volumes used in this analysis for the Caltrans intersections are calculated by multiplying the peak 15-minute volumes within each peak-hour by four.

Existing plus Project Traffic Volumes

Project trips were added to existing traffic volumes to obtain existing plus project traffic volumes. The traffic volumes under existing plus project conditions are shown in Figure 11.

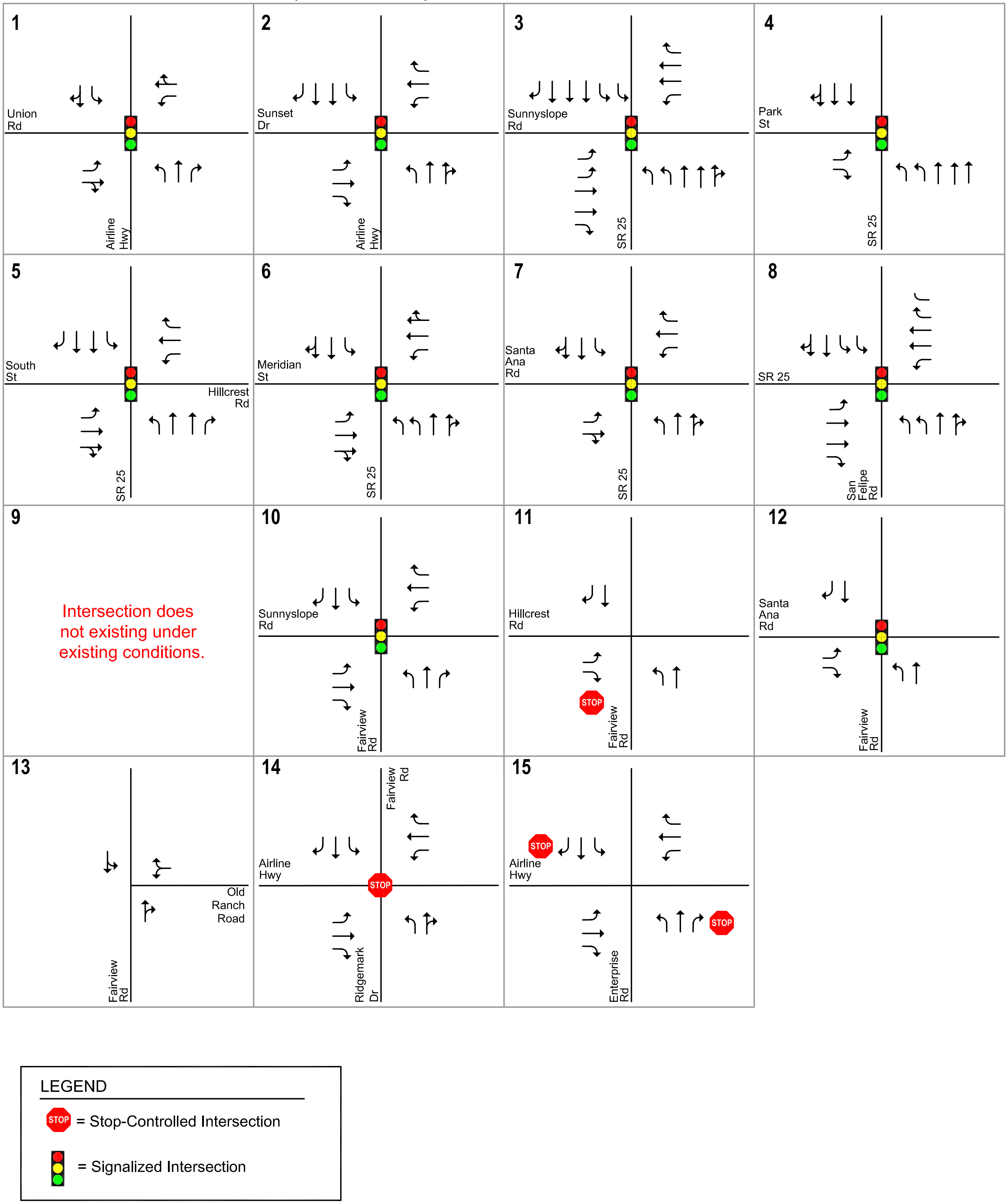
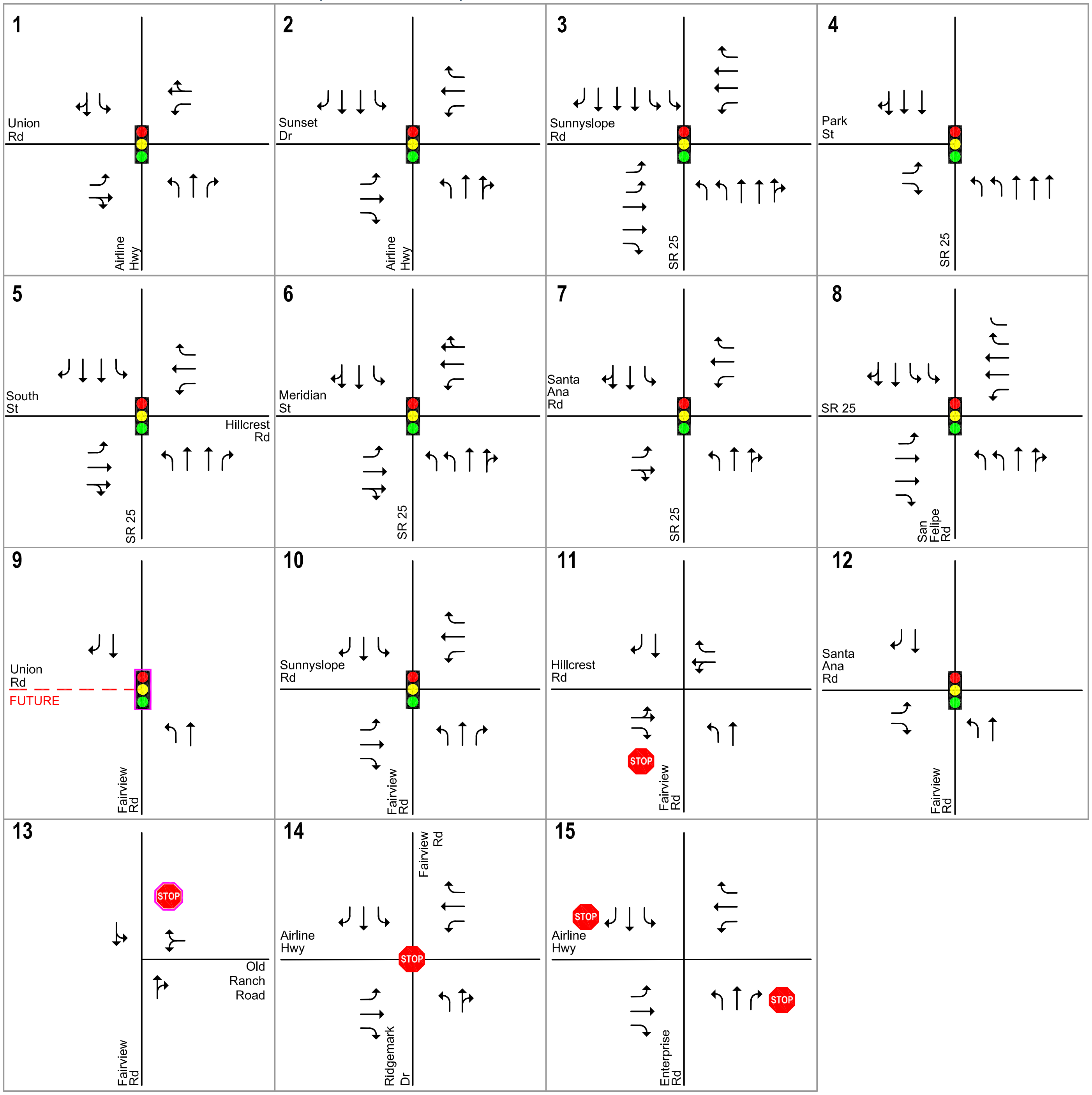


Figure 8
Existing Lane Configurations



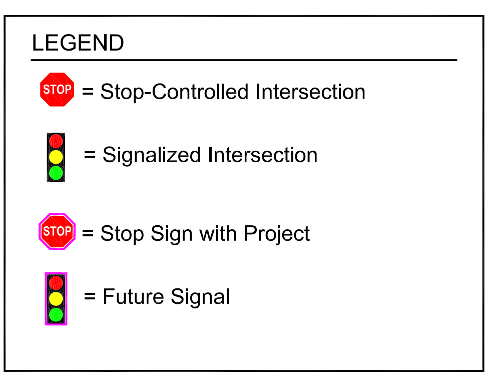
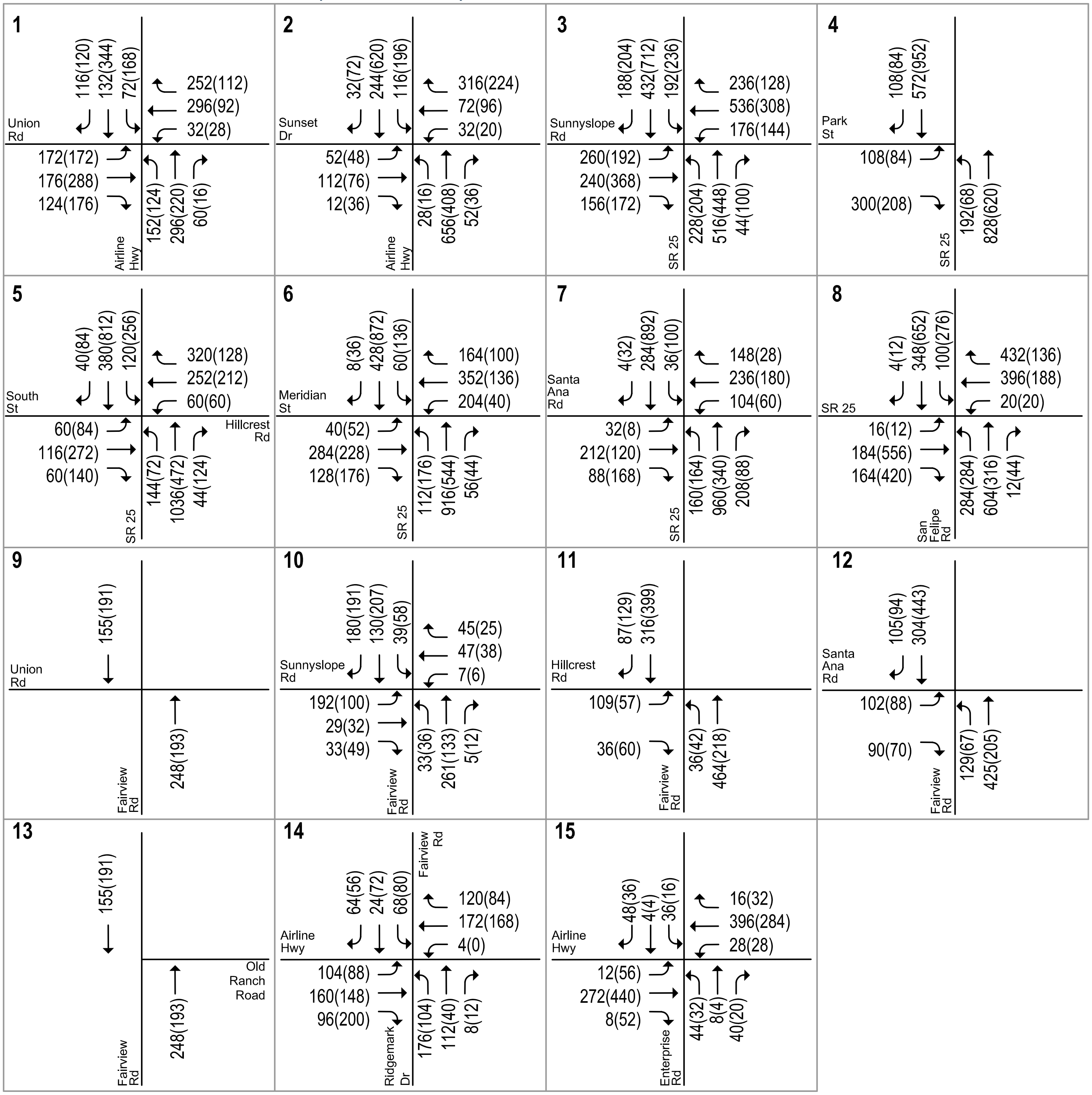


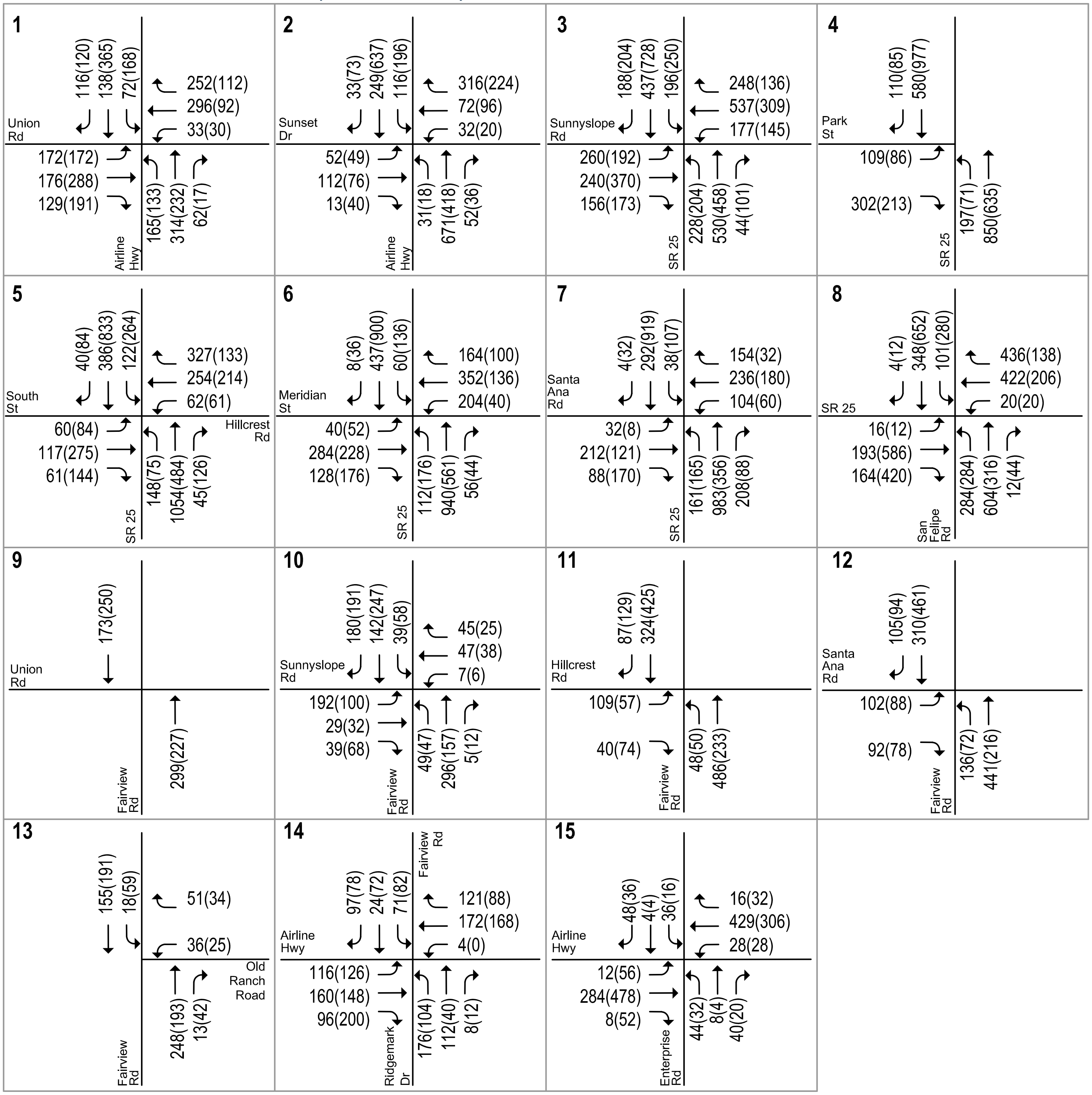
Figure 9
Background and Cumulative Lane Configurations



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Existing Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11
Existing Plus Project Traffic Volumes

Background Traffic Volumes

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. Lists of approved projects were received from the City of Hollister Planning Department in April 2021 and the San Benito County Planning Department in June 2019. Table 3 lists the approved but not-yet-completed developments that would add traffic to the roadway network under background conditions. The traffic generated by projects that are either very small or remotely located from the study intersections was assumed to be insignificant for this traffic analysis.

The traffic added to the study intersections from approved but not yet constructed developments was estimated by distributing and assigning trips generated by these developments to the roadway network. Background traffic volumes are shown in Figure 12.

Background plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes. The traffic volumes under background plus project conditions are shown in Figure 13.

Cumulative Traffic Volumes

Cumulative peak-hour traffic volumes were calculated by adding to background volumes the estimated traffic from the proposed but not yet approved (pending) development projects. Lists of pending projects were received from the City of Hollister Planning Department in April 2021 and the San Benito County Planning Department in June 2019. Table 4 lists the proposed but not yet approved (pending) development projects that would add traffic to the roadway network under cumulative conditions. The traffic generated by projects that are either very small or remotely located from the study intersections was assumed to be insignificant for this traffic analysis. Cumulative traffic volumes are shown in Figure 14.

Cumulative plus Project Traffic Volume

Project trips were added to cumulative traffic volumes to obtain background plus project traffic volumes. The traffic volumes under cumulative plus project conditions are shown in Figure 15.

Intersection Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various levels of service are based on the average amount of delay incurred by drivers traveling through the intersection. The intersection analysis methods and level of service standards are described below.

Level of Service Standards

The level of service standard for San Benito County is LOS D. In the Guide for the Preparation of Traffic Impact Study (2002), Caltrans identifies a level of service threshold of C/D as the acceptable service level on state highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead local agency consults with Caltrans to determine the appropriate target LOS. According to the San Benito County General Plan, Caltrans shall endeavor to maintain a target goal of LOS D at all Caltrans facilities within San Benito County.

Analysis Methodologies

All study intersections were evaluated with the use of the Synchro software and applying the *Highway Capacity Manual 6th Edition* (HCM6) methodology.

Table 3
Approved Project List

Applicant/Owner/Project Name	Address/Location	Project Description
Award Homes	w/o Fairview, s/o St. Benedict's Church, e/o Calistoga Dr	507 single-family dwelling units, 60 duet dwelling units, and 100 multi-family dwelling units
Silver Oaks	w/o Valley View, s/o Hazel Hawkins Hospital, e/o Airline Hwy, n/o Valle Way	170 senior detached housing units
Bella Sera	w/o Ladd Ln, across from Hillock Dr	63 multi-family dwelling units
Cerrato	Between Meridian St and Hillcrest Rd, w/o Memorial Dr	241 single-family dwelling units
Farmstead	South St & Westside Blvd	13 single-family dwelling units
Allendale	North St & Buena Vista Rd	60 multi-family dwelling units and 279 single-family dwelling units
Los Pinars	e/o Cushman St, s/o Nash Rd	44 multi-family dwelling units, 15 attached and 26 detached single-family dwelling units
Robert's Ranch	Fairview Rd & Mimosa Rd	192 single-family dwelling units and 49 multi-family dwelling units
Solorio Park II	1040 South St	25 single-family dwelling units
Mirabella II	N/o Buena Vista and W/o Miller Rd	157 single-family dwelling units and 26 multi-family dwelling units
400 Block	365 4th St, 430, 434, & 438 San Benito St	22 multi-family dwelling units
Rong Chang USA/ John Wynn[1]	Northeast of Hollister Municipal Airport; W/o San Felipe Rd	151,200 square feet of shell building
Hawkins Companies/Christian Samples, AICP	W/o SR 25 and S/o Park St	165,533 square feet of shopping center
Gleanomic, LLC[1]	1802 Shelton Dr	Subdivision an ~79,400 square feet building into 3 separate commercial/industrial condominiums
American Casting[1]	71 Fallon Rd	Construction of new 21,200 square feet two-story industrial building to replace existing 2,160 square feet manufactured building
DelCurto Brothers Construction	365 Fourth Street	30,738-square-foot commercial mixed-use building
Community Foundation	460, 434, 438 San Benito Street	10,858-square-foot community building
Geary Coats	773 San Felipe Road	2,400-square-foot cannabis dispensary
Scenic Southside	Southside Road	184 single-family dwelling units
Faye Hollister Lane	3061 Southside Road	84 single-family dwelling units
Santana Ranch	E/o Fairview Rd from Hillcrest to Sunnyslope	1,092 single-family dwelling units, 800-student elementary school, and 65,000 s.f. of commercial space
Fairview Corners Residential	N/E Corner of Fairview Rd and Airline Hwy	220 single-family dwelling units
San Juan Oaks	SW corner of Union Street/San Juan Oaks Drive	1,100 residential units, 200-room hotel, 65,000-sf commercial, assisted living/skilled nursing center
Solorio Park I	1001 4th Street	76 single-family dwelling units
Brigantino [Sunnyside Estates]	Southside Road, South of Union Road	200 single-family dwelling units
Cerro Verde	Hillcrest Rd & El Cerro Dr	19 single-family dwelling units
2001 Memorial/Tom King	2001 Memorial Dr	18 multifamily units
Prakash Patel	391 Gateway Drive	93 room hotel

Source: City of Hollister and San Benito County Planning Department (April 2021)

Notes:

[1] Project has been completed. Since traffic volume counts are from before these projects were completed, it is assumed these projects would be fully occupied by background conditions.

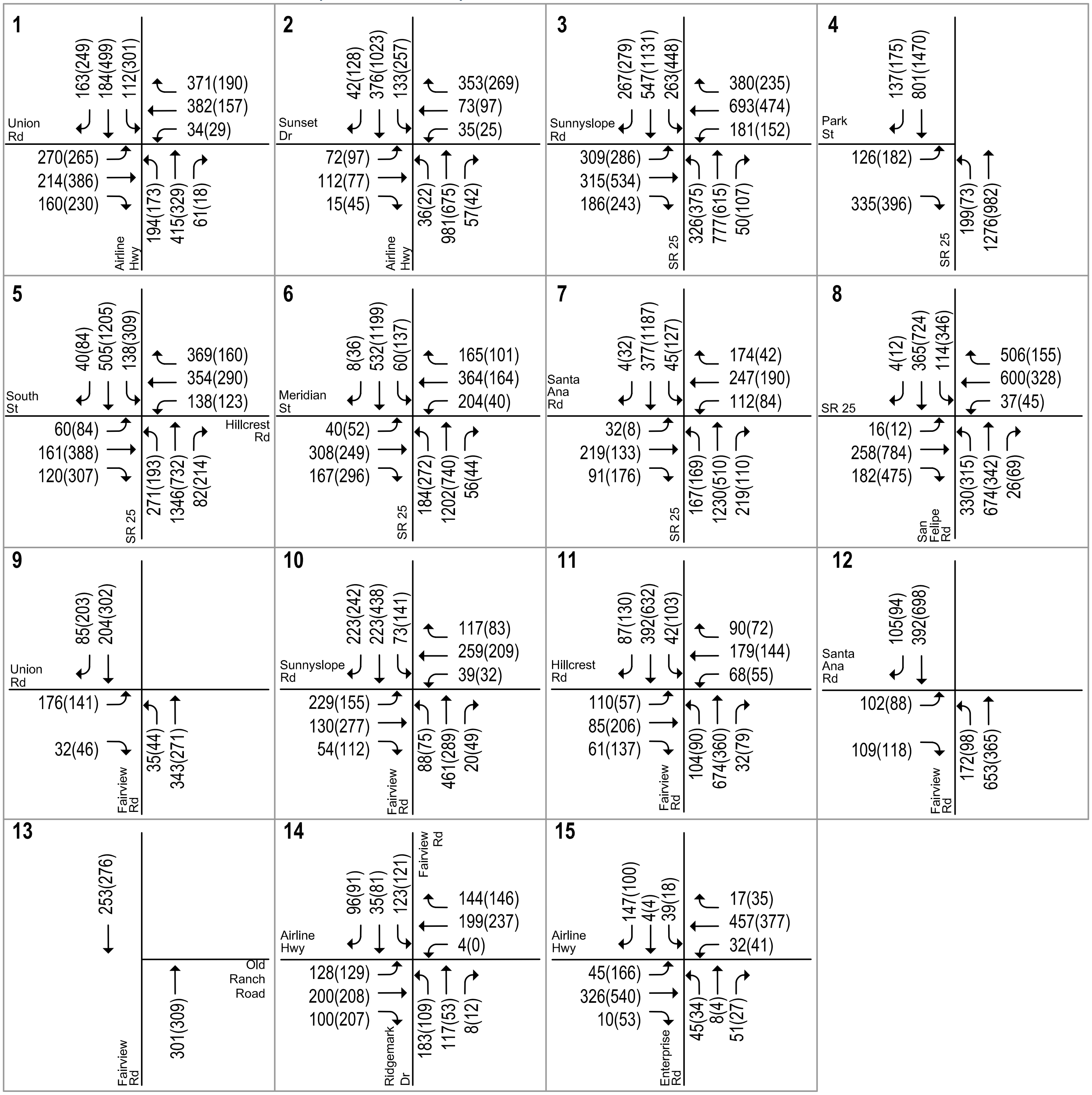
Table 4
Pending Project List

Applicant/Owner/Project Name	Address/Location	Project Description
Gonzalez north of Buena Vista	N/o Buena Vista Rd; E/o Carmoble Dr	Pre-zone 11.11 acres medium density (133 max units)
Rosati	S/o Santa Ana Rd, N/o Meridian St; W/o El Toro Dr	Pre-zone 23.45 acres medium density (192 single-family dwelling units and 48 multi-family dwelling units)
Sywak/Powell St	Powell St & A St	64 multi-family dwelling units
Pacific West Communities	NE corner of Miller Rd/San Juan Rd	57 multi-family dwelling units
Pivetti	Valley View Rd between Sunnyslope Rd and Sunset Dr	24 single-family dwelling units
Campisi, Elizabeth	NW Corner of Southside & Enterprise	23 single-family dwelling units
Javid Asst. Living	3586 Airline Highway	180-room assisted care facility
Clearist Park	San Felipe Rd	Subdivision of three parcels consisting of ~207 total acres into 60 lots ranging in size form 1.68 to 11.30 acres for future industrial use
Williams - Spring Meadows Est	1735 Santa Ana Road	20 single-family dwelling units
Floriani Ranch- Rancho San Benito	SR 25	5,300 single-family dwelling units and 2,700,000 s.f. commercial space
Lima Property Specific Plan	Airline Highway, south of Fairview Road	1,185 dwelling units of residential uses, 42,000 square feet of commercial/retail space and up to 95 units of residential units in the mixed-use Village Commercial parcel, and a middle school for 928 students.
Woodle	N/o Buena Vista Rd; W/o Miller Rd	Pre-zone 9.09 acres medium density (109 max units)
Chappell Road	S/o and E/o of North Chappell Rd; W/o SR 25; N/o Santa Ana Rd	Pre-zone 118 acres Low Density (926 residential units and 303,700 s.f. of commercial space)
San Benito County Behavioral Health Center	San Felipe Rd, North of Wright Rd	17,212 s.f. clinic
The Bluffs at Ridgemark	Airline Highway and Fairview Road	93 single-family dwelling units
Citation Way	Citation Way	129,540 SF industrial building

Source: City of Hollister (April 2021) and San Benito County Planning Department (July 2019)

Signalized Intersections

The level of service methodology chosen for the analysis of signalized study intersections is Synchro and the HCM6 methodology. Synchro evaluates signalized intersection operations based on average control delay time for all vehicles at the intersection. *Control delay* is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The correlation between average delay and level of service for signalized intersections is shown in Table 5.



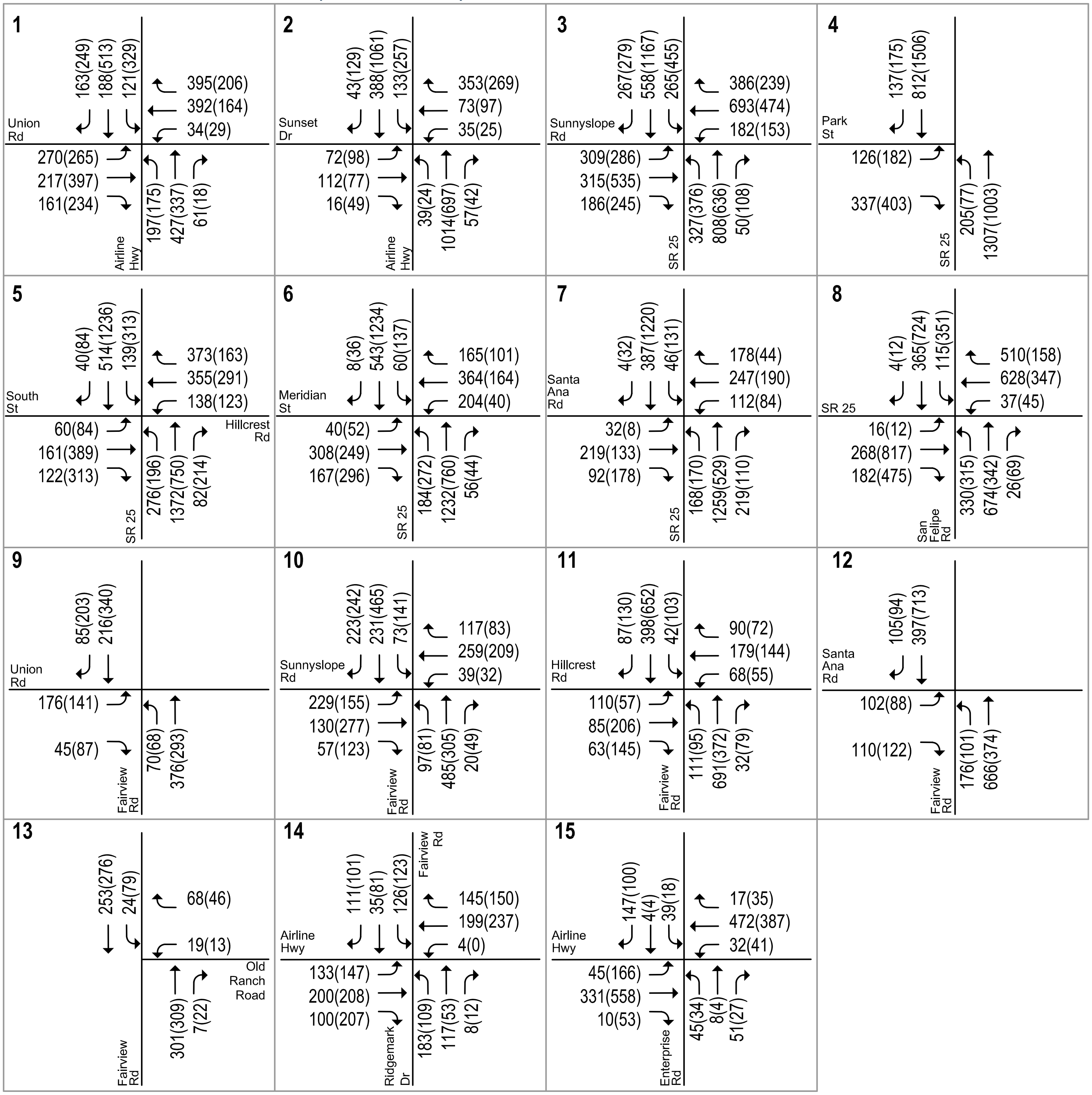
LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 12
Background Traffic Volumes

HEXAGON

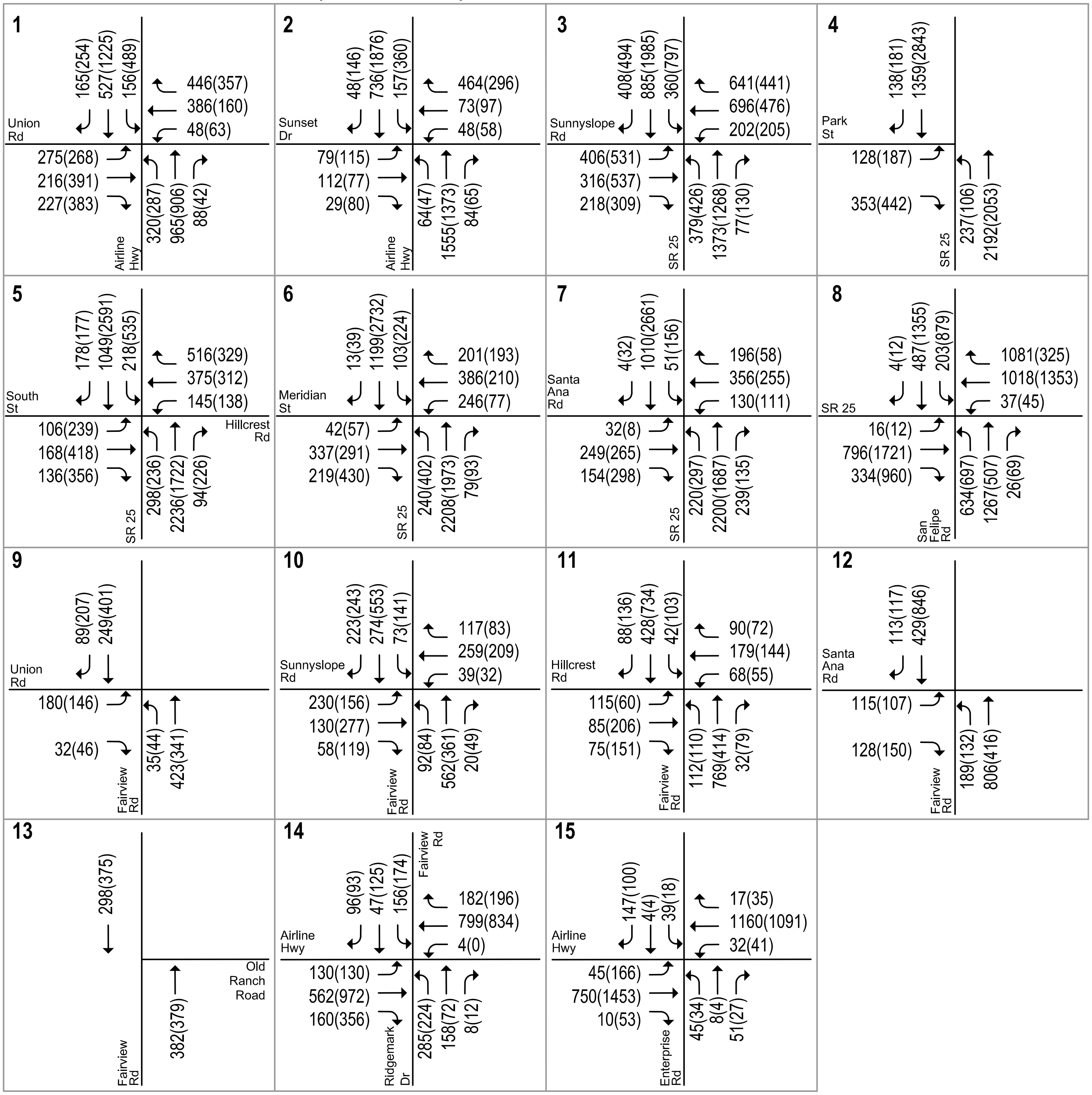
NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 13
Background Plus Project Traffic Volumes



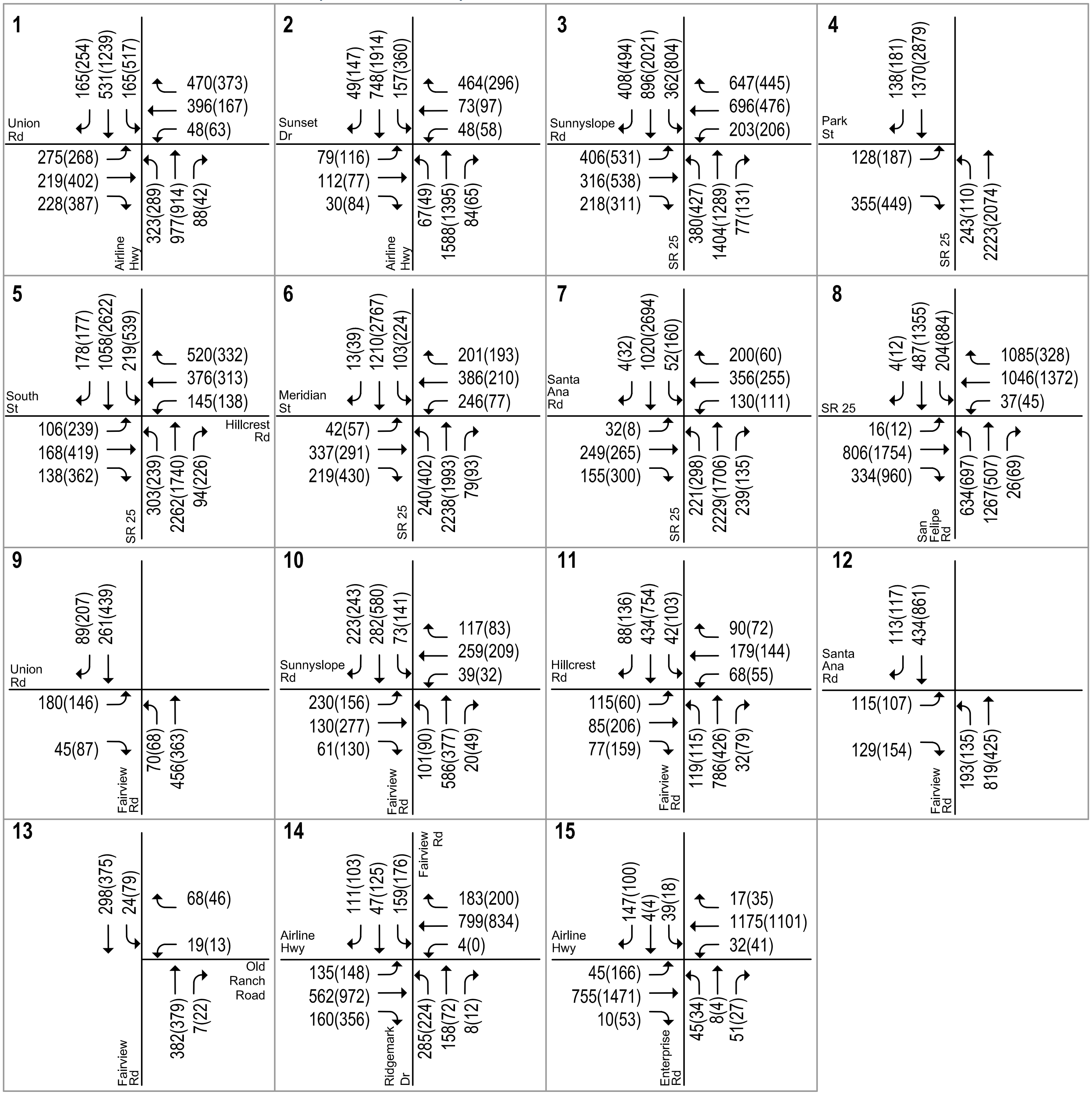
LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 14
Cumulative Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 15
Cumulative Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

Table 5
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*

Unsignalized Intersections

Synchro is also the methodology used to determine the level of service for unsignalized intersections, which is based on the HCM6 methodology for unsignalized intersection analysis. This method is applicable for both two-way and all-way stop-controlled intersections. For the analysis of stop-controlled intersections, the HCM6 methodology evaluates intersection operations based on average control delay time for all vehicles on the stop-controlled approaches. To report the level of service for one- and two-way stop-controlled intersections, the delay and corresponding level of service for the stop-controlled minor street approach with the highest delay is reported. For all-way stop-controlled intersections, the reported average delay and the corresponding level of service is the average for all approaches at the intersection. The correlation between average control delay and level of service for unsignalized intersections is shown in Table 6.

Table 6
Unsignalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*

Signal Warrants

The level of service analysis at unsignalized intersections is supplemented with an assessment of the need for signalization of the intersection. This assessment is made based on signal warrant criteria adopted by Caltrans. For this study, the need for signalization is assessed based on the peak-hour traffic signal warrant, Warrant #3, described in the *California Manual on Uniform Traffic Control Devices for Streets and Highways* (CAMUTCD), Part 4, Highway Traffic Signals, 2014. This method indicates whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify the installation of a traffic signal. Other traffic signal warrants are available, however, they cannot be checked under future conditions (background, project, and cumulative) because they rely on data for which forecasts are not available (such as accidents, pedestrian volume, and four- or eight-hour vehicle volumes). The minimum threshold for the peak-hour traffic signal warrant to be used is 100 vehicles on the highest volume minor street approach.

The decision to install a traffic signal should not be based purely on the warrants alone. Instead, the installation of a signal should be considered and further analysis performed when one or more of the warrants are met. Additionally, engineering judgment is exercised on a case-by-case basis to evaluate the effect a traffic signal will have on certain types of accidents and traffic conditions at the subject intersection as well as at adjacent intersections.

Adverse Effect Criteria

With the adoption of SB 743, level of service is no longer used as a metric to determine significant environmental impacts per CEQA requirements. However, local agencies may still choose to require and utilize level of serve as a tool to evaluate the need to improve the roadway network to serve development growth. The following criteria are used to identify adverse effects at study intersections as a result of a project.

Signalized Intersection Adverse Effect Criteria

For signalized intersections within the jurisdiction of the County and Caltrans, the project is said to create an adverse effect on traffic conditions if for any peak hour:

- The LOS at the intersection degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions; or
- The intersection is already operating at an unacceptable LOS E or F under baseline conditions and the addition of project traffic causes the average intersection delay at the intersection to increase by more than four seconds for County intersections and one second for Caltrans intersections.

Unsignalized Intersection Adverse Effect Criteria

For unsignalized intersections within the jurisdiction of the County and Caltrans, the project is said to create an adverse effect on traffic conditions at the intersection if for any peak hour:

- *All-way stop:* The average overall LOS at the intersection degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions; or
- *All-way stop*: The average overall intersection LOS is already at an unacceptable LOS E or F under baseline conditions and the addition of project traffic causes the average overall delay to increase by more than four seconds for County intersections and one second for Caltrans intersections; or
- *One- or two-way stop*: The delay on the worst approach at a one- or two-way stop-controlled intersection degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions **and** the traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans; or
- *One- or two-way stop*: The delay on the worst approach at a one- or two-way stop-controlled intersection is already at an unacceptable LOS E or F under baseline conditions **and** the traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, **and** the addition of project traffic causes the delay on the worst stop-controlled approach to increase by more than four seconds for County intersections and one second for Caltrans intersections beyond what it was without the project.

Intersection Operations Analysis Results

The intersection level of service analysis is summarized in Table 7. The intersection level of service calculation sheets are included in Appendix B. The peak-hour signal warrant sheets are included in Appendix C.

Existing Plus Project Intersection Operation Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that all study intersections are currently operating at acceptable levels during both the AM and PM peak hours of traffic when measured against the applicable level of service standards. The addition of project-generated trips would not adversely affect traffic operations at any of the study intersections.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the following two unsignalized study intersections currently have peak hour traffic volumes that meet the thresholds that warrant signalization:

11. Fairview Road and Hillcrest Road [SBC]
14. Fairview Road/Ridgemark Drive and Airline Highway [CT]

However, each of the unsignalized intersections operates within the applicable level of service standards. Therefore, a traffic signal is not recommended at either of the intersections identified to have traffic volumes that meet the thresholds that warrant signalization. The remaining unsignalized study intersections currently have and will continue to have traffic conditions that fall below the thresholds that warrant signalization with the addition of project-generated trips.

Background Intersection Operation Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the three study intersections are projected to operate at unacceptable levels under background conditions and would continue to operate at unacceptable levels during at least one of the peak hours under background plus project conditions:

1. Airline Highway and Union Road [CT] (**Adverse Effect**)
11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect**)
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect**)

Based on the applicable adverse effect criteria, all three intersections would be adversely affected by the project under background plus project conditions. All other study intersections are projected to operate at acceptable levels during both the AM and PM peak hours of traffic when measured against the applicable level of service standards with the addition of project-generated trips.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the three study intersections are projected to have peak hour traffic volumes that meet the thresholds that warrant signalization under background conditions would continue to meet signal warrant thresholds under background plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect**)
14. Fairview Road/Ridgemark Drive and Airline Highway [CT]
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect**)

With the exception of the Fairview Road/Ridgemark Drive and Airline Highway intersection, each of the intersections identified to have traffic conditions that meet the thresholds that warrant signalization also are projected to operate at an unacceptable level of service. Based on the San Benito County and Caltrans significance criteria, two of the three intersections would be adversely affected by the project. The remaining unsignalized study intersection currently has and is projected to continue to have traffic conditions that fall below the thresholds that warrant signalization with the addition of project-generated trips.

Adverse Project Effects and Recommended Mitigation Measures

This section discusses the adverse intersection operation effects identified under Background Plus Project conditions. Included are descriptions of the adverse effects on intersection operations and potential improvement measures that may be included as part of the project's Conditions of Approval.

1. Airline Highway and Union Road (Caltrans)

Adverse Effect: The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under background conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during both peak hours. The intersection would also have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by Caltrans standards.

Table 7
Intersection Level of Service Results

#	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Int. Control	Existing: Warrant Met?[3]	Existing: Delay[1]	Existing: LOS	Existing Plus Project: Warrant Met?[3]	Existing Plus Project: Delay[1]	Existing Plus Project: LOS	Existing Plus Project: Change in Delay[2]
1	Airline Highway and Union Road	Caltrans	D	AM	05/22/19	Signal	--	49.4	D	--	53.5	D	4.1
				PM	05/22/19		--	41.9	D	--	47.3	D	5.4
2	Airline Highway and Sunset Drive	Caltrans	D	AM	05/22/19	Signal	--	11.1	B	--	11.1	B	0.0
				PM	05/22/19		--	9.8	A	--	9.9	A	0.1
3	SR 25 and Sunnyslope Road/Tres Pinos Road	Caltrans	D	AM	05/22/19	Signal	--	19.0	B	--	19.1	B	0.1
				PM	05/22/19		--	17.6	B	--	17.8	B	0.2
4	SR 25 and East Park Street	Caltrans	D	AM	05/22/19	Signal	--	6.6	A	--	6.6	A	0.0
				PM	05/22/19		--	5.4	A	--	5.3	A	-0.1
5	SR 25 and Hillcrest Road	Caltrans	D	AM	05/22/19	Signal	--	19.6	B	--	20.0	B	0.4
				PM	05/22/19		--	17.9	B	--	18.2	B	0.3
6	SR 25 and Meridian Street	Caltrans	D	AM	05/22/19	Signal	--	16.7	B	--	17.1	B	0.4
				PM	05/22/19		--	13.2	B	--	13.3	B	0.1
7	SR 25 and Santa Ana Road	Caltrans	D	AM	05/22/19	Signal	--	16.7	B	--	17.0	B	0.3
				PM	05/22/19		--	16.1	B	--	16.4	B	0.3
8	San Felipe Road and SR 25	Caltrans	D	AM	11/06/18	Signal	--	15.5	B	--	15.6	B	0.1
				PM	11/06/18		--	19.3	B	--	19.5	B	0.2
9	Fairview Road and Union Road	County	D	AM	--	Signal	--	0.7	A	--	0.8	A	0.1
				PM	--		--	0.7	A	--	0.7	A	0.0
10	Fairview Road and Sunnyslope Road	County	D	AM	05/22/19	Signal	--	18.5	B	--	18.1	B	-0.4
				PM	05/22/19		--	17.2	B	--	16.6	B	-0.6
11	Fairview Road and Hillcrest Road	County	D	AM	05/22/19	TWSC	**Yes**	19.1	C	**Yes**	20.5	C	1.4
				PM	05/22/19		No	13.4	B	**Yes**	13.8	B	0.4
12	Fairview Road and Santa Ana Road	County	D	AM	05/22/19	Signal	--	--	--	--	--	--	--
				PM	05/22/19		--	--	--	--	--	--	--
13	Fairview Road and Old Ranch Road	County	D	AM	--	TWSC	No	0.0	A	No	11.1	B	11.1
				PM	--		No	0.0	A	No	11.2	B	11.2
14	Fairview Road/Ridgemark Drive and Airline Highway	Caltrans	D	AM	05/22/19	AWSC	**Yes**	12.6	B	**Yes**	12.9	B	0.3
				PM	05/22/19		**Yes**	11.6	B	**Yes**	12.1	B	0.5
15	Enterprise Road and Airline Highway	Caltrans	D	AM	05/22/19	TWSC	No	15.6	C	No	16.4	C	0.8
				PM	05/22/19		No	19.2	C	No	20.8	C	1.6

Notes:

[1]The reported delay and corresponding level of service for signalized intersections represent the average delay for all approaches at the intersection.
The reported delay and corresponding level of service for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.

[2] Change in delay measured relative to existing conditions.

[3] Signal warrant analysis is not applicable to signalized intersections.

Bold indicates unacceptable LOS/signal warrant met.

Bold and boxed indicate adverse effect as a result of the project.

Table 7 (cont.)
Intersection Level of Service Results

#	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Int. Control	Background Warrant Met?[4]	Background Delay[1]	Background LOS	Background Plus Project Warrant Met?[4]	Background Plus Project Delay[1]	Background Plus Project LOS	Background Plus Project Change in Delay[2]	Cumulative No Project Warrant Met?[4]	Cumulative No Project Delay[1]	Cumulative No Project LOS	Cumulative Plus Project Warrant Met?[4]	Cumulative Plus Project Delay[1]	Cumulative Plus Project LOS	Cumulative Plus Project Change in Delay[3]
1	Airline Highway and Union Road	Caltrans	D	AM	#N/A	Signal	--	**126.3**	**F**	--	**143.1**	**F**	**16.8**	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
				PM	#N/A		--	**145.4**	**F**	--	**153.7**	**F**	**8.3**	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
2	Airline Highway and Sunset Drive	Caltrans	D	AM	#N/A	Signal	--	11.9	B	--	12.0	B	0.1	--	23.8	C	--	25.1	C	1.3
				PM	#N/A		--	11.5	B	--	11.6	B	0.1	--	18.7	B	--	19.3	B	0.6
3	SR 25 and Sunnyslope Road/Tres Pinos Road	Caltrans	D	AM	#N/A	Signal	--	24.8	C	--	25.1	C	0.3	--	47.4	D	--	49.1	D	1.7
				PM	#N/A		--	26.1	C	--	26.6	C	0.5	--	**>250**	**F**	--	**>250**	**F**	**>1.0**
4	SR 25 and East Park Street	Caltrans	D	AM	#N/A	Signal	--	7.1	A	--	7.1	A	0.0	--	8.3	A	--	8.4	A	0.1
				PM	#N/A		--	8.3	A	--	8.6	A	0.3	--	20.9	C	--	25.8	C	4.9
5	SR 25 and Hillcrest Road	Caltrans	D	AM	#N/A	Signal	--	32.9	C	--	33.5	C	0.6	--	**135.2**	**F**	--	**138.9**	**F**	**3.7**
				PM	#N/A		--	41.6	D	--	43.5	D	1.9	--	**193.8**	**F**	--	**199.3**	**F**	**5.5**
6	SR 25 and Meridian Street	Caltrans	D	AM	#N/A	Signal	--	22.9	C	--	23.5	C	0.6	--	**87.5**	**F**	--	**90.8**	**F**	**3.3**
				PM	#N/A		--	19.3	B	--	19.8	B	0.5	--	**121.7**	**F**	--	**124.5**	**F**	**2.8**
7	SR 25 and Santa Ana Road	Caltrans	D	AM	#N/A	Signal	--	21.4	C	--	22.1	C	0.7	--	**80.8**	**F**	--	**84.1**	**F**	**3.3**
				PM	#N/A		--	20.9	C	--	21.7	C	0.8	--	**147.9**	**F**	--	**149.0**	**F**	**1.1**
8	San Felipe Road and SR 25	Caltrans	D	AM	#N/A	Signal	--	17.5	B	--	17.7	B	0.2	--	36.1	D	--	36.6	D	0.5
				PM	#N/A		--	23.7	C	--	24.1	C	0.4	--	**137.0**	**F**	--	**138.3**	**F**	**1.3**
9	Fairview Road and Union Road	County	D	AM	#N/A	Signal	--	7.6	A	--	7.6	A	0.0	--	7.6	A	--	7.6	A	0.0
				PM	#N/A		--	6.4	A	--	6.8	A	0.4	--	6.4	A	--	6.8	A	0.4
10	Fairview Road and Sunnyslope Road	County	D	AM	#N/A	Signal	--	25.8	C	--	26.9	C	1.1	--	31.0	C	--	32.8	C	1.8
				PM	#N/A		--	19.0	B	--	19.4	B	0.4	--	20.7	C	--	21.4	C	0.7
11	Fairview Road and Hillcrest Road	County	D	AM	#N/A	TWSC	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>4.0**	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>4.0**
				PM	#N/A		**Yes**	**N/A[4]**	**N/A[4]**	**Yes**	**N/A[5]**	**N/A[5]**	**>4.0**	**Yes**	**N/A[5]**	**N/A[5]**	**Yes**	**N/A[5]**	**N/A[5]**	**>4.0**
12	Fairview Road and Santa Ana Road	County	D	AM	#N/A	Signal	--	7.8	A	--	7.9	A	0.1	--	8.4	A	--	8.4	A	0
				PM	#N/A		--	8.9	A	--	9.0	A	0.1	--	11.6	B	--	12.1	B	0.5
13	Fairview Road and Old Ranch Road	County	D	AM	#N/A	TWSC	No	0.0	A	No	11.5	B	11.5	No	0.0	A	No	12.5	B	12.5
				PM	#N/A		No	0.0	A	No	11.9	B	11.9	No	0.0	A	No	13.1	B	13.1
14	Fairview Road/Ridgemark Drive and Airline Highway	Caltrans	D	AM	#N/A	AWSC	--	15.1	C	--	15.3	C	0.2	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
				PM	#N/A		--	15.1	C	--	15.5	C	0.4	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
15	Enterprise Road and Airline Highway	Caltrans	D	AM	#N/A	TWSC	**Yes**	23.6	C	**Yes**	24.5	C	0.9	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**
				PM	#N/A		**Yes**	**46.8**	**E**	**Yes**	**49.9**	**E**	**3.1**	**Yes**	**>250**	**F**	**Yes**	**>250**	**F**	**>1.0**

Notes:

[1]The reported delay and corresponding level of service for signalized intersections represent the average delay for all approaches at the intersection.
The reported delay and corresponding level of service for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.

[2] Change in delay measured relative to background conditions.

[3] Change in delay measured relative to cumulative no project conditions.

[4] Signal warrant analysis is not applicable to signalized intersections.

[4] Lane configuration and volume conditions exceed the bounds of the unsignalized level of service methodology. The intersection is over capacity, and delay cannot be calculated.

Bold indicates unacceptable LOS/signal warrant met.

Bold and boxed indicate adverse effect as a result of the project.

Improvement: The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve delay and LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

11. Fairview Road and Hillcrest Road (County)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under background conditions and the addition of project traffic would cause the delay at the intersection to increase by more than four seconds during both the AM and PM peak hours and the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by San Benito County standards.

Improvement: The installation of a traffic signal at this intersection as part of the widening of Fairview Road to four lanes between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

Adverse Effect: The intersection level of service would be an unacceptable LOS E during the PM peak hour under background conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second. Additionally, the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by Caltrans standards.

Improvement: The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward implementation of improvements at this intersection.

Cumulative Intersection Operation Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that nine study intersections are projected to operate at unacceptable levels during at least one of the peak hours under cumulative no project and cumulative plus project conditions:

1. Airline Highway and Union Road ^{CT} (**Adverse Effect)**
3. Airline Highway and Union Road ^{CT} (**Adverse Effect)**
5. SR 25 and Hillcrest Road ^{CT} (**Adverse Effect)**
6. SR 25 and Meridian Street ^{CT} (**Adverse Effect)**
7. SR 25 and Santa Ana Road ^{CT} (**Adverse Effect)**

8. San Felipe Road and SR 25 [CT] (**Adverse Effect)**
11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect)**
14. South Ridgemark Drive/Best Road and Airline Highway [CT] (**Adverse Effect)**
15. Fairview Road/Ridgemark Drive and Airline Highway [CT] (**Adverse Effect)**

Based on the applicable significance criteria, each of the nine intersections listed above would be adversely affected by the project. The remaining study intersections are projected to operate at acceptable levels during both the AM and PM peak hours under cumulative no project conditions and cumulative with project conditions when measured against the applicable level of service standards.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that three unsignalized study intersections are projected to have peak hour traffic volumes that meet the thresholds that warrant signalization under cumulative no project and cumulative plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect)**
14. Fairview Road/Ridgemark Drive and Airline Highway [CT] (**Adverse Effect)**
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect)**

Each of the intersections identified above to have traffic conditions that meet the thresholds that warrant signalization also are projected to operate at an unacceptable level of service. Therefore, the installation of traffic signals at each of the intersections listed is warranted. The remaining unsignalized study intersection currently has traffic conditions that fall below the thresholds that warrant signalization.

Adverse Project Effects and Recommended Mitigation Measures

The adverse effects and proposed improvements to mitigate the adverse effects at study intersections are described below.

1. Airline Highway and Union Road (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during both the AM and PM peak hours and the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by Caltrans standards.

Improvement: The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

3. SR 25 and Sunnyslope Road/Tres Pinos Road (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS E during the PM peak hour under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during the PM peak hour. This constitutes an adverse effect by Caltrans standards.

Improvement: Necessary improvements at this intersection include the addition of a separate northbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

5. SR 25 and Hillcrest Road (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during the AM and peak hour under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during the AM and peak hour. This constitutes an adverse effect by Caltrans standards.

Improvement: Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

6. SR 25 and Meridian Street (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during both peak hours. This constitutes an adverse effect by Caltrans standards.

Improvement: Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

7. SR 25 and Santa Ana Road (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during both peak hours. This constitutes an adverse effect by Caltrans standards.

Improvement: Necessary improvements at this intersection include the addition of a separate eastbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

8. San Felipe Road and SR 25 (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during the PM peak hour under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during the PM peak hour. This constitutes an adverse effect by Caltrans standards.

Improvement: Necessary improvements at this intersection include the addition of a second eastbound right-turn lane. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

11. Fairview Road and Hillcrest Road (County)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than four seconds during both the AM and PM peak hours and the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by San Benito County standards.

Improvement: The installation of a traffic signal at the intersection as part of the widening of Fairview Road between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

14. Fairview Road/Ridgemark Drive and Airline Highway (Caltrans)

Adverse Effect**:** The intersection level of service would be an unacceptable LOS F during both the AM and PM peak hours under cumulative no project conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second during both the AM and PM peak hours and the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by Caltrans standards.

Improvement: The installation of a traffic signal at the intersection is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

Adverse Effect: The intersection level of service would be an unacceptable LOS E during the PM peak hour under background conditions and the addition of project traffic would cause the delay at the intersection to increase by more than one second. Additionally, the intersection would have traffic volumes that meet peak-hour signal warrants. This constitutes an adverse effect by Caltrans standards.

Improvement: The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

Bicycle and Pedestrian Circulation

Currently, the project site is not served directly by any bicycle facilities. The nearest Class II bike lanes are provided along Union Road, west of the project site.

Sidewalks would be constructed within the proposed development. The existing project site and the surrounding area is mostly undeveloped, with very few sidewalks. Sidewalks are present in similar subdivisions located off of Fairview Road. However, existing sidewalks are not provided along Fairview Road.

Bicycle and Pedestrian Policies

County and City policies exist that are aimed at developing a complete pedestrian and bicycle network to provide residents with an alternative accessible and desirable mode of transportation. These policies require and/or make recommendations for local jurisdictions to work with residents, developers, lead agencies, and County officials to coordinate, design, implement and maintain bicycle and pedestrian facilities and services. Some of these policies are described below.

City of Hollister 2005 General Plan

The City of Hollister 2005 General Plan acknowledges that most bicycling within the city is done on roadway shoulders, which in many cases can be accommodated on well-designed streets without the need for separate striped bike lanes. However, as traffic increases along many of the streets in Hollister, it is desirable to increase emphasis on accommodating bicycle travel when designing City streets.

One of the City of Hollister General Plan Goals (Goal C2) is to "provide a variety of pedestrian and bicycle facilities to promote safe and efficient non-motorized vehicle circulation in Downtown and throughout Hollister". The General Plan policies further emphasize pedestrian connectivity by working with local businesses, private developers, and public agencies to ensure the provision of safe pedestrian pathways to major public facilities, schools, and employment centers.

Policy C2.1 encourages intergovernmental coordination among the leading agencies (City of Hollister, San Benito County, San Benito County Council of Governments (COG), and Caltrans) to develop, implement, and maintain bicycle facilities as described in the San Benito County Bicycle Master Plan. Implementation of these bicycle facilities would provide direct access to major public facilities, schools, and employment centers, providing an alternative mode of travel to automobile.

2009 San Benito County Bikeway and Pedestrian Master Plan

The 2009 *San Benito County Bikeway and Pedestrian Master Plan* provides a guide for the future development of bicycle and pedestrian facilities within the County. The purpose of the plan is to expand the existing bicycle and pedestrian networks, connect existing gaps, address constrained areas, provide greater connectivity, educate and encourage the use of non-motorized travel alternatives, and to maximize funding sources. The goals of the plan include:

- Increase bicycle and pedestrian access
- Improve bicycle and pedestrian safety
- Ensure all residents are knowledgeable about bicycle and pedestrian safety
- Increase bicycle and pedestrian trips

Master Plan Recommended Bikeway Improvements

The Bikeway and Pedestrian Master Plan identifies various bikeway improvements for the San Benito County regional bikeway network. The recommend improvements for incorporated areas, such as the City of Hollister, were developed focusing on connecting community destinations such as parks, libraries, transit, schools, recreational opportunities, as well as through public input.

The Bikeway and Pedestrian Master Plan identifies a total of 56 bikeway projects in San Benito County. Implementation of the recommended bicycle network improvements would provide an extensive bicycle network within San Benito County, providing a continuous bicycle network with access to virtually every part of town as well as planned regional facilities.

The recommended bicycle improvements were ranked based on criteria such as connections to parks, major employment centers, schools, closure of gaps in the existing network, and public input and safety. From the ranking process, a prioritized list of bicycle projects for construction was developed, which includes Tier 1 (highest potential projects intended for near-term implementation within 1-5 years), Tier 2 (intended for implementation within 6-10 years), and Tier 3 projects (long-term potential bicycle-specific projects that could be implemented over the next 11-20 years). The following bike projects are located in the immediate vicinity of the project site:

- Tier 1 Rank #3 - Class II bike lanes on Airline Highway, between Sunset Drive and Quien Sabe Road
- Tier 1 Rank #7 – Class I bike paths along San Benito River, between San Juan Bautista Park and Airline Highway
- Tier 2 Rank #30 – Class II bike lanes on Fairview Road, between Airline Highway and north of Fallon Road
- Tier 2 Rank #31 – Class II bike lanes on Union Road, between Cienega Road and Fairview Road.

Master Plan Recommended Pedestrian Improvements

The Bikeway and Pedestrian Master Plan also identifies various pedestrian improvements that aim at providing increased opportunities for residents in San Benito County to walk for transportation or recreation. These improvements are not funded but can be capital projects or installed with roadway improvement projects or development/redevelopment of the adjacent properties. The Master Plan lists various pedestrian improvements throughout the County, including the City of Hollister, which include:

- Infill of sidewalk gaps
- Improvements at signalized intersections, including installation of transverse crosswalks, countdown traffic signals, and audible signals, as well as adjusting signal timing to provide additional pedestrian time at locations near elementary schools.
- Improvements at unsignalized intersections, including installation of high-visibility crosswalk markings at local streets adjacent to schools, installation of curb extensions, and improving railroad crossings.
- Curb ramp improvements
- Safe routes to school programs
- Multi-use path projects

The Master Plan recommends various locations where the above pedestrian improvements should be implemented. However, none of the locations listed are near the project site.

San Benito County Regional Transportation Plan

The latest San Benito County *Regional Transportation Plan* (RTP), as described in its latest document (San Benito Regional Transportation Plan 2040, adopted in June 2018), presents a blueprint for solving region-wide transportation issues, now and into the future. The document identifies the existing transportation conditions and plans future needs based on projected growth, previously approved plans, public input, and prior Council of Government Board action. The plan identifies various multimodal transportation projects (including roadway network, public transit, and active transportation improvements) and provides a timeline and cost estimate for each project.

The construction of Tier I Projects identified in the San Benito County Bikeway and Pedestrian Master Plan is identified in the RTP list of projects with a completion date of 2040.

Project's Effect on Bicycle and Pedestrian Facilities

The proposed project could increase the demand for bicycle facilities in the vicinity of the project site. With the existing limited and discontinuous bicycle network, the potential project-related bike riders would have to share the roadway with vehicular traffic, which could discourage the use of the bicycle as an alternative mode of transportation.

With the implementation of the planned bicycle facilities identified in the County's Bikeway and Pedestrian Master Plan, a connection would be provided between the project site and other bicycle facilities to and from the west, providing a continuous bicycle network with access to most areas within Hollister and major facilities outside of town. The County's Bikeway and Pedestrian Master Plan identifies planned bike lanes along Fairview Road, Union Road, and Airline Highway. However, since the above-planned bicycle facilities are not fully funded, it is uncertain when these facilities would be available. Until these facilities are built out, project-related bicycle traffic would need to share the roadway with auto traffic.

The missing sidewalks in the project area make pedestrian travel to/from the project site challenging, discouraging pedestrian activity, or forcing pedestrians to walk along undeveloped roadway shoulders and/or within the street. However, few pedestrian destinations, such as shopping centers, or other pedestrian services, are located within what would be considered an acceptable walking distance (0.25 to 0.5 miles) from the project site. There are several residential subdivision developments that are proposed, approved, or are under construction along Fairview Road. These developments may generate a small number of pedestrian trips. However, since the pedestrian network is undeveloped, it is unlikely pedestrian trips would occur from subdivision to subdivision. Therefore, it is unlikely that the project would generate a measurable need for pedestrian facilities.

Transit Service

County Express operates several fixed-route buses in Hollister and San Benito County. There are currently two County Express bus lines (Blue Line and Green Line) that operate within the City of Hollister. The nearest bus stop to the project site is located along Calistoga Drive, just north of Union Road, approximately 0.8 northwest of the project site.

Transit Service Policies

As with the bicycle and pedestrian facilities, various policies exist within City and County adopted documents that strive at enhancing and expanding the existing transit services to adequately serve both the existing and future demands, providing an efficient, extensive, and easily accessible alternative mode of travel for residents. Some of these policies are described below.

City of Hollister 2005 General Plan

Policies C4.2 and C4.3 of the City of Hollister General Plan encourage intergovernmental coordination among the leading agencies (City of Hollister, San Benito County, COG, and Caltrans) to develop, implement, and maintain public transit services and park and ride facilities. Providing an extensive transit service network could encourage the use of public transportation as an alternative mode of travel.

San Benito County Regional Transportation Plan

The latest San Benito County 2040 RTP, identifies various public transit improvements within the County, most of which would directly benefit the City of Hollister. The RTP public transit improvements and their completion dates are listed in Table 8 below.

Table 8
San Benito County Regional Transportation Plan Public Transit Improvements

Project ID	Project Title	Description	Fully Funded by Year
SB-COG-A08	Rideshare Program (TDM)	Promote the use of alternative modes of transportation	2040
SB-COG-A53	Vanpool Program	Provide vehicle lease progam, planning and coordination	2040
SB-LTA-A37	General Transit Service Operations	Ongoing operation of fixed route, other transit service, and expansion	2040
SB-LTA-A38	Express Bus Service to Gilroy - Gavilan College	Express bus service from City of Hollister to Gavilon College in Gilroy	2035
SB-LTA-A39	Express Bus Service to Gilroy - Caltrain Station	Express bus service from City of Hollister to Gilry Caltrain Station	2035
SB-LTA-A42	Regional Transit Planning	Planning transit infrastracture, new service and opertional improvements	2040
SB-LTA-A46	Regional Transit Connection to Salinas	Transit connection from City of Hollister to City of Salinas	2035
SB-LTA-A47	Regional Transit Connection to Watsonville	Transit connection from City of Hollister to City of Watsonville	2035
SB-LTA-A48	Transit Vehicle Replacements	Replace transit vehicles	2020
SB-LTA-A51	Bus Stop Improvement Program	Transit facilities to accommodate transit connections to Gilroy, Watsonville, and Salinas	2035
SB-LTA-A52	Transit Technology Infrastructure Improvements	Improve transit infrastructure to accommodate operations	2035
SB-LTA-A53	Commuter Rail to Santa Clara County	Commuter rail from Hollister to Gilroy	2040

Source: 2040 San Benito Regional Transportation Plan, Appendix A.

Project's Effect on Transit Services

Although no reduction to the project trip generation estimates was applied due to transit services, it can be assumed that some of the project trips could utilize public transportation. Applying an estimated three percent transit mode share, which is a conservative estimate for the project, equates to approximately at most 5 new transit riders generated by the proposed project during each of the peak hours. The project is not directly served by any transit services. However, the additional transit demand generated by the project would not justify additional transit services in the study area based on the project demand alone.

Site Access and On-Site Circulation

This analysis is based on a review of the preliminary project site plan prepared by Ruggeri Jensen Azar dated October 2021. Site access was evaluated to determine the adequacy of the project site access driveway with regard to the following: traffic volume, sight distance, projected vehicle queues, and geometric design. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles. The site plan is presented in Figure 2.

Site Access

The project proposed to extend the existing Old Ranch Road to the east and construct several on-site streets. The preliminary site plan also shows two additional potential access points: one at the southern and one near the eastern boundaries of the project site.

Vehicular access to the project site would be provided via the existing intersection of Old Ranch Road with Fairview Road. The intersection operations analysis indicates that the Old Ranch Road and Fairview Road is projected to operate at LOS B conditions and is not projected to have peak hour traffic volumes that warrant installation of a signal. However, a southbound left-turn pocket within the median of Fairview Road should be constructed by the project to facilitate access to Old Ranch Road without blocking travel along southbound Fairview Road.

On-Site Circulation

The project would divide the existing property into 141 residential lots. The project would extend Old Ranch Road and construct several small streets, providing direct access to most lots. Several duet units are proposed without direct access to the proposed streets and are assumed to have driveways leading to the two-car garages located on the ground level of the units. No dead-ends are proposed with the exception of a single cul-de-sac. The site plan shows a 40-foot radii for the cul-de-sac. The final design should be revised to a minimum 100-foot diameter cul-de-sac to meet county requirements. Additionally, a “dead end” sign should be posted at the entrance to the cul-de-sac street.

The site layout allows for continuous traffic circulation through the project site. Corner radii and roadway widths within the site appear to be sufficient to allow for the circulation of large design vehicles such as garbage trucks and fire trucks. The preliminary site plan shows 56 feet of right-of-way throughout the site. County standards require a right-of-way width of 60 feet. The project should coordinate with city staff to determine whether the proposed street right-of-way is acceptable.

With the proposed internal roadway layout and adhering to County roadway design standards and guidelines, emergency vehicle access and circulation within the project site should be adequate, making every proposed residential unit within the project development accessible.

Recommendation: A “Dead End” or “No Outlet” sign should be posted at the entrance to the cul-de-sac

Recommendation: The proposed project should adhere to County roadway design standards and guidelines when designing roadway widths and turn radii.

Sight Distance

Adequate sight distance (sight distance triangles) should be provided along at internal streets in accordance with the *American Association of State Highway Transportation Officials* (AASHTO) standards. Any landscaping or street trees should be planted and maintained so that they do not block sight distance at internal intersections. Stop signs should be provided at cross streets within the proposed internal roadways.

The project proposes to install a stop sign along Old Ranch Road at its intersection with Fairview Road. Sight distance triangles should be measured at the driveway approximately 10 feet back from the traveled way. Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection and provides drivers with the ability to exit a driveway and locate sufficient gaps in traffic. The minimum acceptable sight distance is often considered the AASHTO stopping sight distance. Sight distance requirements vary depending on the roadway speeds. Fairview Road has a posted speed limit of 55 mph. The AASHTO stopping sight distance for a facility with a posted speed limit of 55 mph is 495 feet. Thus, a driver exiting the project site along Old Ranch Road must be able to see approaching traffic on Fairview Road at a minimum distance of 495 feet to be able to stop and avoid a collision.

Based on aerial images, there are no existing trees or visual obstructions along Fairview Road at Old Ranch Road that would obscure sight distance to drivers exiting the project site, providing a clear view of approaching traffic on both sides of Fairview Road beyond the minimum required distance of 495 feet. Therefore, it can be concluded that the project access street along Fairview Road would meet the AASHTO minimum stopping sight distance standards.

Recommendation: Any landscaping or street trees should be planted and maintained so that they do not block sight distance at internal intersections. Stop signs should be provided at cross streets within the proposed internal roadways.

5.
Conclusions

The potential impacts of the project were evaluated in accordance with the California Environmental Quality Act (CEQA) guidelines and the San Benito County *Draft SB 743 Implementation Policy*. A supplemental traffic operations analysis also was completed. However, the determination of project impacts per CEQA requirements is based solely on the VMT analysis

CEQA VMT Analysis

Project-Level VMT Impact Analysis

The results of the VMT analysis, using the County's TDF model, indicates that the proposed project is projected to generate 21.3 VMT per capita. Because the project's VMT per capita would exceed the impact threshold of 19.6 VMT per capita, the proposed project would have an impact on the transportation system based on the County's VMT impact criteria.

Project Impacts and Mitigation Measures

Project Impact: Since the VMT generated by the project (21.3 VMT per capita) would exceed the threshold of 19.6 VMT per capita, the project would result in a significant transportation impact on VMT. Therefore, mitigation measures are required to reduce the VMT impact. Per the county's impact thresholds, the project would need to implement VMT reduction measures to achieve an 8 percent reduction (21.3 to 19.6) in its VMT per capita for the proposed residential uses to reduce its impact to less than significant levels.

The County's policy identifies the following TDM measures for residential uses:

- T-8 Subsidized Transit Program: Provide subsidized or discounted, or free transit passes for residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving increasing the total number of transit trips and decreasing vehicle trips.
- T-22 Community-Based Travel Planning: Target residences in the community with community-based travel planning (CBTP). CBTP is a residential based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles.
- T-17 Pedestrian Network Improvement: Increase sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive.

- T-18 Construct or Improve Bike Facility: Construct or improve a single bicycle lane facility that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area.

However, the implementation of the above measures and resulting reduction in VMT presumes that there are robust existing transit services, and an existing bicycle and pedestrian network. Since the supporting transit, bicycle, and pedestrian facilities do not exist, the VMT per capita would still be greater than the County's recommended impact threshold of 19.6 VMT per capita with the implementation of the identified measures.

The County's 15% below existing VMT impact threshold (also recommended by the OPR) encourages developments in transit-rich, highly mixed-use areas to implement design features and trip reduction measures to take advantage of existing multi-model infrastructure and land use mixes in reducing trip making and/or trip lengths. However, the project is located in a rural setting with very limited multi-modal transportation infrastructure and low mixture of complementary land uses. The lack of major transit options results in a greater number and longer commute trips. Therefore, it is highly unlikely that residential developments like the proposed project in the County can achieve the 15% reduction in VMT. Therefore, absent of the County reducing its adopted VMT impact thresholds, the proposed project's VMT impact must be deemed significant and unavoidable.

Transportation Operations Analysis

The intersection operations analysis is intended to quantify the operations of intersections and to identify potential negative effects due to the addition of project traffic. However, a potential adverse effect on a study intersection operation is not considered a CEQA impact metric. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the effects of added project traffic.

Trip Generation

Based on the trip generation rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*, it is estimated that the project would generate 1,608 daily vehicle trips, with 118 trips (31 inbound and 87 outbound) occurring during the AM peak hour and 160 trips (101 inbound and 59 outbound) occurring during the PM peak hour.

Intersection Operation Analysis

Existing Plus Project Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the addition of project-generated trips would not adversely affect traffic operations at any of the study intersections under existing plus project conditions.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the unsignalized study intersections currently have and will continue to have traffic conditions that fall below the thresholds that warrant signalization with the addition of project-generated trips.

Background Intersection Operation Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the following three intersections would be adversely affected by the project under background plus project conditions:

1. Airline Highway and Union Road [CT] (**Adverse Effect**)
11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect**)
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect**)

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the following two intersections would have traffic conditions that meet the thresholds that warrant signalization and would be adversely affected by the project under background plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road [SBC] (**Adverse Effect**)
15. Enterprise Road and Airline Highway [CT] (**Adverse Effect**)

The potential improvement measures that may be included as part of the project's Conditions of Approval are described below.

1. Airline Highway and Union Road (Caltrans)

The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve delay and LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

11. Fairview Road and Hillcrest Road (County)

The installation of a traffic signal at this intersection as part of the widening of Fairview Road to four lanes between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward implementation of improvements at this intersection.

Cumulative Conditions

Intersection Level of Service Analysis

The results of the intersection level of service analysis indicate that the following nine intersections would be adversely affected by the project under cumulative plus project conditions:

1. Airline Highway and Union Road CT (**Adverse Effect)**
3. Airline Highway and Union Road CT (**Adverse Effect)**
5. SR 25 and Hillcrest Road CT (**Adverse Effect)**
6. SR 25 and Meridian Street CT (**Adverse Effect)**
7. SR 25 and Santa Ana Road CT (**Adverse Effect)**
8. San Felipe Road and SR 25 CT (**Adverse Effect)**
11. Fairview Road and Hillcrest Road SBC (**Adverse Effect)**
14. South Ridgemark Drive/Best Road and Airline Highway CT (**Adverse Effect)**
15. Fairview Road/Ridgemark Drive and Airline Highway CT (**Adverse Effect)**

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis indicates that the following three intersections would have traffic conditions that meet the thresholds that warrant signalization and would be adversely affected by the project under cumulative plus project conditions during at least one of the peak hours:

11. Fairview Road and Hillcrest Road SBC (**Adverse Effect)**
14. Fairview Road/Ridgemark Drive and Airline Highway CT (**Adverse Effect)**
15. Enterprise Road and Airline Highway CT (**Adverse Effect)**

The potential improvement measures that may be included as part of the project's Conditions of Approval are described below.

1. Airline Highway and Union Road (Caltrans)

The widenings of Union Road to four lanes between San Benito Street and Airline Highway and of Airline Highway to four lanes between Sunset Drive and Fairview Road are included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). In addition, separate eastbound and westbound right-turn lanes with dedicated right-turn arrows and changing the signal phasing on Union Road from split to protected would also be required to improve LOS to less than no-project levels. The developer will be required to pay the applicable TIF fee as a fair-share contribution toward the implementation of improvements at this intersection.

3. SR 25 and Sunnyslope Road/Tres Pinos Road (Caltrans)

Necessary improvements at this intersection include the addition of a separate northbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

5. SR 25 and Hillcrest Road (Caltrans)

Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

6. SR 25 and Meridian Street (Caltrans)

Necessary improvements at this intersection include the addition of third northbound and southbound through lanes. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

7. SR 25 and Santa Ana Road (Caltrans)

Necessary improvements at this intersection include the addition of a separate eastbound right-turn lane. The developer may be required to pay a fair-share toward improvement costs at this intersection.

8. San Felipe Road and SR 25 (Caltrans)

Necessary improvements at this intersection include the addition of a second eastbound right-turn lane. Right-of-way along SR 25 appears to be available to implement the improvements. The developer may be required to pay a fair-share toward improvement costs at this intersection.

11. Fairview Road and Hillcrest Road (County)

The installation of a traffic signal at the intersection as part of the widening of Fairview Road between Airline Highway and McCloskey Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

14. Fairview Road/Ridgemark Drive and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

15. Enterprise Road and Airline Highway (Caltrans)

The installation of a traffic signal at the intersection as part of the widening of Airline Highway to four lanes between Sunset Drive and Fairview Road is included as part of the improvement projects of the San Benito County Regional Transportation Impact Mitigation Fee (TIMF). The developer will be required to pay the applicable TIF fee as a fair-share contribution toward improvements at this intersection.

Bicycle and Pedestrian Circulation

Currently, the project site is not served directly by any bicycle facilities. The nearest Class II bike lanes are provided along Union Road, west of the project site.

Sidewalks would be constructed within the proposed development. The existing project site and the surrounding area is mostly undeveloped, with very few sidewalks. Sidewalks are present in similar subdivisions located off of Fairview Road. However, existing sidewalks are not provided along Fairview Road.

The proposed project could increase the demand for bicycle facilities in the vicinity of the project site. With the existing limited and discontinuous bicycle network, the potential project-related bike riders would have to share the roadway with vehicular traffic, which could discourage the use of the bicycle as an alternative mode of transportation.

The County's Bikeway and Pedestrian Master Plan identifies several planned bicycle facilities that would connect the project site to other bicycle facilities and points of interests. With the implementation of the planned bicycle facilities identified in the County's Bikeway and Pedestrian Master Plan, a connection would be provided between the project site and other bicycle facilities to and from the west, providing a continuous bicycle network with access to most areas within Hollister and major facilities outside of town. The County's Bikeway and Pedestrian Master Plan identifies planned bike lanes along Fairview Road, Union Road, and Airline Highway. However, since the above-planned bicycle facilities are not fully funded, it is uncertain when these facilities would be available. Until these facilities are built out, project-related bicycle traffic would need to share the roadway with auto traffic.

The missing sidewalks in the project area make pedestrian travel to/from the project site challenging, discouraging pedestrian activity, or forcing pedestrians to walk along undeveloped roadway shoulders and/or within the street. However, few pedestrian destinations, such as shopping centers, or other pedestrian services, are located within what would be considered an acceptable walking distance (0.25 to 0.5 miles) from the project site. There are several residential subdivision developments that are proposed, approved, or are under construction along Fairview Road. These developments may generate a small number of pedestrian trips. However, since the pedestrian network is undeveloped, it is unlikely pedestrian trips would occur from subdivision to subdivision. Therefore, it is very unlikely that the project would generate a measurable need for pedestrian facilities.

Transit Service

County Express operates several fixed-route buses in Hollister and San Benito County. There are currently two County Express bus lines (Blue Line and Green Line) that operate within the City of Hollister. The nearest bus stop to the project site is located along Calistoga Drive, just north of Union Road, approximately 0.8 northwest of the project site.

Although no reduction to the project trip generation estimates was applied due to transit services, it can be assumed that some of the project trips could utilize public transportation. Applying an estimated three percent transit mode share, which is a conservative estimate for the project, equates to approximately at most 5 new transit riders generated by the proposed project during each of the peak hours. The project is not directly served by any transit services. However, the additional transit demand generated by the project would not justify additional transit services in the study area based on the project demand alone.

Site Access and On-Site Circulation

The report makes the following recommendations regarding site access, on-site circulation, and sight distance:

- A southbound left-turn pocket within the median of Fairview Road should be constructed by the project to facilitate access to Old Ranch Road without blocking travel along southbound Fairview Road.
- A “Dead End” or “No Outlet” sign should be posted at the entrance to the cul-de-sac
- The proposed project should adhere to County roadway design standards and guidelines when designing roadway widths and turn radii.
- Any landscaping or street trees should be planted and maintained so that they do not block sight distance at internal intersections. Stop signs should be provided at cross streets within the proposed internal roadways.

Lee Subdivision Residential Transportation Analysis

Technical Appendices

Appendix A

Peak Hour Volume Summary

Intersection Number: 1
Intersection Name: Airline Highway & Union Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	116	132	72	252	296	32	60	296	152	124	176	172	1880
Approved Project Trips													
Total Approved Trips	47	52	40	119	86	2	1	119	42	36	38	98	680
Background Conditions	163	184	112	371	382	34	61	415	194	160	214	270	2560
Pending Project Trips													
Total Pending Trips	2	343	44	75	4	14	27	550	126	67	2	5	1259
Cumulative Conditions	165	527	156	446	386	48	88	965	320	227	216	275	3819
Project Trips													
Existing Conditions	0	6	0	0	0	1	2	18	13	5	0	0	45
Background and Cumulative Conditions	0	4	9	24	10	0	0	12	3	1	3	0	66
Existing + Project	116	138	72	252	296	33	62	314	165	129	176	172	1925
Background + Project	163	188	121	395	392	34	61	427	197	161	217	270	2626
Cumulative + Project	165	531	165	470	396	48	88	977	323	228	219	275	3885

Intersection Number: 2
Intersection Name: Airline Highway & Sunset Drive
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	32	244	116	316	72	32	52	656	28	12	112	52	1724
Approved Project Trips													
Total Approved Trips	10	132	17	37	1	3	5	325	8	3	0	20	561
Background Conditions	42	376	133	353	73	35	57	981	36	15	112	72	2285
Pending Project Trips													
Total Pending Trips	6	360	24	111	0	13	27	574	28	14	0	7	1164
Cumulative Conditions	48	736	157	464	73	48	84	1555	64	29	112	79	3449
Project Trips													
Existing Conditions	1	5	0	0	0	0	0	15	3	1	0	0	25
Background and Cumulative Conditions	1	12	0	0	0	0	0	33	3	1	0	0	50
Existing + Project	33	249	116	316	72	32	52	671	31	13	112	52	1749
Background + Project	43	388	133	353	73	35	57	1014	39	16	112	72	2335
Cumulative + Project	49	748	157	464	73	48	84	1588	67	30	112	79	3499

Intersection Number: 3
Intersection Name: SR 25/Airline Highway & Sunnyslope Road/Tres Pinos Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	188	432	192	236	536	176	44	516	228	156	240	260	3204
Approved Project Trips													
Total Approved Trips	79	115	71	144	157	5	6	261	98	30	75	49	1090
Background Conditions	267	547	263	380	693	181	50	777	326	186	315	309	4294
Pending Project Trips													
Total Pending Trips	141	338	97	261	3	21	27	596	53	32	1	97	1667
Cumulative Conditions	408	885	360	641	696	202	77	1373	379	218	316	406	5961
Project Trips													
Existing Conditions	0	5	4	12	1	1	0	14	0	0	0	0	37
Background and Cumulative Conditions	0	11	2	6	0	1	0	31	1	0	0	0	52
Existing + Project	188	437	196	248	537	177	44	530	228	156	240	260	3241
Background + Project	267	558	265	386	693	182	50	808	327	186	315	309	4346
Cumulative + Project	408	896	362	647	696	203	77	1404	380	218	316	406	6013

Intersection Number: 4
Intersection Name: SR 25 & East Park Street
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	108	572	0	0	0	0	0	828	192	300	0	108	2108
Approved Project Trips													
Total Approved Trips	29	229	0	0	0	0	0	448	7	35	0	18	766
Background Conditions	137	801	0	0	0	0	0	1276	199	335	0	126	2874
Pending Project Trips													
Total Pending Trips	1	558	0	0	0	0	0	916	38	18	0	2	1533
Cumulative Conditions	138	1359	0	0	0	0	0	2192	237	353	0	128	4407
Project Trips													
Existing Conditions	2	8	0	0	0	0	0	22	5	2	0	1	40
Background and Cumulative Conditions	0	11	0	0	0	0	0	31	6	2	0	0	50
Existing + Project	110	580	0	0	0	0	0	850	197	302	0	109	2148
Background + Project	137	812	0	0	0	0	0	1307	205	337	0	126	2924
Cumulative + Project	138	1370	0	0	0	0	0	2223	243	355	0	128	4457

Intersection Number: 5
Intersection Name: SR 25 & Hillcrest Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	40	380	120	320	252	60	44	1036	144	60	116	60	2632
Approved Project Trips													
Total Approved Trips	0	125	18	49	102	78	38	310	127	60	45	0	952
Background Conditions	40	505	138	369	354	138	82	1346	271	120	161	60	3584
Pending Project Trips													
Total Pending Trips	138	544	80	147	21	7	12	890	27	16	7	46	1935
Cumulative Conditions	178	1049	218	516	375	145	94	2236	298	136	168	106	5519
Project Trips													
Existing Conditions	0	6	2	7	2	2	1	18	4	1	1	0	44
Background and Cumulative Conditions	0	9	1	4	1	0	0	26	5	2	0	0	48
Existing + Project	40	386	122	327	254	62	45	1054	148	61	117	60	2676
Background + Project	40	514	139	373	355	138	82	1372	276	122	161	60	3632
Cumulative + Project	178	1058	219	520	376	145	94	2262	303	138	168	106	5567

Intersection Number: 6
Intersection Name: SR 25 & Meridian Street
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	8	428	60	164	352	204	56	916	112	128	284	40	2752
Approved Project Trips													
Total Approved Trips	0	104	0	1	12	0	0	286	72	39	24	0	538
Background Conditions	8	532	60	165	364	204	56	1202	184	167	308	40	3290
Pending Project Trips													
Total Pending Trips	5	667	43	36	22	42	23	1006	56	52	29	2	1983
Cumulative Conditions	13	1199	103	201	386	246	79	2208	240	219	337	42	5273
Project Trips													
Existing Conditions	0	9	0	0	0	0	0	24	0	0	0	0	33
Background and Cumulative Conditions	0	11	0	0	0	0	0	30	0	0	0	0	41
Existing + Project	8	437	60	164	352	204	56	940	112	128	284	40	2785
Background + Project	8	543	60	165	364	204	56	1232	184	167	308	40	3331
Cumulative + Project	13	1210	103	201	386	246	79	2238	240	219	337	42	5314

Intersection Number:	7												
Intersection Name:	SR 25		& Santa Ana Road										
Peak Hour:	AM									Date of Analysis: 02/11/22			
Count Date:	05/22/19												

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	4	284	36	148	236	104	208	960	160	88	212	32	2472
Approved Project Trips													
Total Approved Trips	0	93	9	26	11	8	11	270	7	3	7	0	445
Background Conditions	4	377	45	174	247	112	219	1230	167	91	219	32	2917
Pending Project Trips													
Total Pending Trips	0	633	6	22	109	18	20	970	53	63	30	0	1924
Cumulative Conditions	4	1010	51	196	356	130	239	2200	220	154	249	32	4841
Project Trips													
Existing Conditions	0	8	2	6	0	0	0	23	1	0	0	0	40
Background and Cumulative Conditions	0	10	1	4	0	0	0	29	1	1	0	0	46
Existing + Project	4	292	38	154	236	104	208	983	161	88	212	32	2512
Background + Project	4	387	46	178	247	112	219	1259	168	92	219	32	2963
Cumulative + Project	4	1020	52	200	356	130	239	2229	221	155	249	32	4887

Intersection Number:	8												
Intersection Name:	San Felipe Road		& SR 25										
Peak Hour:	AM									Date of Analysis: 02/11/22			
Count Date:	11/06/18												

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	4	348	100	432	396	20	12	604	284	164	184	16	2564
Approved Project Trips													
Total Approved Trips	0	17	14	74	204	17	14	70	46	18	74	0	548
Background Conditions	4	365	114	506	600	37	26	674	330	182	258	16	3112
Pending Project Trips													
Total Pending Trips	0	122	89	575	418	0	0	593	304	152	538	0	2791
Cumulative Conditions	4	487	203	1081	1018	37	26	1267	634	334	796	16	5903
Project Trips													
Existing Conditions	0	0	1	4	26	0	0	0	0	0	9	0	40
Background and Cumulative Conditions	0	0	1	4	28	0	0	0	0	0	10	0	43
Existing + Project	4	348	101	436	422	20	12	604	284	164	193	16	2604
Background + Project	4	365	115	510	628	37	26	674	330	182	268	16	3155
Cumulative + Project	4	487	204	1085	1046	37	26	1267	634	334	806	16	5946

Intersection Number: 9
Intersection Name: Fairview Road & Union Road
Peak Hour: AM
Count Date: n/a
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	155	0	0	0	0	0	248	0	0	0	0	403
Approved Project Trips													
Total Approved Trips	85	49	0	0	0	0	0	95	35	32	0	176	472
Background Conditions	85	204	0	0	0	0	0	343	35	32	0	176	875
Pending Project Trips													
Total Pending Trips	4	45	0	0	0	0	0	80	0	0	0	4	133
Cumulative Conditions	89	249	0	0	0	0	0	423	35	32	0	180	1008
Project Trips													
Existing Conditions	0	18	0	0	0	0	0	51	0	0	0	0	69
Background and Cumulative Conditions	0	12	0	0	0	0	0	33	35	13	0	0	93
Existing + Project	0	173	0	0	0	0	0	299	0	0	0	0	472
Background + Project	85	216	0	0	0	0	0	376	70	45	0	176	968
Cumulative + Project	89	261	0	0	0	0	0	456	70	45	0	180	1101

Intersection Number: 10
Intersection Name: Fairview Road & Sunnyslope Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	180	130	39	45	47	7	5	261	33	33	29	192	1001
Approved Project Trips													
Total Approved Trips	43	93	34	72	212	32	15	200	55	21	101	37	915
Background Conditions	223	223	73	117	259	39	20	461	88	54	130	229	1916
Pending Project Trips													
Total Pending Trips	0	51	0	0	0	0	0	101	4	4	0	1	161
Cumulative Conditions	223	274	73	117	259	39	20	562	92	58	130	230	2077
Project Trips													
Existing Conditions	0	12	0	0	0	0	0	35	16	6	0	0	69
Background and Cumulative Conditions	0	8	0	0	0	0	0	24	9	3	0	0	44
Existing + Project	180	142	39	45	47	7	5	296	49	39	29	192	1070
Background + Project	223	231	73	117	259	39	20	485	97	57	130	229	1960
Cumulative + Project	223	282	73	117	259	39	20	586	101	61	130	230	2121

Intersection Number: 11
Intersection Name: Fairview Road & Hillcrest Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	87	316	0	0	0	0	0	464	36	36	0	109	1048
Approved Project Trips													
Total Approved Trips	0	76	42	90	179	68	32	210	68	25	85	1	876
Background Conditions	87	392	42	90	179	68	32	674	104	61	85	110	1924
Pending Project Trips													
Total Pending Trips	1	36	0	0	0	0	0	95	8	14	0	5	159
Cumulative Conditions	88	428	42	90	179	68	32	769	112	75	85	115	2083
Project Trips													
Existing Conditions	0	8	0	0	0	0	0	22	12	4	0	0	46
Background and Cumulative Conditions	0	6	0	0	0	0	0	17	7	2	0	0	32
Existing + Project	87	324	0	0	0	0	0	486	48	40	0	109	1094
Background + Project	87	398	42	90	179	68	32	691	111	63	85	110	1956
Cumulative + Project	88	434	42	90	179	68	32	786	119	77	85	115	2115

Intersection Number: 12
Intersection Name: Fairview Road & Santa Ana Road
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	105	304	0	0	0	0	0	425	129	90	0	102	1155
Approved Project Trips													
Total Approved Trips	0	88	0	0	0	0	0	228	43	19	0	0	378
Background Conditions	105	392	0	0	0	0	0	653	172	109	0	102	1533
Pending Project Trips													
Total Pending Trips	8	37	0	0	0	0	0	153	17	19	0	13	247
Cumulative Conditions	113	429	0	0	0	0	0	806	189	128	0	115	1780
Project Trips													
Existing Conditions	0	6	0	0	0	0	0	16	7	2	0	0	31
Background and Cumulative Conditions	0	5	0	0	0	0	0	13	4	1	0	0	23
Existing + Project	105	310	0	0	0	0	0	441	136	92	0	102	1186
Background + Project	105	397	0	0	0	0	0	666	176	110	0	102	1556
Cumulative + Project	113	434	0	0	0	0	0	819	193	129	0	115	1803

Intersection Number: 13
Intersection Name: Fairview Road & Old Ranch Road
Peak Hour: AM
Count Date: n/a
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	155	0	0	0	0	0	248	0	0	0	0	403
Approved Project Trips													
Total Approved Trips	0	98	0	0	0	0	0	53	0	0	0	0	151
Background Conditions	0	253	0	0	0	0	0	301	0	0	0	0	554
Pending Project Trips													
Total Pending Trips	0	45	0	0	0	0	0	81	0	0	0	0	126
Cumulative Conditions	0	298	0	0	0	0	0	382	0	0	0	0	680
Project Trips													
Existing Conditions	0	0	18	51	0	36	13	0	0	0	0	0	118
Background and Cumulative Conditions	0	0	24	68	0	19	7	0	0	0	0	0	118
Existing + Project	0	155	18	51	0	36	13	248	0	0	0	0	521
Background + Project	0	253	24	68	0	19	7	301	0	0	0	0	672
Cumulative + Project	0	298	24	68	0	19	7	382	0	0	0	0	798

Intersection Number: 14
Intersection Name: Fairview Road/Ridgem & Airline Highway
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	64	24	68	120	172	4	8	112	176	96	160	104	1108
Approved Project Trips													
Total Approved Trips	32	11	55	24	27	0	0	5	7	4	40	24	229
Background Conditions	96	35	123	144	199	4	8	117	183	100	200	128	1337
Pending Project Trips													
Total Pending Trips	0	12	33	38	600	0	0	41	102	60	362	2	1250
Cumulative Conditions	96	47	156	182	799	4	8	158	285	160	562	130	2587
Project Trips													
Existing Conditions	33	0	3	1	0	0	0	0	0	0	0	12	49
Background and Cumulative Conditions	15	0	3	1	0	0	0	0	0	0	0	5	24
Existing + Project	97	24	71	121	172	4	8	112	176	96	160	116	1157
Background + Project	111	35	126	145	199	4	8	117	183	100	200	133	1361
Cumulative + Project	111	47	159	183	799	4	8	158	285	160	562	135	2611

Intersection Number: 15
Intersection Name: Enterprise Road & Airline Highway
Peak Hour: AM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	48	4	36	16	396	28	40	8	44	8	272	12	912
Approved Project Trips													
Total Approved Trips	99	0	3	1	61	4	11	0	1	2	54	33	269
Background Conditions	147	4	39	17	457	32	51	8	45	10	326	45	1181
Pending Project Trips													
Total Pending Trips	0	0	0	0	703	0	0	0	0	0	424	0	1127
Cumulative Conditions	147	4	39	17	1160	32	51	8	45	10	750	45	2308
Project Trips													
Existing Conditions	0	0	0	0	33	0	0	0	0	0	12	0	45
Background and Cumulative Conditions	0	0	0	0	15	0	0	0	0	0	5	0	20
Existing + Project	48	4	36	16	429	28	40	8	44	8	284	12	957
Background + Project	147	4	39	17	472	32	51	8	45	10	331	45	1201
Cumulative + Project	147	4	39	17	1175	32	51	8	45	10	755	45	2328

Intersection Number: 1
Intersection Name: Airline Highway & Union Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	120	344	168	112	92	28	16	220	124	176	288	172	1860
Approved Project Trips													
Total Approved Trips	129	155	133	78	65	1	2	109	49	54	98	93	966
Background Conditions	249	499	301	190	157	29	18	329	173	230	386	265	2826
Pending Project Trips													
Total Pending Trips	5	726	188	167	3	34	24	577	114	153	5	3	1999
Cumulative Conditions	254	1225	489	357	160	63	42	906	287	383	391	268	4825
Project Trips													
Existing Conditions	0	21	0	0	0	2	1	12	9	15	0	0	60
Background and Cumulative Conditions	0	14	28	16	7	0	0	8	2	4	11	0	90
Existing + Project	120	365	168	112	92	30	17	232	133	191	288	172	1920
Background + Project	249	513	329	206	164	29	18	337	175	234	397	265	2916
Cumulative + Project	254	1239	517	373	167	63	42	914	289	387	402	268	4915

Intersection Number: 2
Intersection Name: Airline Highway & Sunset Drive
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	72	620	196	224	96	20	36	408	16	36	76	48	1848
Approved Project Trips													
Total Approved Trips	56	403	61	45	1	5	6	267	6	9	1	49	909
Background Conditions	128	1023	257	269	97	25	42	675	22	45	77	97	2757
Pending Project Trips													
Total Pending Trips	18	853	103	27	0	33	23	698	25	35	0	18	1833
Cumulative Conditions	146	1876	360	296	97	58	65	1373	47	80	77	115	4590
Project Trips													
Existing Conditions	1	17	0	0	0	0	0	10	2	4	0	1	35
Background and Cumulative Conditions	1	38	0	0	0	0	0	22	2	4	0	1	68
Existing + Project	73	637	196	224	96	20	36	418	18	40	76	49	1883
Background + Project	129	1061	257	269	97	25	42	697	24	49	77	98	2825
Cumulative + Project	147	1914	360	296	97	58	65	1395	49	84	77	116	4658

Intersection Number: 3
Intersection Name: SR 25/Airline Highway & Sunnyslope Road/Tres Pinos Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	204	712	236	128	308	144	100	448	204	172	368	192	3216
Approved Project Trips													
Total Approved Trips	75	419	212	107	166	8	7	167	171	71	166	94	1663
Background Conditions	279	1131	448	235	474	152	107	615	375	243	534	286	4879
Pending Project Trips													
Total Pending Trips	215	854	349	206	2	53	23	653	51	66	3	245	2720
Cumulative Conditions	494	1985	797	441	476	205	130	1268	426	309	537	531	7599
Project Trips													
Existing Conditions	0	16	14	8	1	1	1	10	0	1	2	0	54
Background and Cumulative Conditions	0	36	7	4	0	1	1	21	1	2	1	0	74
Existing + Project	204	728	250	136	309	145	101	458	204	173	370	192	3270
Background + Project	279	1167	455	239	474	153	108	636	376	245	535	286	4953
Cumulative + Project	494	2021	804	445	476	206	131	1289	427	311	538	531	7673

Intersection Number: 4
Intersection Name: SR 25 & East Park Street
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	84	952	0	0	0	0	0	620	68	208	0	84	2016
Approved Project Trips													
Total Approved Trips	91	518	0	0	0	0	0	362	5	188	0	98	1262
Background Conditions	175	1470	0	0	0	0	0	982	73	396	0	182	3278
Pending Project Trips													
Total Pending Trips	6	1373	0	0	0	0	0	1071	33	46	0	5	2534
Cumulative Conditions	181	2843	0	0	0	0	0	2053	106	442	0	187	5812
Project Trips													
Existing Conditions	1	25	0	0	0	0	0	15	3	5	0	2	51
Background and Cumulative Conditions	0	36	0	0	0	0	0	21	4	7	0	0	68
Existing + Project	85	977	0	0	0	0	0	635	71	213	0	86	2067
Background + Project	175	1506	0	0	0	0	0	1003	77	403	0	182	3346
Cumulative + Project	181	2879	0	0	0	0	0	2074	110	449	0	187	5880

Intersection Number: 5
Intersection Name: SR 25 & Hillcrest Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

Scenario:		North Approach RT	North Approach TH	North Approach LT	East Approach RT	East Approach TH	East Approach LT	South Approach RT	South Approach TH	South Approach LT	West Approach RT	West Approach TH	West Approach LT	*Total*
Existing Conditions		84	812	256	128	212	60	124	472	72	140	272	84	2716
Approved Project Trips														
	Total Approved Trips	0	393	53	32	78	63	90	260	121	167	116	0	1373
Background Conditions		84	1205	309	160	290	123	214	732	193	307	388	84	4089
Pending Project Trips														
	Total Pending Trips	93	1386	226	169	22	15	12	990	43	49	30	155	3190
Cumulative Conditions		177	2591	535	329	312	138	226	1722	236	356	418	239	7279
Project Trips														
Existing Conditions		0	21	8	5	2	1	2	12	3	4	3	0	61
Background and Cumulative Conditions		0	31	4	3	1	0	0	18	3	6	1	0	67
Existing + Project		84	833	264	133	214	61	126	484	75	144	275	84	2777
Background + Project		84	1236	313	163	291	123	214	750	196	313	389	84	4156
Cumulative + Project		177	2622	539	332	313	138	226	1740	239	362	419	239	7346

Intersection Number: 6
Intersection Name: SR 25 & Meridian Street
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

Scenario:		North Approach RT	North Approach TH	North Approach LT	East Approach RT	East Approach TH	East Approach LT	South Approach RT	South Approach TH	South Approach LT	West Approach RT	West Approach TH	West Approach LT	*Total*
Existing Conditions		36	872	136	100	136	40	44	544	176	176	228	52	2540
Approved Project Trips														
	Total Approved Trips	0	327	1	1	28	0	0	196	96	120	21	0	790
Background Conditions		36	1199	137	101	164	40	44	740	272	296	249	52	3330
Pending Project Trips														
	Total Pending Trips	3	1533	87	92	46	37	49	1233	130	134	42	5	3391
Cumulative Conditions		39	2732	224	193	210	77	93	1973	402	430	291	57	6721
Project Trips														
Existing Conditions		0	28	0	0	0	0	0	17	0	0	0	0	45
Background and Cumulative Conditions		0	35	0	0	0	0	0	20	0	0	0	0	55
Existing + Project		36	900	136	100	136	40	44	561	176	176	228	52	2585
Background + Project		36	1234	137	101	164	40	44	760	272	296	249	52	3385
Cumulative + Project		39	2767	224	193	210	77	93	1993	402	430	291	57	6776

Intersection Number: 7
Intersection Name: SR 25 & Santa Ana Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	32	892	100	28	180	60	88	340	164	168	120	8	2180
Approved Project Trips													
Total Approved Trips	0	295	27	14	10	24	22	170	5	8	13	0	588
Background Conditions	32	1187	127	42	190	84	110	510	169	176	133	8	2768
Pending Project Trips													
Total Pending Trips	0	1474	29	16	65	27	25	1177	128	122	132	0	3195
Cumulative Conditions	32	2661	156	58	255	111	135	1687	297	298	265	8	5963
Project Trips													
Existing Conditions	0	27	7	4	0	0	0	16	1	2	1	0	58
Background and Cumulative Conditions	0	33	4	2	0	0	0	19	1	2	0	0	61
Existing + Project	32	919	107	32	180	60	88	356	165	170	121	8	2238
Background + Project	32	1220	131	44	190	84	110	529	170	178	133	8	2829
Cumulative + Project	32	2694	160	60	255	111	135	1706	298	300	265	8	6024

Intersection Number: 8
Intersection Name: San Felipe Road & SR 25
Peak Hour: PM
Count Date: 11/06/18
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	12	652	276	136	188	20	44	316	284	420	556	12	2916
Approved Project Trips													
Total Approved Trips	0	72	70	19	140	25	25	26	31	55	228	0	691
Background Conditions	12	724	346	155	328	45	69	342	315	475	784	12	3607
Pending Project Trips													
Total Pending Trips	0	631	533	170	1025	0	0	165	382	485	937	0	4328
Cumulative Conditions	12	1355	879	325	1353	45	69	507	697	960	1721	12	7935
Project Trips													
Existing Conditions	0	0	4	2	18	0	0	0	0	0	30	0	54
Background and Cumulative Conditions	0	0	5	3	19	0	0	0	0	0	33	0	60
Existing + Project	12	652	280	138	206	20	44	316	284	420	586	12	2970
Background + Project	12	724	351	158	347	45	69	342	315	475	817	12	3667
Cumulative + Project	12	1355	884	328	1372	45	69	507	697	960	1754	12	7995

Intersection Number: 9
Intersection Name: Fairview Road & Union Road
Peak Hour: PM
Count Date: n/a
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	191	0	0	0	0	0	193	0	0	0	0	384
Approved Project Trips													
Total Approved Trips	203	111	0	0	0	0	0	78	44	46	0	141	623
Background Conditions	203	302	0	0	0	0	0	271	44	46	0	141	1007
Pending Project Trips													
Total Pending Trips	4	99	0	0	0	0	0	70	0	0	0	5	178
Cumulative Conditions	207	401	0	0	0	0	0	341	44	46	0	146	1185
Project Trips													
Existing Conditions	0	59	0	0	0	0	0	34	0	0	0	0	93
Background and Cumulative Conditions	0	38	0	0	0	0	0	22	24	41	0	0	125
Existing + Project	0	250	0	0	0	0	0	227	0	0	0	0	477
Background + Project	203	340	0	0	0	0	0	293	68	87	0	141	1132
Cumulative + Project	207	439	0	0	0	0	0	363	68	87	0	146	1310

Intersection Number: 10
Intersection Name: Fairview Road & Sunnyslope Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	191	207	58	25	38	6	12	133	36	49	32	100	887
Approved Project Trips													
Total Approved Trips	51	231	83	58	171	26	37	156	39	63	245	55	1215
Background Conditions	242	438	141	83	209	32	49	289	75	112	277	155	2102
Pending Project Trips													
Total Pending Trips	1	115	0	0	0	0	0	72	9	7	0	1	205
Cumulative Conditions	243	553	141	83	209	32	49	361	84	119	277	156	2307
Project Trips													
Existing Conditions	0	40	0	0	0	0	0	24	11	19	0	0	94
Background and Cumulative Conditions	0	27	0	0	0	0	0	16	6	11	0	0	60
Existing + Project	191	247	58	25	38	6	12	157	47	68	32	100	981
Background + Project	242	465	141	83	209	32	49	305	81	123	277	155	2162
Cumulative + Project	243	580	141	83	209	32	49	377	90	130	277	156	2367

Intersection Number: 11
Intersection Name: Fairview Road & Hillcrest Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

Scenario:		North Approach RT	North Approach TH	North Approach LT	East Approach RT	East Approach TH	East Approach LT	South Approach RT	South Approach TH	South Approach LT	West Approach RT	West Approach TH	West Approach LT	*Total*
Existing Conditions		129	399	0	0	0	0	0	218	42	60	0	57	905
Approved Project Trips														
	Total Approved Trips	1	233	103	72	144	55	79	142	48	77	206	0	1160
Background Conditions		130	632	103	72	144	55	79	360	90	137	206	57	2065
Pending Project Trips														
	Total Pending Trips	6	102	0	0	0	0	0	54	20	14	0	3	199
Cumulative Conditions		136	734	103	72	144	55	79	414	110	151	206	60	2264
Project Trips														
Existing Conditions		0	26	0	0	0	0	0	15	8	14	0	0	63
Background and Cumulative Conditions		0	20	0	0	0	0	0	12	5	8	0	0	45
Existing + Project		129	425	0	0	0	0	0	233	50	74	0	57	968
Background + Project		130	652	103	72	144	55	79	372	95	145	206	57	2110
Cumulative + Project		136	754	103	72	144	55	79	426	115	159	206	60	2309

Intersection Number: 12
Intersection Name: Fairview Road & Santa Ana Road
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

Scenario:		North Approach RT	North Approach TH	North Approach LT	East Approach RT	East Approach TH	East Approach LT	South Approach RT	South Approach TH	South Approach LT	West Approach RT	West Approach TH	West Approach LT	*Total*
Existing Conditions		94	443	0	0	0	0	0	205	67	70	0	88	967
Approved Project Trips														
	Total Approved Trips	0	255	0	0	0	0	0	160	31	48	0	0	494
Background Conditions		94	698	0	0	0	0	0	365	98	118	0	88	1461
Pending Project Trips														
	Total Pending Trips	23	148	0	0	0	0	0	51	34	32	0	19	307
Cumulative Conditions		117	846	0	0	0	0	0	416	132	150	0	107	1768
Project Trips														
Existing Conditions		0	18	0	0	0	0	0	11	5	8	0	0	42
Background and Cumulative Conditions		0	15	0	0	0	0	0	9	3	4	0	0	31
Existing + Project		94	461	0	0	0	0	0	216	72	78	0	88	1009
Background + Project		94	713	0	0	0	0	0	374	101	122	0	88	1492
Cumulative + Project		117	861	0	0	0	0	0	425	135	154	0	107	1799

Intersection Number:	13												
Intersection Name:	Fairview Road		& Old Ranch Road										
Peak Hour:	PM										Date of Analysis: 02/11/22		
Count Date:	n/a												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	191	0	0	0	0	0	193	0	0	0	0	384
Approved Project Trips													
Total Approved Trips	0	85	0	0	0	0	0	116	0	0	0	0	201
Background Conditions	0	276	0	0	0	0	0	309	0	0	0	0	585
Pending Project Trips													
Total Pending Trips	0	99	0	0	0	0	0	70	0	0	0	0	169
Cumulative Conditions	0	375	0	0	0	0	0	379	0	0	0	0	754
Project Trips													
Existing Conditions	0	0	59	34	0	25	42	0	0	0	0	0	160
Background and Cumulative Conditions	0	0	79	46	0	13	22	0	0	0	0	0	160
Existing + Project	0	191	59	34	0	25	42	193	0	0	0	0	544
Background + Project	0	276	79	46	0	13	22	309	0	0	0	0	745
Cumulative + Project	0	375	79	46	0	13	22	379	0	0	0	0	914

Intersection Number:	14												
Intersection Name:	Fairview Road/Ridgem &		Airline Highway										
Peak Hour:	PM										Date of Analysis: 02/11/22		
Count Date:	05/22/19												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	56	72	80	84	168	0	12	40	104	200	148	88	1052
Approved Project Trips													
Total Approved Trips	35	9	41	62	69	0	0	13	5	7	60	41	342
Background Conditions	91	81	121	146	237	0	12	53	109	207	208	129	1394
Pending Project Trips													
Total Pending Trips	2	44	53	50	597	0	0	19	115	149	764	1	1794
Cumulative Conditions	93	125	174	196	834	0	12	72	224	356	972	130	3188
Project Trips													
Existing Conditions	22	0	2	4	0	0	0	0	0	0	0	38	66
Background and Cumulative Conditions	10	0	2	4	0	0	0	0	0	0	0	18	34
Existing + Project	78	72	82	88	168	0	12	40	104	200	148	126	1118
Background + Project	101	81	123	150	237	0	12	53	109	207	208	147	1428
Cumulative + Project	103	125	176	200	834	0	12	72	224	356	972	148	3222

Intersection Number: 15
Intersection Name: Enterprise Road & Airline Highway
Peak Hour: PM
Count Date: 05/22/19
Date of Analysis: 02/11/22

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	36	4	16	32	284	28	20	4	32	52	440	56	1004
Approved Project Trips													
Total Approved Trips	64	0	2	3	93	13	7	0	2	1	100	110	395
Background Conditions	100	4	18	35	377	41	27	4	34	53	540	166	1399
Pending Project Trips													
Total Pending Trips	0	0	0	0	714	0	0	0	0	0	913	0	1627
Cumulative Conditions	100	4	18	35	1091	41	27	4	34	53	1453	166	3026
Project Trips													
Existing Conditions	0	0	0	0	22	0	0	0	0	0	38	0	60
Background and Cumulative Conditions	0	0	0	0	10	0	0	0	0	0	18	0	28
Existing + Project	36	4	16	32	306	28	20	4	32	52	478	56	1064
Background + Project	100	4	18	35	387	41	27	4	34	53	558	166	1427
Cumulative + Project	100	4	18	35	1101	41	27	4	34	53	1471	166	3054

Appendix B

Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	176	124	32	296	252	152	296	60	72	132	116
Future Volume (veh/h)	172	176	124	32	296	252	152	296	60	72	132	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	172	176	124	32	296	252	152	296	15	72	132	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	337	193	136	595	312	265	185	418	354	92	155	136
Arrive On Green	0.20	0.20	0.20	0.34	0.34	0.34	0.10	0.23	0.23	0.05	0.17	0.17
Sat Flow, veh/h	1697	973	685	1767	926	788	1767	1856	1572	1739	896	788
Grp Volume(v), veh/h	172	0	300	32	0	548	152	296	15	72	0	248
Grp Sat Flow(s),veh/h/ln	1697	0	1658	1767	0	1714	1767	1856	1572	1739	0	1684
Q Serve(g_s), s	7.7	0.0	15.1	1.0	0.0	26.7	7.2	12.6	0.6	3.5	0.0	12.2
Cycle Q Clear(g_c), s	7.7	0.0	15.1	1.0	0.0	26.7	7.2	12.6	0.6	3.5	0.0	12.2
Prop In Lane	1.00		0.41	1.00		0.46	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	337	0	329	595	0	577	185	418	354	92	0	291
V/C Ratio(X)	0.51	0.00	0.91	0.05	0.00	0.95	0.82	0.71	0.04	0.79	0.00	0.85
Avail Cap(c_a), veh/h	337	0	329	599	0	581	186	499	423	102	0	374
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	33.5	19.2	0.0	27.7	37.5	30.6	25.9	40.1	0.0	34.3
Incr Delay (d2), s/veh	1.3	0.0	28.2	0.0	0.0	25.3	24.5	3.7	0.0	29.9	0.0	13.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	8.5	0.4	0.0	14.4	4.3	5.9	0.2	2.2	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	0.0	61.8	19.2	0.0	53.0	62.0	34.3	26.0	70.0	0.0	48.2
LnGrp LOS	C	A	E	B	A	D	E	C	C	E	A	D
Approach Vol, veh/h		472			580			463			320	
Approach Delay, s/veh		50.9			51.1			43.1			53.1	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	23.3		21.0	13.0	18.8		32.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	23.0		17.0	9.0	19.0		29.0				
Max Q Clear Time (g_c+I1), s	5.5	14.6		17.1	9.2	14.2		28.7				
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	0.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			49.4									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	112	12	32	72	316	28	656	52	116	244	32
Future Volume (veh/h)	52	112	12	32	72	316	28	656	52	116	244	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	52	112	3	32	72	91	28	656	52	116	244	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	388	287	243	371	291	247	30	1184	94	146	1473	657
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.36	0.36	0.08	0.42	0.42
Sat Flow, veh/h	1204	1841	1560	1277	1870	1585	1767	3309	262	1739	3469	1547
Grp Volume(v), veh/h	52	112	3	32	72	91	28	349	359	116	244	16
Grp Sat Flow(s),veh/h/ln	1204	1841	1560	1277	1870	1585	1767	1763	1808	1739	1735	1547
Q Serve(g_s), s	1.2	1.6	0.0	0.7	1.0	1.5	0.5	4.7	4.7	2.0	1.3	0.2
Cycle Q Clear(g_c), s	2.2	1.6	0.0	2.3	1.0	1.5	0.5	4.7	4.7	2.0	1.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	388	287	243	371	291	247	30	630	647	146	1473	657
V/C Ratio(X)	0.13	0.39	0.01	0.09	0.25	0.37	0.92	0.55	0.55	0.79	0.17	0.02
Avail Cap(c_a), veh/h	887	1050	889	900	1066	904	178	1301	1334	525	3258	1453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	11.3	10.6	12.4	11.0	11.3	14.6	7.7	7.7	13.4	5.3	5.0
Incr Delay (d2), s/veh	0.2	0.9	0.0	0.1	0.4	0.9	57.7	0.8	0.7	9.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.0	0.2	0.3	0.5	0.6	1.2	1.2	1.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	12.2	10.7	12.5	11.5	12.2	72.3	8.4	8.4	22.7	5.4	5.0
LnGrp LOS	B	B	B	B	B	B	E	A	A	C	A	A
Approach Vol, veh/h		167			195			736			376	
Approach Delay, s/veh		12.1			12.0			10.9			10.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	14.7		8.6	4.5	16.7		8.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	22.0		17.0	3.0	28.0		17.0				
Max Q Clear Time (g_c+I1), s	4.0	6.7		4.2	2.5	3.3		4.3				
Green Ext Time (p_c), s	0.1	4.0		0.6	0.0	1.6		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			11.1									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	240	156	176	536	236	228	516	44	192	432	188
Future Volume (veh/h)	260	240	156	176	536	236	228	516	44	192	432	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	260	240	38	176	536	62	228	516	44	192	432	37
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	422	854	381	234	887	395	376	987	83	325	972	302
Arrive On Green	0.12	0.24	0.24	0.13	0.25	0.25	0.11	0.21	0.21	0.10	0.19	0.19
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4759	402	3401	5025	1560
Grp Volume(v), veh/h	260	240	38	176	536	62	228	365	195	192	432	37
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1783	1700	1675	1560
Q Serve(g_s), s	3.5	2.7	0.9	4.7	6.6	1.5	3.1	4.7	4.8	2.7	3.7	1.0
Cycle Q Clear(g_c), s	3.5	2.7	0.9	4.7	6.6	1.5	3.1	4.7	4.8	2.7	3.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	422	854	381	234	887	395	376	701	370	325	972	302
V/C Ratio(X)	0.62	0.28	0.10	0.75	0.60	0.16	0.61	0.52	0.53	0.59	0.44	0.12
Avail Cap(c_a), veh/h	1195	1517	677	869	2023	902	1046	1717	906	968	2452	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	15.2	14.5	20.6	16.3	14.4	20.9	17.3	17.3	21.3	17.5	16.4
Incr Delay (d2), s/veh	1.5	0.2	0.1	4.8	0.7	0.2	1.6	0.6	1.2	1.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.0	0.3	2.1	2.4	0.5	1.2	1.7	1.9	1.0	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	15.4	14.7	25.4	17.0	14.6	22.5	17.9	18.5	23.0	17.8	16.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		538			774			788			661	
Approach Delay, s/veh		18.5			18.7			19.4			19.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	14.2	10.5	15.8	9.4	13.5	10.0	16.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	25.0	24.0	21.0	15.0	24.0	17.0	28.0
Max Q Clear Time (g_c+I1), s	4.7	6.8	6.7	4.7	5.1	5.7	5.5	8.6
Green Ext Time (p_c), s	0.4	3.4	0.4	1.4	0.5	2.9	0.7	3.7

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	300	192	828	572	108
Future Volume (veh/h)	108	300	192	828	572	108
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	108	96	192	828	572	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	211	187	370	2994	1430	265
Arrive On Green	0.12	0.12	0.11	0.59	0.34	0.34
Sat Flow, veh/h	1753	1560	3428	5233	4389	784
Grp Volume(v), veh/h	108	96	192	828	448	232
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1685
Q Serve(g_s), s	1.6	1.6	1.5	2.2	2.9	2.9
Cycle Q Clear(g_c), s	1.6	1.6	1.5	2.2	2.9	2.9
Prop In Lane	1.00	1.00	1.00			0.47
Lane Grp Cap(c), veh/h	211	187	370	2994	1125	570
V/C Ratio(X)	0.51	0.51	0.52	0.28	0.40	0.41
Avail Cap(c_a), veh/h	1899	1690	1609	7683	3000	1521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	11.4	11.7	2.8	7.0	7.0
Incr Delay (d2), s/veh	1.9	2.2	1.1	0.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.5	0.5	0.1	0.6	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	13.6	12.8	2.8	7.2	7.5
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	204			1020	680	
Approach Delay, s/veh	13.5			4.7	7.3	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		20.4		7.3	7.0	13.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		42.0		30.0	13.0	25.0
Max Q Clear Time (g_c+I1), s		4.2		3.6	3.5	4.9
Green Ext Time (p_c), s		6.9		0.6	0.4	4.4

Intersection Summary			
HCM 6th Ctrl Delay			6.6
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	116	60	60	252	320	144	1036	44	120	380	40
Future Volume (veh/h)	60	116	60	60	252	320	144	1036	44	120	380	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	60	116	60	60	252	88	144	1036	17	120	380	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	73	399	195	75	329	279	186	1381	616	153	1307	583
Arrive On Green	0.04	0.18	0.18	0.04	0.18	0.18	0.11	0.39	0.39	0.09	0.37	0.37
Sat Flow, veh/h	1739	2259	1103	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	60	87	89	60	252	88	144	1036	17	120	380	14
Grp Sat Flow(s),veh/h/ln	1739	1735	1627	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	1.8	2.3	2.5	1.8	6.8	2.6	4.2	13.4	0.4	3.5	4.0	0.3
Cycle Q Clear(g_c), s	1.8	2.3	2.5	1.8	6.8	2.6	4.2	13.4	0.4	3.5	4.0	0.3
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	306	287	75	329	279	186	1381	616	153	1307	583
V/C Ratio(X)	0.82	0.29	0.31	0.80	0.76	0.32	0.77	0.75	0.03	0.78	0.29	0.02
Avail Cap(c_a), veh/h	132	328	308	202	424	360	368	1734	773	232	1455	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	18.9	19.0	25.1	20.7	19.0	23.0	13.9	9.9	23.6	11.6	10.5
Incr Delay (d2), s/veh	19.2	0.5	0.6	17.7	6.1	0.6	6.7	1.4	0.0	9.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.9	0.9	1.1	3.2	0.9	2.0	4.7	0.1	1.8	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	19.4	19.6	42.9	26.8	19.6	29.7	15.3	9.9	33.0	11.8	10.5
LnGrp LOS	D	B	B	D	C	B	C	B	A	C	B	B
Approach Vol, veh/h		236			400			1197			514	
Approach Delay, s/veh		25.8			27.7			16.9			16.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	24.7	6.2	13.3	9.6	23.8	6.2	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	26.0	6.0	10.0	11.0	22.0	4.0	12.0
Max Q Clear Time (g_c+I1), s	5.5	15.4	3.8	4.5	6.2	6.0	3.8	8.8
Green Ext Time (p_c), s	0.0	5.3	0.0	0.4	0.1	2.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	284	128	204	352	164	112	916	56	60	428	8
Future Volume (veh/h)	40	284	128	204	352	164	112	916	56	60	428	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	40	284	128	204	352	164	112	916	56	60	428	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	358	899	395	409	900	412	193	1252	77	74	1245	23
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.06	0.37	0.37	0.04	0.36	0.36
Sat Flow, veh/h	878	2383	1047	982	2387	1093	3401	3348	205	1725	3455	65
Grp Volume(v), veh/h	40	208	204	204	263	253	112	478	494	60	213	223
Grp Sat Flow(s),veh/h/ln	878	1763	1667	982	1791	1688	1700	1749	1804	1725	1721	1799
Q Serve(g_s), s	2.0	4.9	5.1	10.9	6.2	6.4	1.9	13.8	13.8	2.0	5.3	5.3
Cycle Q Clear(g_c), s	8.5	4.9	5.1	15.9	6.2	6.4	1.9	13.8	13.8	2.0	5.3	5.3
Prop In Lane	1.00		0.63	1.00		0.65	1.00		0.11	1.00		0.04
Lane Grp Cap(c), veh/h	358	665	629	409	676	637	193	654	675	74	620	648
V/C Ratio(X)	0.11	0.31	0.32	0.50	0.39	0.40	0.58	0.73	0.73	0.81	0.34	0.34
Avail Cap(c_a), veh/h	569	1088	1029	644	1105	1042	408	989	1020	266	1032	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	12.8	12.9	18.5	13.3	13.3	26.8	15.7	15.7	27.7	13.6	13.6
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.9	0.4	0.4	2.8	1.6	1.6	18.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	1.7	2.3	2.3	2.2	0.8	5.1	5.2	1.2	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	13.1	13.2	19.5	13.6	13.7	29.6	17.3	17.3	45.7	13.9	13.9
LnGrp LOS	B	B	B	B	B	B	C	B	B	D	B	B
Approach Vol, veh/h		452			720			1084			496	
Approach Delay, s/veh		13.4			15.3			18.6			17.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	25.8		26.0	7.3	25.0		26.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	33.0		36.0	7.0	35.0		36.0
Max Q Clear Time (g_c+I1), s	4.0	15.8		10.5	3.9	7.3		17.9
Green Ext Time (p_c), s	0.0	6.1		2.8	0.1	2.7		4.1

Intersection Summary			
HCM 6th Ctrl Delay			16.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	212	88	104	236	148	160	960	208	36	284	4
Future Volume (veh/h)	32	212	88	104	236	148	160	960	208	36	284	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	212	88	104	236	41	160	960	208	36	284	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	339	370	154	290	560	475	208	1360	294	42	1293	18
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.12	0.47	0.47	0.02	0.38	0.38
Sat Flow, veh/h	1093	1245	517	1088	1885	1598	1767	2882	624	1697	3417	48
Grp Volume(v), veh/h	32	0	300	104	236	41	160	587	581	36	140	148
Grp Sat Flow(s),veh/h/ln	1093	0	1762	1088	1885	1598	1767	1763	1743	1697	1692	1773
Q Serve(g_s), s	1.4	0.0	8.4	5.2	5.8	1.1	5.1	15.3	15.4	1.2	3.3	3.3
Cycle Q Clear(g_c), s	7.3	0.0	8.4	13.6	5.8	1.1	5.1	15.3	15.4	1.2	3.3	3.3
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.36	1.00		0.03
Lane Grp Cap(c), veh/h	339	0	524	290	560	475	208	831	822	42	641	671
V/C Ratio(X)	0.09	0.00	0.57	0.36	0.42	0.09	0.77	0.71	0.71	0.86	0.22	0.22
Avail Cap(c_a), veh/h	597	0	940	547	1006	852	547	1547	1530	175	1136	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	17.3	23.0	16.4	14.7	24.9	12.2	12.2	28.2	12.2	12.2
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.7	0.5	0.1	5.9	1.1	1.1	37.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.2	1.3	2.4	0.4	2.3	5.2	5.2	0.9	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	18.3	23.8	16.9	14.8	30.8	13.3	13.3	65.2	12.4	12.4
LnGrp LOS	B	A	B	C	B	B	C	B	B	E	B	B
Approach Vol, veh/h		332			381			1328			324	
Approach Delay, s/veh		18.4			18.6			15.4			18.3	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	31.4		21.3	10.8	26.0		21.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	51.0		31.0	18.0	39.0		31.0				
Max Q Clear Time (g_c+I1), s	3.2	17.4		10.4	7.1	5.3		15.6				
Green Ext Time (p_c), s	0.0	10.0		1.9	0.3	1.8		1.7				

Intersection Summary			
HCM 6th Ctrl Delay			16.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	184	164	20	396	432	284	604	12	100	348	4
Future Volume (veh/h)	16	184	164	20	396	432	284	604	12	100	348	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	184	42	20	396	113	284	604	12	100	348	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	16	751	335	22	804	631	494	1063	21	187	745	9
Arrive On Green	0.01	0.22	0.22	0.01	0.23	0.23	0.14	0.30	0.30	0.06	0.21	0.21
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3535	70	3374	3513	40
Grp Volume(v), veh/h	16	184	42	20	396	113	284	301	315	100	172	180
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1843	1687	1735	1819
Q Serve(g_s), s	0.4	1.8	0.9	0.4	3.8	1.3	3.0	5.6	5.7	1.1	3.4	3.4
Cycle Q Clear(g_c), s	0.4	1.8	0.9	0.4	3.8	1.3	3.0	5.6	5.7	1.1	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.02
Lane Grp Cap(c), veh/h	16	751	335	22	804	631	494	530	554	187	368	386
V/C Ratio(X)	0.98	0.25	0.13	0.92	0.49	0.18	0.58	0.57	0.57	0.53	0.47	0.47
Avail Cap(c_a), veh/h	215	2054	916	409	2537	1992	1923	1798	1880	946	1283	1345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	12.5	12.2	19.3	13.2	12.2	15.7	11.6	11.6	18.0	13.5	13.5
Incr Delay (d2), s/veh	98.6	0.2	0.2	69.6	0.5	0.1	1.1	1.0	0.9	2.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.3	0.6	1.3	0.3	1.1	1.9	1.9	0.4	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	118.0	12.7	12.3	89.0	13.7	12.4	16.7	12.5	12.5	20.4	14.4	14.4
LnGrp LOS	F	B	B	F	B	B	B	B	B	C	B	B
Approach Vol, veh/h		242			529			900			452	
Approach Delay, s/veh		19.6			16.2			13.8			15.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	15.8	4.5	12.8	9.6	12.3	4.4	12.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	40.0	9.0	24.0	22.0	29.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	3.1	7.7	2.4	3.8	5.0	5.4	2.4	5.8
Green Ext Time (p_c), s	0.1	4.1	0.0	1.2	0.9	2.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	248	155	0
Future Volume (veh/h)	0	0	0	248	155	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00			1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			0	1811	1811	0
Adj Flow Rate, veh/h			0	248	155	0
Peak Hour Factor			1.00	1.00	1.00	1.00
Percent Heavy Veh, %			0	6	6	0
Cap, veh/h			0	1449	1449	0
Arrive On Green			0.00	0.80	0.80	0.00
Sat Flow, veh/h			0	1811	1811	0
Grp Volume(v), veh/h			0	248	155	0
Grp Sat Flow(s),veh/h/ln			0	1811	1811	0
Q Serve(g_s), s			0.0	0.7	0.4	0.0
Cycle Q Clear(g_c), s			0.0	0.7	0.4	0.0
Prop In Lane			0.00			0.00
Lane Grp Cap(c), veh/h			0	1449	1449	0
V/C Ratio(X)			0.00	0.17	0.11	0.00
Avail Cap(c_a), veh/h			0	1449	1449	0
HCM Platoon Ratio			1.00	1.00	1.00	1.00
Upstream Filter(I)			0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh			0.0	0.5	0.5	0.0
Incr Delay (d2), s/veh			0.0	0.3	0.1	0.0
Initial Q Delay(d3),s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.0	0.8	0.6	0.0
LnGrp LOS			A	A	A	A
Approach Vol, veh/h				248	155	
Approach Delay, s/veh				0.8	0.6	
Approach LOS				A	A	

Timer - Assigned Phs		2				6
Phs Duration (G+Y+Rc), s		22.5				22.5
Change Period (Y+Rc), s		4.5				4.5
Max Green Setting (Gmax), s		18.0				18.0
Max Q Clear Time (g_c+I1), s		2.7				2.4
Green Ext Time (p_c), s		1.2				0.7

Intersection Summary		
HCM 6th Ctrl Delay		0.7
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	29	33	7	47	45	33	261	5	39	130	180
Future Volume (veh/h)	192	29	33	7	47	45	33	261	5	39	130	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	192	29	10	7	47	4	33	261	1	39	130	43
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	258	361	306	7	94	80	36	426	361	43	433	367
Arrive On Green	0.14	0.19	0.19	0.00	0.05	0.05	0.02	0.24	0.24	0.02	0.24	0.24
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	192	29	10	7	47	4	33	261	1	39	130	43
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	3.0	0.4	0.1	0.1	0.7	0.1	0.6	3.8	0.0	0.7	1.7	0.6
Cycle Q Clear(g_c), s	3.0	0.4	0.1	0.1	0.7	0.1	0.6	3.8	0.0	0.7	1.7	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	361	306	7	94	80	36	426	361	43	433	367
V/C Ratio(X)	0.74	0.08	0.03	1.00	0.50	0.05	0.93	0.61	0.00	0.91	0.30	0.12
Avail Cap(c_a), veh/h	803	1037	879	120	314	266	294	1298	1100	294	1298	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	9.8	9.7	14.6	13.5	13.2	14.3	10.0	8.6	14.3	9.1	8.7
Incr Delay (d2), s/veh	4.2	0.1	0.0	157.3	4.0	0.3	53.1	1.4	0.0	44.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.1	0.0	0.3	0.3	0.0	0.7	1.2	0.0	0.7	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	9.9	9.7	171.9	17.5	13.5	67.4	11.4	8.6	58.7	9.5	8.9
LnGrp LOS	B	A	A	F	B	B	E	B	A	E	A	A
Approach Vol, veh/h		231			58			295			212	
Approach Delay, s/veh		15.2			35.9			17.7			18.4	
Approach LOS		B			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	10.9	4.1	9.6	4.6	11.0	8.2	5.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	21.0	2.0	16.0	5.0	21.0	13.0	5.0
Max Q Clear Time (g_c+I1), s	2.7	5.8	2.1	2.4	2.6	3.7	5.0	2.7
Green Ext Time (p_c), s	0.0	1.3	0.0	0.1	0.0	0.7	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	109	36	36	464	316	87
Future Vol, veh/h	109	36	36	464	316	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	450	0	275	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	36	36	464	316	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	852	316	403	0	-	0
Stage 1	316	-	-	-	-	-
Stage 2	536	-	-	-	-	-
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	330	724	1156	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	724	1156	-	-	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	587	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1156	-	320	724	-	-
HCM Lane V/C Ratio	0.031	-	0.341	0.05	-	-
HCM Control Delay (s)	8.2	-	22	10.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	0.2	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	90	129	425	304	105
Future Volume (veh/h)	102	90	129	425	304	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	102	15	129	425	304	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	140	124	164	1053	551	467
Arrive On Green	0.08	0.08	0.09	0.57	0.30	0.30
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	102	15	129	425	304	30
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.3	0.2	1.7	2.9	3.2	0.3
Cycle Q Clear(g_c), s	1.3	0.2	1.7	2.9	3.2	0.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	140	124	164	1053	551	467
V/C Ratio(X)	0.73	0.12	0.79	0.40	0.55	0.06
Avail Cap(c_a), veh/h	847	754	917	3290	1974	1673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	9.8	10.2	2.7	6.7	5.7
Incr Delay (d2), s/veh	7.1	0.4	8.0	0.2	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.8	0.1	0.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	10.3	18.2	3.0	7.5	5.7
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	117			554	334	
Approach Delay, s/veh	16.5			6.5	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		17.1		5.8	6.2	11.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		41.0		11.0	12.0	25.0
Max Q Clear Time (g_c+I1), s		4.9		3.3	3.7	5.2
Green Ext Time (p_c), s		2.9		0.2	0.2	1.8
Intersection Summary						
HCM 6th Ctrl Delay			8.0			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	248	0	0	155
Future Vol, veh/h	0	0	248	0	0	155
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	0	0	248	0	0	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	403	248	0	0	248	0
Stage 1	248	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	603	791	-	-	1295	-
Stage 1	793	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	603	791	-	-	1295	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1295	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	160	96	4	172	120	176	112	8	68	24	64
Future Vol, veh/h	104	160	96	4	172	120	176	112	8	68	24	64
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	104	160	96	4	172	120	176	112	8	68	24	64
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	12.2	12.6	13.6	11.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	93%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	7%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	120	104	160	96	4	172	120	68	24	64
LT Vol	176	0	104	0	0	4	0	0	68	0	0
Through Vol	0	112	0	160	0	0	172	0	0	24	0
RT Vol	0	8	0	0	96	0	0	120	0	0	64
Lane Flow Rate	176	120	104	160	96	4	172	120	68	24	64
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.371	0.235	0.22	0.316	0.171	0.009	0.345	0.217	0.154	0.051	0.123
Departure Headway (Hd)	7.592	7.045	7.612	7.106	6.397	7.732	7.226	6.517	8.15	7.646	6.94
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	512	472	506	561	463	499	551	441	468	516
Service Time	5.292	4.745	5.35	4.844	4.135	5.473	4.966	4.257	5.895	5.391	4.685
HCM Lane V/C Ratio	0.369	0.234	0.22	0.316	0.171	0.009	0.345	0.218	0.154	0.051	0.124
HCM Control Delay	14.7	11.9	12.5	13.1	10.5	10.5	13.7	11.1	12.4	10.8	10.7
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	0.9	0.8	1.3	0.6	0	1.5	0.8	0.5	0.2	0.4

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	12	272	8	28	396	16	44	8	40	36	4	48
Future Vol, veh/h	12	272	8	28	396	16	44	8	40	36	4	48
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	12	272	8	28	396	16	44	8	40	36	4	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	280	0	0	782	764	272	776	756	396
Stage 1	-	-	-	-	-	-	296	296	-	452	452	-
Stage 2	-	-	-	-	-	-	486	468	-	324	304	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1120	-	-	1266	-	-	308	330	760	315	337	653
Stage 1	-	-	-	-	-	-	706	663	-	587	570	-
Stage 2	-	-	-	-	-	-	557	556	-	688	663	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	1266	-	-	276	319	760	285	326	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	319	-	285	326	-
Stage 1	-	-	-	-	-	-	698	656	-	581	557	-
Stage 2	-	-	-	-	-	-	501	544	-	637	656	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	15.6	14.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	276	319	760	1120	-	-	1266	-	-	285	326	653
HCM Lane V/C Ratio	0.159	0.025	0.053	0.011	-	-	0.022	-	-	0.126	0.012	0.074
HCM Control Delay (s)	20.5	16.6	10	8.2	-	-	7.9	-	-	19.4	16.2	11
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.6	0.1	0.2	0	-	-	0.1	-	-	0.4	0	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	288	176	28	92	112	124	220	16	168	344	120
Future Volume (veh/h)	172	288	176	28	92	112	124	220	16	168	344	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	172	288	176	28	92	112	124	220	4	168	344	120
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	522	319	195	252	109	132	156	484	410	208	383	134
Arrive On Green	0.29	0.29	0.29	0.14	0.14	0.14	0.09	0.26	0.26	0.12	0.29	0.29
Sat Flow, veh/h	1795	1095	669	1795	774	942	1781	1870	1585	1795	1335	466
Grp Volume(v), veh/h	172	0	464	28	0	204	124	220	4	168	0	464
Grp Sat Flow(s),veh/h/ln	1795	0	1765	1795	0	1716	1781	1870	1585	1795	0	1801
Q Serve(g_s), s	6.2	0.0	20.8	1.1	0.0	9.5	5.6	8.1	0.2	7.5	0.0	20.4
Cycle Q Clear(g_c), s	6.2	0.0	20.8	1.1	0.0	9.5	5.6	8.1	0.2	7.5	0.0	20.4
Prop In Lane	1.00		0.38	1.00		0.55	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	522	0	513	252	0	241	156	484	410	208	0	517
V/C Ratio(X)	0.33	0.00	0.90	0.11	0.00	0.85	0.80	0.45	0.01	0.81	0.00	0.90
Avail Cap(c_a), veh/h	567	0	558	262	0	250	195	484	410	349	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	28.1	30.9	0.0	34.5	36.8	25.6	22.7	35.5	0.0	28.2
Incr Delay (d2), s/veh	0.4	0.0	17.3	0.2	0.0	22.3	16.4	0.7	0.0	7.3	0.0	15.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	10.9	0.5	0.0	5.4	3.1	3.6	0.1	3.6	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	45.4	31.1	0.0	56.8	53.2	26.3	22.7	42.8	0.0	43.5
LnGrp LOS	C	A	D	C	A	E	D	C	C	D	A	D
Approach Vol, veh/h		636			232			348			632	
Approach Delay, s/veh		39.4			53.7			35.8			43.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	25.3		27.9	11.2	27.6		15.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	20.0		26.0	9.0	27.0		12.0				
Max Q Clear Time (g_c+I1), s	9.5	10.1		22.8	7.6	22.4		11.5				
Green Ext Time (p_c), s	0.2	0.8		1.1	0.0	1.2		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			41.9
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	76	36	20	96	224	16	408	36	196	620	72
Future Volume (veh/h)	48	76	36	20	96	224	16	408	36	196	620	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	48	76	5	20	96	32	16	408	36	196	620	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	395	274	232	415	276	234	17	849	75	267	1419	633
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.01	0.26	0.26	0.15	0.40	0.40
Sat Flow, veh/h	1252	1856	1572	1317	1870	1585	1781	3305	290	1795	3582	1598
Grp Volume(v), veh/h	48	76	5	20	96	32	16	219	225	196	620	40
Grp Sat Flow(s),veh/h/ln	1252	1856	1572	1317	1870	1585	1781	1777	1818	1795	1791	1598
Q Serve(g_s), s	1.0	1.0	0.1	0.4	1.2	0.5	0.2	2.8	2.8	2.8	3.4	0.4
Cycle Q Clear(g_c), s	2.2	1.0	0.1	1.3	1.2	0.5	0.2	2.8	2.8	2.8	3.4	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	395	274	232	415	276	234	17	456	467	267	1419	633
V/C Ratio(X)	0.12	0.28	0.02	0.05	0.35	0.14	0.96	0.48	0.48	0.73	0.44	0.06
Avail Cap(c_a), veh/h	910	1037	878	956	1045	886	199	1125	1151	1070	4002	1785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.2	9.8	10.8	10.3	10.0	13.3	8.5	8.5	10.9	5.9	5.0
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.0	0.7	0.3	90.7	0.8	0.8	3.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.0	0.1	0.4	0.1	0.5	0.8	0.8	1.1	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	10.7	9.8	10.8	11.0	10.2	104.0	9.2	9.2	14.8	6.1	5.1
LnGrp LOS	B	B	A	B	B	B	F	A	A	B	A	A
Approach Vol, veh/h		129			148			460			856	
Approach Delay, s/veh		10.9			10.8			12.5			8.1	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	10.9		8.0	4.3	14.6		8.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	17.0		15.0	3.0	30.0		15.0
Max Q Clear Time (g_c+I1), s	4.8	4.8		4.2	2.2	5.4		3.3
Green Ext Time (p_c), s	0.4	2.1		0.3	0.0	4.6		0.4

Intersection Summary			
HCM 6th Ctrl Delay			9.8
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	368	172	144	308	128	204	448	100	236	712	204
Future Volume (veh/h)	192	368	172	144	308	128	204	448	100	236	712	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	192	368	34	144	308	29	204	448	100	236	712	55
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	333	655	292	193	697	311	349	1083	235	396	1386	430
Arrive On Green	0.10	0.18	0.18	0.11	0.19	0.19	0.10	0.26	0.26	0.11	0.27	0.27
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4232	919	3483	5147	1598
Grp Volume(v), veh/h	192	368	34	144	308	29	204	361	187	236	712	55
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1720	1742	1716	1598
Q Serve(g_s), s	2.5	4.4	0.8	3.7	3.6	0.7	2.6	4.1	4.3	3.0	5.5	1.2
Cycle Q Clear(g_c), s	2.5	4.4	0.8	3.7	3.6	0.7	2.6	4.1	4.3	3.0	5.5	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	333	655	292	193	697	311	349	878	440	396	1386	430
V/C Ratio(X)	0.58	0.56	0.12	0.75	0.44	0.09	0.58	0.41	0.43	0.60	0.51	0.13
Avail Cap(c_a), veh/h	1037	1676	747	764	2133	951	1037	1897	951	1185	3065	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	17.5	16.0	20.4	16.7	15.5	20.2	14.6	14.6	19.8	14.6	13.0
Incr Delay (d2), s/veh	1.6	0.8	0.2	5.7	0.4	0.1	1.5	0.3	0.7	1.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.3	1.7	1.3	0.2	1.0	1.4	1.5	1.2	1.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	18.3	16.2	26.0	17.1	15.7	21.8	14.9	15.3	21.2	14.9	13.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		594			481			752			1003	
Approach Delay, s/veh		19.3			19.7			16.8			16.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	16.0	9.1	12.6	8.7	16.7	8.5	13.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0	20.0	22.0	14.0	28.0	14.0	28.0
Max Q Clear Time (g_c+I1), s	5.0	6.3	5.7	6.4	4.6	7.5	4.5	5.6
Green Ext Time (p_c), s	0.6	3.5	0.3	2.2	0.4	5.1	0.4	2.0

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	208	68	620	952	84
Future Volume (veh/h)	84	208	68	620	952	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	84	0	68	620	952	84
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	106	95	132	3342	2241	197
Arrive On Green	0.06	0.00	0.04	0.65	0.47	0.47
Sat Flow, veh/h	1810	1610	3483	5316	4986	424
Grp Volume(v), veh/h	84	0	68	620	678	358
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1809
Q Serve(g_s), s	1.3	0.0	0.5	1.3	3.6	3.6
Cycle Q Clear(g_c), s	1.3	0.0	0.5	1.3	3.6	3.6
Prop In Lane	1.00	1.00	1.00			0.23
Lane Grp Cap(c), veh/h	106	95	132	3342	1597	842
V/C Ratio(X)	0.79	0.00	0.51	0.19	0.42	0.43
Avail Cap(c_a), veh/h	1320	1175	890	6948	3255	1716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	0.0	12.9	1.9	4.9	4.9
Incr Delay (d2), s/veh	12.1	0.0	3.1	0.0	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2	0.0	0.5	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.9	0.0	16.0	1.9	5.1	5.2
LnGrp LOS	C	A	B	A	A	A
Approach Vol, veh/h	84			688	1036	
Approach Delay, s/veh	24.9			3.3	5.1	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.8		5.6	5.0	16.8
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		37.0		20.0	7.0	26.0
Max Q Clear Time (g_c+I1), s		3.3		3.3	2.5	5.6
Green Ext Time (p_c), s		4.8		0.2	0.0	7.1

Intersection Summary			
HCM 6th Ctrl Delay			5.4
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	272	140	60	212	128	72	472	124	256	812	84
Future Volume (veh/h)	84	272	140	60	212	128	72	472	124	256	812	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	84	272	140	60	212	26	72	472	32	256	812	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	108	457	228	74	335	284	91	833	372	332	1308	583
Arrive On Green	0.06	0.20	0.20	0.04	0.18	0.18	0.05	0.23	0.23	0.19	0.37	0.37
Sat Flow, veh/h	1810	2330	1165	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	84	209	203	60	212	26	72	472	32	256	812	33
Grp Sat Flow(s),veh/h/ln	1810	1805	1690	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	2.1	4.9	5.1	1.5	4.8	0.6	1.8	5.4	0.7	6.4	8.7	0.6
Cycle Q Clear(g_c), s	2.1	4.9	5.1	1.5	4.8	0.6	1.8	5.4	0.7	6.4	8.7	0.6
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	354	331	74	335	284	91	833	372	332	1308	583
V/C Ratio(X)	0.78	0.59	0.61	0.81	0.63	0.09	0.79	0.57	0.09	0.77	0.62	0.06
Avail Cap(c_a), veh/h	350	776	727	309	770	652	347	1771	790	881	2826	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	17.0	17.1	22.1	17.7	16.0	21.8	15.8	14.0	18.0	12.0	9.5
Incr Delay (d2), s/veh	11.3	1.6	1.8	18.0	2.0	0.1	14.0	0.6	0.1	3.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.9	1.9	1.0	2.0	0.2	1.1	2.0	0.2	2.6	2.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	18.6	18.9	40.1	19.7	16.1	35.9	16.4	14.1	21.8	12.5	9.5
LnGrp LOS	C	B	B	D	B	B	D	B	B	C	B	A
Approach Vol, veh/h		496			298			576			1101	
Approach Delay, s/veh		21.1			23.5			18.7			14.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	14.8	5.9	13.1	6.4	21.1	6.8	12.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	23.0	8.0	20.0	9.0	37.0	9.0	19.0
Max Q Clear Time (g_c+I1), s	8.4	7.4	3.5	7.1	3.8	10.7	4.1	6.8
Green Ext Time (p_c), s	0.6	2.9	0.0	2.0	0.1	6.4	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	228	176	40	136	100	176	544	44	136	872	36
Future Volume (veh/h)	52	228	176	40	136	100	176	544	44	136	872	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	52	228	176	40	136	100	176	544	44	136	872	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	354	428	316	281	442	303	312	1308	106	181	1414	58
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.09	0.39	0.39	0.10	0.40	0.40
Sat Flow, veh/h	1144	1949	1439	981	2016	1383	3456	3330	269	1795	3505	145
Grp Volume(v), veh/h	52	207	197	40	119	117	176	290	298	136	446	462
Grp Sat Flow(s),veh/h/ln	1144	1777	1611	981	1777	1622	1728	1777	1822	1795	1791	1859
Q Serve(g_s), s	1.7	4.3	4.5	1.6	2.3	2.5	2.0	4.9	5.0	3.1	8.3	8.3
Cycle Q Clear(g_c), s	4.2	4.3	4.5	6.1	2.3	2.5	2.0	4.9	5.0	3.1	8.3	8.3
Prop In Lane	1.00		0.89	1.00		0.85	1.00		0.15	1.00		0.08
Lane Grp Cap(c), veh/h	354	390	353	281	390	356	312	698	716	181	723	750
V/C Ratio(X)	0.15	0.53	0.56	0.14	0.30	0.33	0.56	0.42	0.42	0.75	0.62	0.62
Avail Cap(c_a), veh/h	595	765	693	488	765	698	909	1444	1481	687	1670	1733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	14.4	14.5	17.2	13.7	13.7	18.2	9.2	9.2	18.3	9.9	9.9
Incr Delay (d2), s/veh	0.2	1.1	1.4	0.2	0.4	0.5	1.6	0.4	0.4	6.1	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.6	1.5	0.3	0.8	0.8	0.8	1.5	1.6	1.4	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	15.5	15.9	17.5	14.1	14.3	19.8	9.6	9.6	24.4	10.8	10.7
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	B	B
Approach Vol, veh/h		456			276			764			1044	
Approach Delay, s/veh		15.7			14.7			12.0			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	20.4		13.2	7.8	20.9		13.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	34.0		18.0	11.0	39.0		18.0
Max Q Clear Time (g_c+I1), s	5.1	7.0		6.5	4.0	10.3		8.1
Green Ext Time (p_c), s	0.2	3.8		2.1	0.3	6.6		1.0

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	120	168	60	180	28	164	340	88	100	892	32
Future Volume (veh/h)	8	120	168	60	180	28	164	340	88	100	892	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	120	168	60	180	6	164	340	88	100	892	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	360	185	258	261	493	418	216	1199	306	131	1339	48
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.12	0.43	0.43	0.07	0.38	0.38
Sat Flow, veh/h	1198	705	987	1100	1885	1598	1767	2781	710	1781	3499	126
Grp Volume(v), veh/h	8	0	288	60	180	6	164	214	214	100	453	471
Grp Sat Flow(s),veh/h/ln	1198	0	1693	1100	1885	1598	1767	1763	1728	1781	1777	1848
Q Serve(g_s), s	0.3	0.0	7.8	2.6	4.0	0.1	4.6	4.0	4.1	2.8	10.9	10.9
Cycle Q Clear(g_c), s	4.3	0.0	7.8	10.4	4.0	0.1	4.6	4.0	4.1	2.8	10.9	10.9
Prop In Lane	1.00		0.58	1.00		1.00	1.00		0.41	1.00		0.07
Lane Grp Cap(c), veh/h	360	0	443	261	493	418	216	760	745	131	680	707
V/C Ratio(X)	0.02	0.00	0.65	0.23	0.36	0.01	0.76	0.28	0.29	0.76	0.67	0.67
Avail Cap(c_a), veh/h	676	0	890	552	991	840	654	1613	1581	485	1453	1511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	16.9	21.5	15.5	14.1	21.8	9.5	9.5	23.4	13.1	13.1
Incr Delay (d2), s/veh	0.0	0.0	1.6	0.4	0.5	0.0	5.4	0.2	0.2	8.9	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.9	0.7	1.6	0.0	2.1	1.3	1.3	1.4	3.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	18.5	21.9	15.9	14.1	27.2	9.7	9.7	32.2	14.3	14.2
LnGrp LOS	B	A	B	C	B	B	C	A	A	C	B	B
Approach Vol, veh/h		296			246			592			1024	
Approach Delay, s/veh		18.5			17.4			14.5			16.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	26.2		17.4	10.3	23.7		17.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	47.0		27.0	19.0	42.0		27.0				
Max Q Clear Time (g_c+I1), s	4.8	6.1		9.8	6.6	12.9		12.4				
Green Ext Time (p_c), s	0.1	2.8		1.7	0.3	6.8		1.0				

Intersection Summary		
HCM 6th Ctrl Delay		16.1
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	556	420	20	188	136	284	316	44	276	652	12
Future Volume (veh/h)	12	556	420	20	188	136	284	316	44	276	652	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	556	134	20	188	43	284	316	44	276	652	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	12	896	400	22	967	759	438	890	123	426	991	18
Arrive On Green	0.01	0.27	0.27	0.01	0.27	0.27	0.13	0.29	0.29	0.13	0.28	0.28
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3112	429	3374	3485	64
Grp Volume(v), veh/h	12	556	134	20	188	43	284	178	182	276	324	340
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1778	1687	1735	1814
Q Serve(g_s), s	0.4	7.6	3.7	0.6	2.1	0.6	4.1	4.2	4.2	4.0	8.5	8.5
Cycle Q Clear(g_c), s	0.4	7.6	3.7	0.6	2.1	0.6	4.1	4.2	4.2	4.0	8.5	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.04
Lane Grp Cap(c), veh/h	12	896	400	22	967	759	438	504	509	426	493	516
V/C Ratio(X)	0.98	0.62	0.34	0.90	0.19	0.06	0.65	0.35	0.36	0.65	0.66	0.66
Avail Cap(c_a), veh/h	97	2006	895	172	2261	1775	991	1121	1131	975	1103	1154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	16.7	15.3	25.6	14.5	14.0	21.5	14.7	14.7	21.6	16.3	16.3
Incr Delay (d2), s/veh	114.9	0.7	0.5	64.6	0.1	0.0	1.6	0.4	0.4	1.7	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	1.2	0.6	0.8	0.2	1.6	1.5	1.6	1.6	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.7	17.4	15.8	90.2	14.6	14.0	23.1	15.1	15.2	23.2	17.8	17.8
LnGrp LOS	F	B	B	F	B	B	C	B	B	C	B	B
Approach Vol, veh/h		702			251			644			940	
Approach Delay, s/veh		19.2			20.5			18.7			19.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	18.8	4.6	17.8	10.6	18.8	4.4	18.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	33.0	5.0	31.0	15.0	33.0	3.0	33.0
Max Q Clear Time (g_c+I1), s	6.0	6.2	2.6	9.6	6.1	10.5	2.4	4.1
Green Ext Time (p_c), s	0.6	2.2	0.0	4.3	0.7	4.2	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	193	191	0
Future Volume (veh/h)	0	0	0	193	191	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00			1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			0	1856	1870	0
Adj Flow Rate, veh/h			0	193	191	0
Peak Hour Factor			1.00	1.00	1.00	1.00
Percent Heavy Veh, %			0	3	2	0
Cap, veh/h			0	1484	1496	0
Arrive On Green			0.00	0.80	0.80	0.00
Sat Flow, veh/h			0	1856	1870	0
Grp Volume(v), veh/h			0	193	191	0
Grp Sat Flow(s),veh/h/ln			0	1856	1870	0
Q Serve(g_s), s			0.0	0.5	0.5	0.0
Cycle Q Clear(g_c), s			0.0	0.5	0.5	0.0
Prop In Lane			0.00			0.00
Lane Grp Cap(c), veh/h			0	1484	1496	0
V/C Ratio(X)			0.00	0.13	0.13	0.00
Avail Cap(c_a), veh/h			0	1484	1496	0
HCM Platoon Ratio			1.00	1.00	1.00	1.00
Upstream Filter(I)			0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh			0.0	0.5	0.5	0.0
Incr Delay (d2), s/veh			0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.0	0.7	0.7	0.0
LnGrp LOS			A	A	A	A
Approach Vol, veh/h				193	191	
Approach Delay, s/veh				0.7	0.7	
Approach LOS				A	A	

Timer - Assigned Phs	2	6
Phs Duration (G+Y+Rc), s	22.5	22.5
Change Period (Y+Rc), s	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	2.5
Green Ext Time (p_c), s	0.9	0.9

Intersection Summary	
HCM 6th Ctrl Delay	0.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	32	49	6	38	25	36	133	12	58	207	191
Future Volume (veh/h)	100	32	49	6	38	25	36	133	12	58	207	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	100	32	10	6	38	3	36	133	3	58	207	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	127	215	182	7	89	75	40	382	324	68	414	351
Arrive On Green	0.07	0.11	0.11	0.00	0.05	0.05	0.02	0.21	0.21	0.04	0.22	0.22
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	100	32	10	6	38	3	36	133	3	58	207	60
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	1.4	0.4	0.1	0.1	0.5	0.0	0.5	1.5	0.0	0.8	2.4	0.8
Cycle Q Clear(g_c), s	1.4	0.4	0.1	0.1	0.5	0.0	0.5	1.5	0.0	0.8	2.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	215	182	7	89	75	40	382	324	68	414	351
V/C Ratio(X)	0.79	0.15	0.05	0.83	0.43	0.04	0.91	0.35	0.01	0.86	0.50	0.17
Avail Cap(c_a), veh/h	1146	1504	1275	361	682	578	705	2073	1757	782	2164	1834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	10.0	9.9	12.5	11.6	11.4	12.2	8.5	7.9	12.0	8.5	7.9
Incr Delay (d2), s/veh	10.1	0.3	0.1	108.9	3.2	0.2	46.2	0.5	0.0	24.8	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.0	0.2	0.2	0.0	0.7	0.4	0.0	0.7	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	10.3	10.0	121.4	14.9	11.6	58.4	9.1	7.9	36.8	9.5	8.1
LnGrp LOS	C	B	B	F	B	B	E	A	A	D	A	A
Approach Vol, veh/h		142			47			172			325	
Approach Delay, s/veh		18.2			28.3			19.4			14.1	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	9.2	4.1	6.9	4.6	9.6	5.8	5.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	28.0	5.0	20.0	10.0	29.0	16.0	9.0
Max Q Clear Time (g_c+I1), s	2.8	3.5	2.1	2.4	2.5	4.4	3.4	2.5
Green Ext Time (p_c), s	0.1	0.7	0.0	0.1	0.0	1.4	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	60	42	218	399	129
Future Vol, veh/h	57	60	42	218	399	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	450	0	275	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	2	2
Mvmt Flow	57	60	42	218	399	129

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	701	399	528	0	-	0
Stage 1	399	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	408	655	1029	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	391	655	1029	-	-	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1029	-	391	655	-	-
HCM Lane V/C Ratio	0.041	-	0.146	0.092	-	-
HCM Control Delay (s)	8.6	-	15.8	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.3	-	-

HCM 6th Signalized Intersection Summary
12: Fairview Road & Santa Ana Road

05/10/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	70	67	205	443	94
Future Volume (veh/h)	88	70	67	205	443	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	88	8	67	205	443	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	114	102	77	1100	738	625
Arrive On Green	0.06	0.06	0.04	0.60	0.39	0.39
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	88	8	67	205	443	40
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	1.2	0.1	0.9	1.2	4.5	0.4
Cycle Q Clear(g_c), s	1.2	0.1	0.9	1.2	4.5	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	114	102	77	1100	738	625
V/C Ratio(X)	0.77	0.08	0.87	0.19	0.60	0.06
Avail Cap(c_a), veh/h	668	594	579	3270	2434	2063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.1	10.6	11.4	2.1	5.8	4.6
Incr Delay (d2), s/veh	10.3	0.3	23.4	0.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.7	0.0	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.4	10.9	34.8	2.2	6.6	4.6
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	96			272	483	
Approach Delay, s/veh	20.5			10.2	6.4	
Approach LOS	C			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		18.5		5.5	5.1	13.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	8.0	31.0
Max Q Clear Time (g_c+I1), s		3.2		3.2	2.9	6.5
Green Ext Time (p_c), s		1.3		0.1	0.0	3.0
Intersection Summary						
HCM 6th Ctrl Delay			9.2			
HCM 6th LOS			A			

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	193	0	0	191
Future Vol, veh/h	0	0	193	0	0	191
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	0	193	0	0	191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	193	0	0	193	0
Stage 1	193	-	-	-	-	-
Stage 2	191	-	-	-	-	-
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	619	849	-	-	1380	-
Stage 1	840	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	849	-	-	1380	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1380	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	148	200	0	168	84	104	40	12	80	72	56
Future Vol, veh/h	88	148	200	0	168	84	104	40	12	80	72	56
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	88	148	200	0	168	84	104	40	12	80	72	56
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	11.5	11.9	12	11.1
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	77%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	23%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	52	88	148	200	0	168	84	80	72	56
LT Vol	104	0	88	0	0	0	0	0	80	0	0
Through Vol	0	40	0	148	0	0	168	0	0	72	0
RT Vol	0	12	0	0	200	0	0	84	0	0	56
Lane Flow Rate	104	52	88	148	200	0	168	84	80	72	56
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.222	0.101	0.172	0.268	0.323	0	0.321	0.144	0.169	0.142	0.099
Departure Headway (Hd)	7.696	7.026	7.027	6.522	5.816	6.883	6.883	6.176	7.591	7.085	6.376
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	506	508	548	614	0	519	576	470	503	557
Service Time	5.493	4.822	4.807	4.302	3.595	4.671	4.671	3.963	5.385	4.878	4.169
HCM Lane V/C Ratio	0.224	0.103	0.173	0.27	0.326	0	0.324	0.146	0.17	0.143	0.101
HCM Control Delay	12.7	10.6	11.3	11.7	11.4	9.7	12.9	10	11.9	11.1	9.9
HCM Lane LOS	B	B	B	B	B	N	B	A	B	B	A
HCM 95th-tile Q	0.8	0.3	0.6	1.1	1.4	0	1.4	0.5	0.6	0.5	0.3

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	56	440	52	28	284	32	32	4	20	16	4	36
Future Vol, veh/h	56	440	52	28	284	32	32	4	20	16	4	36
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	56	440	52	28	284	32	32	4	20	16	4	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	492	0	0	928	924	440	930	944	284
Stage 1	-	-	-	-	-	-	552	552	-	340	340	-
Stage 2	-	-	-	-	-	-	376	372	-	590	604	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	1250	-	-	1066	-	-	246	267	613	245	259	748
Stage 1	-	-	-	-	-	-	514	512	-	669	634	-
Stage 2	-	-	-	-	-	-	641	615	-	489	483	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1250	-	-	1066	-	-	219	248	613	222	241	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	248	-	222	241	-
Stage 1	-	-	-	-	-	-	491	489	-	639	618	-
Stage 2	-	-	-	-	-	-	590	599	-	448	461	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	19.2	14.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	219	248	613	1250	-	-	1066	-	-	222	241	748
HCM Lane V/C Ratio	0.146	0.016	0.033	0.045	-	-	0.026	-	-	0.072	0.017	0.048
HCM Control Delay (s)	24.2	19.8	11.1	8	-	-	8.5	-	-	22.5	20.2	10.1
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.5	0	0.1	0.1	-	-	0.1	-	-	0.2	0.1	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	176	129	33	296	252	165	314	62	72	138	116
Future Volume (veh/h)	172	176	129	33	296	252	165	314	62	72	138	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	172	176	129	33	296	252	165	314	17	72	138	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	318	179	131	595	312	265	199	449	380	81	161	136
Arrive On Green	0.19	0.19	0.19	0.34	0.34	0.34	0.11	0.24	0.24	0.05	0.18	0.18
Sat Flow, veh/h	1697	955	700	1767	926	788	1767	1856	1572	1739	917	771
Grp Volume(v), veh/h	172	0	305	33	0	548	165	314	17	72	0	254
Grp Sat Flow(s),veh/h/ln	1697	0	1655	1767	0	1714	1767	1856	1572	1739	0	1687
Q Serve(g_s), s	7.8	0.0	15.7	1.1	0.0	26.6	7.8	13.2	0.7	3.5	0.0	12.5
Cycle Q Clear(g_c), s	7.8	0.0	15.7	1.1	0.0	26.6	7.8	13.2	0.7	3.5	0.0	12.5
Prop In Lane	1.00		0.42	1.00		0.46	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	318	0	310	595	0	577	199	449	380	81	0	297
V/C Ratio(X)	0.54	0.00	0.98	0.06	0.00	0.95	0.83	0.70	0.04	0.88	0.00	0.85
Avail Cap(c_a), veh/h	318	0	310	600	0	581	207	543	460	81	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	34.6	19.1	0.0	27.6	37.1	29.6	24.8	40.5	0.0	34.1
Incr Delay (d2), s/veh	1.9	0.0	46.6	0.0	0.0	25.2	23.1	3.1	0.0	62.9	0.0	14.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	10.1	0.4	0.0	14.4	4.6	6.1	0.3	2.9	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	81.3	19.2	0.0	52.8	60.2	32.7	24.9	103.4	0.0	48.6
LnGrp LOS	C	A	F	B	A	D	E	C	C	F	A	D
Approach Vol, veh/h		477			581			496			326	
Approach Delay, s/veh		64.0			50.9			41.6			60.7	
Approach LOS		E			D			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	24.7		20.0	13.6	19.1		32.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	25.0		16.0	10.0	19.0		29.0				
Max Q Clear Time (g_c+I1), s	5.5	15.2		17.7	9.8	14.5		28.6				
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	0.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			53.5									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	112	13	32	72	316	31	671	52	116	249	33
Future Volume (veh/h)	52	112	13	32	72	316	31	671	52	116	249	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	52	112	4	32	72	91	31	671	52	116	249	17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	386	286	242	368	291	246	34	1199	93	146	1480	660
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.36	0.36	0.08	0.43	0.43
Sat Flow, veh/h	1204	1841	1560	1276	1870	1585	1767	3315	257	1739	3469	1547
Grp Volume(v), veh/h	52	112	4	32	72	91	31	356	367	116	249	17
Grp Sat Flow(s),veh/h/ln	1204	1841	1560	1276	1870	1585	1767	1763	1809	1739	1735	1547
Q Serve(g_s), s	1.2	1.6	0.1	0.7	1.0	1.5	0.5	4.9	4.9	2.0	1.3	0.2
Cycle Q Clear(g_c), s	2.2	1.6	0.1	2.3	1.0	1.5	0.5	4.9	4.9	2.0	1.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	386	286	242	368	291	246	34	638	655	146	1480	660
V/C Ratio(X)	0.13	0.39	0.02	0.09	0.25	0.37	0.91	0.56	0.56	0.79	0.17	0.03
Avail Cap(c_a), veh/h	879	1040	881	890	1057	895	294	1289	1323	520	2998	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	11.4	10.8	12.5	11.2	11.4	14.7	7.7	7.7	13.5	5.3	5.0
Incr Delay (d2), s/veh	0.2	0.9	0.0	0.1	0.4	0.9	51.7	0.8	0.8	9.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.0	0.2	0.3	0.5	0.7	1.2	1.3	1.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	12.3	10.8	12.6	11.6	12.3	66.4	8.5	8.4	22.8	5.4	5.0
LnGrp LOS	B	B	B	B	B	B	E	A	A	C	A	A
Approach Vol, veh/h		168			195			754			382	
Approach Delay, s/veh		12.3			12.1			10.8			10.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	14.9		8.7	4.6	16.8		8.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	22.0		17.0	5.0	26.0		17.0				
Max Q Clear Time (g_c+I1), s	4.0	6.9		4.2	2.5	3.3		4.3				
Green Ext Time (p_c), s	0.1	4.0		0.6	0.0	1.6		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			11.1									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	240	156	177	537	248	228	530	44	196	437	188
Future Volume (veh/h)	260	240	156	177	537	248	228	530	44	196	437	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	260	240	38	177	537	74	228	530	44	196	437	37
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	421	850	379	235	886	395	375	1003	82	329	994	309
Arrive On Green	0.12	0.24	0.24	0.13	0.25	0.25	0.11	0.21	0.21	0.10	0.20	0.20
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4770	392	3401	5025	1560
Grp Volume(v), veh/h	260	240	38	177	537	74	228	374	200	196	437	37
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1785	1700	1675	1560
Q Serve(g_s), s	3.6	2.7	0.9	4.8	6.6	1.8	3.2	4.9	5.0	2.7	3.8	1.0
Cycle Q Clear(g_c), s	3.6	2.7	0.9	4.8	6.6	1.8	3.2	4.9	5.0	2.7	3.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	421	850	379	235	886	395	375	710	375	329	994	309
V/C Ratio(X)	0.62	0.28	0.10	0.75	0.61	0.19	0.61	0.53	0.53	0.60	0.44	0.12
Avail Cap(c_a), veh/h	1181	1501	669	860	2001	893	1034	1698	897	958	2425	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	15.4	14.7	20.8	16.5	14.7	21.1	17.4	17.5	21.5	17.5	16.4
Incr Delay (d2), s/veh	1.5	0.2	0.1	4.8	0.7	0.2	1.6	0.6	1.2	1.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.0	0.3	2.1	2.5	0.6	1.2	1.7	1.9	1.1	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	15.6	14.9	25.6	17.2	14.9	22.7	18.0	18.6	23.2	17.8	16.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		538			788			802			670	
Approach Delay, s/veh		18.8			18.9			19.5			19.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	14.5	10.6	15.9	9.4	13.8	10.1	16.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	25.0	24.0	21.0	15.0	24.0	17.0	28.0
Max Q Clear Time (g_c+I1), s	4.7	7.0	6.8	4.7	5.2	5.8	5.6	8.6
Green Ext Time (p_c), s	0.4	3.5	0.4	1.4	0.5	2.9	0.7	3.8

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	302	197	850	580	110
Future Volume (veh/h)	109	302	197	850	580	110
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	109	98	197	850	580	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	213	189	378	3009	1441	269
Arrive On Green	0.12	0.12	0.11	0.59	0.34	0.34
Sat Flow, veh/h	1753	1560	3428	5233	4385	787
Grp Volume(v), veh/h	109	98	197	850	455	235
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1684
Q Serve(g_s), s	1.6	1.7	1.5	2.3	2.9	3.0
Cycle Q Clear(g_c), s	1.6	1.7	1.5	2.3	2.9	3.0
Prop In Lane	1.00	1.00	1.00			0.47
Lane Grp Cap(c), veh/h	213	189	378	3009	1135	575
V/C Ratio(X)	0.51	0.52	0.52	0.28	0.40	0.41
Avail Cap(c_a), veh/h	1808	1609	1585	7747	3073	1557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	11.6	11.8	2.8	7.1	7.1
Incr Delay (d2), s/veh	1.9	2.2	1.1	0.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.5	0.1	0.6	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.5	13.8	12.9	2.8	7.3	7.6
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	207			1047	690	
Approach Delay, s/veh	13.6			4.7	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		20.7		7.4	7.1	13.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		29.0	13.0	26.0
Max Q Clear Time (g_c+I1), s		4.3		3.7	3.5	5.0
Green Ext Time (p_c), s		7.2		0.6	0.4	4.6
Intersection Summary						
HCM 6th Ctrl Delay			6.6			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	117	61	62	254	327	148	1054	45	122	386	40
Future Volume (veh/h)	60	117	61	62	254	327	148	1054	45	122	386	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	60	117	61	62	254	95	148	1054	18	122	386	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	74	395	194	77	330	280	192	1388	619	156	1309	584
Arrive On Green	0.04	0.18	0.18	0.04	0.18	0.18	0.11	0.39	0.39	0.09	0.37	0.37
Sat Flow, veh/h	1739	2253	1108	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	60	88	90	62	254	95	148	1054	18	122	386	14
Grp Sat Flow(s),veh/h/ln	1739	1735	1626	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	1.8	2.4	2.6	1.8	6.9	2.8	4.4	13.9	0.4	3.7	4.2	0.3
Cycle Q Clear(g_c), s	1.8	2.4	2.6	1.8	6.9	2.8	4.4	13.9	0.4	3.7	4.2	0.3
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	304	285	77	330	280	192	1388	619	156	1309	584
V/C Ratio(X)	0.82	0.29	0.31	0.80	0.77	0.34	0.77	0.76	0.03	0.78	0.29	0.02
Avail Cap(c_a), veh/h	130	324	304	199	419	355	396	1711	763	229	1371	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	19.2	19.3	25.4	21.0	19.3	23.2	14.0	10.0	23.9	11.8	10.6
Incr Delay (d2), s/veh	19.1	0.5	0.6	16.9	6.6	0.7	6.5	1.6	0.0	10.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.9	0.9	1.1	3.4	1.0	2.0	4.9	0.1	1.8	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	19.7	19.9	42.3	27.6	20.0	29.7	15.6	10.0	34.0	11.9	10.6
LnGrp LOS	D	B	B	D	C	C	C	B	A	C	B	B
Approach Vol, veh/h		238			411			1220			522	
Approach Delay, s/veh		26.0			28.1			17.3			17.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	25.1	6.3	13.4	9.8	24.0	6.3	13.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	26.0	6.0	10.0	12.0	21.0	4.0	12.0
Max Q Clear Time (g_c+I1), s	5.7	15.9	3.8	4.6	6.4	6.2	3.8	8.9
Green Ext Time (p_c), s	0.0	5.2	0.0	0.4	0.2	2.2	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		20.0
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	284	128	204	352	164	112	940	56	60	437	8
Future Volume (veh/h)	40	284	128	204	352	164	112	940	56	60	437	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	40	284	128	204	352	164	112	940	56	60	437	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	351	890	391	401	892	408	192	1286	77	74	1280	23
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.06	0.38	0.38	0.04	0.37	0.37
Sat Flow, veh/h	878	2383	1047	982	2387	1093	3401	3354	200	1725	3457	63
Grp Volume(v), veh/h	40	208	204	204	263	253	112	490	506	60	217	228
Grp Sat Flow(s),veh/h/ln	878	1763	1667	982	1791	1688	1700	1749	1805	1725	1721	1800
Q Serve(g_s), s	2.1	5.0	5.2	11.2	6.5	6.6	1.9	14.4	14.4	2.1	5.5	5.5
Cycle Q Clear(g_c), s	8.8	5.0	5.2	16.5	6.5	6.6	1.9	14.4	14.4	2.1	5.5	5.5
Prop In Lane	1.00		0.63	1.00		0.65	1.00		0.11	1.00		0.04
Lane Grp Cap(c), veh/h	351	658	623	401	669	631	192	671	692	74	637	666
V/C Ratio(X)	0.11	0.32	0.33	0.51	0.39	0.40	0.58	0.73	0.73	0.81	0.34	0.34
Avail Cap(c_a), veh/h	535	1028	972	607	1044	984	397	1049	1082	201	1032	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	13.4	13.4	19.3	13.8	13.9	27.6	15.9	15.9	28.5	13.6	13.6
Incr Delay (d2), s/veh	0.1	0.3	0.3	1.0	0.4	0.4	2.8	1.6	1.5	18.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.8	2.4	2.4	2.3	0.8	5.3	5.5	1.2	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	13.6	13.7	20.3	14.2	14.3	30.4	17.4	17.4	46.5	13.9	13.9
LnGrp LOS	B	B	B	C	B	B	C	B	B	D	B	B
Approach Vol, veh/h		452			720			1108			505	
Approach Delay, s/veh		14.0			15.9			18.7			17.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	27.0		26.4	7.4	26.2		26.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	36.0		35.0	7.0	36.0		35.0				
Max Q Clear Time (g_c+I1), s	4.1	16.4		10.8	3.9	7.5		18.5				
Green Ext Time (p_c), s	0.0	6.6		2.8	0.1	2.8		3.9				
Intersection Summary												
HCM 6th Ctrl Delay			17.1									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	212	88	104	236	154	161	983	208	38	292	4
Future Volume (veh/h)	32	212	88	104	236	154	161	983	208	38	292	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	212	88	104	236	47	161	983	208	38	292	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	333	368	153	285	557	472	209	1381	292	44	1316	18
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.12	0.48	0.48	0.03	0.39	0.39
Sat Flow, veh/h	1087	1245	517	1088	1885	1598	1767	2896	612	1697	3419	47
Grp Volume(v), veh/h	32	0	300	104	236	47	161	598	593	38	144	152
Grp Sat Flow(s),veh/h/ln	1087	0	1762	1088	1885	1598	1767	1763	1745	1697	1692	1773
Q Serve(g_s), s	1.5	0.0	8.6	5.3	6.0	1.3	5.3	16.0	16.1	1.3	3.4	3.4
Cycle Q Clear(g_c), s	7.5	0.0	8.6	14.0	6.0	1.3	5.3	16.0	16.1	1.3	3.4	3.4
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.35	1.00		0.03
Lane Grp Cap(c), veh/h	333	0	521	285	557	472	209	841	833	44	652	683
V/C Ratio(X)	0.10	0.00	0.58	0.36	0.42	0.10	0.77	0.71	0.71	0.86	0.22	0.22
Avail Cap(c_a), veh/h	559	0	887	511	949	804	534	1538	1523	171	1136	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	17.8	23.7	16.9	15.2	25.5	12.3	12.3	28.9	12.3	12.3
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.8	0.5	0.1	5.9	1.1	1.1	34.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.3	1.3	2.4	0.4	2.4	5.5	5.5	0.9	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	0.0	18.8	24.5	17.4	15.3	31.4	13.5	13.5	63.0	12.5	12.5
LnGrp LOS	C	A	B	C	B	B	C	B	B	E	B	B
Approach Vol, veh/h		332			387			1352			334	
Approach Delay, s/veh		18.9			19.1			15.6			18.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	32.4		21.6	11.0	26.9		21.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	52.0		30.0	18.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	3.3	18.1		10.6	7.3	5.4		16.0				
Green Ext Time (p_c), s	0.0	10.4		1.9	0.3	1.8		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	193	164	20	422	436	284	604	12	101	348	4
Future Volume (veh/h)	16	193	164	20	422	436	284	604	12	101	348	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	193	42	20	422	117	284	604	12	101	348	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	16	780	348	22	835	656	491	1055	21	188	741	9
Arrive On Green	0.01	0.23	0.23	0.01	0.24	0.24	0.14	0.30	0.30	0.06	0.21	0.21
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3535	70	3374	3513	40
Grp Volume(v), veh/h	16	193	42	20	422	117	284	301	315	101	172	180
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1843	1687	1735	1819
Q Serve(g_s), s	0.4	1.9	0.9	0.4	4.1	1.3	3.1	5.8	5.8	1.2	3.5	3.5
Cycle Q Clear(g_c), s	0.4	1.9	0.9	0.4	4.1	1.3	3.1	5.8	5.8	1.2	3.5	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.02
Lane Grp Cap(c), veh/h	16	780	348	22	835	656	491	526	550	188	366	384
V/C Ratio(X)	0.98	0.25	0.12	0.92	0.51	0.18	0.58	0.57	0.57	0.54	0.47	0.47
Avail Cap(c_a), veh/h	211	2019	901	402	2494	1958	1890	1767	1847	930	1261	1322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	12.5	12.1	19.7	13.2	12.2	16.0	11.8	11.8	18.3	13.8	13.8
Incr Delay (d2), s/veh	98.2	0.2	0.2	69.3	0.5	0.1	1.1	1.0	0.9	2.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.3	0.6	1.4	0.4	1.1	1.9	2.0	0.5	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	118.0	12.6	12.2	89.0	13.7	12.3	17.0	12.8	12.8	20.7	14.7	14.7
LnGrp LOS	F	B	B	F	B	B	B	B	B	C	B	B
Approach Vol, veh/h		251			559			900			453	
Approach Delay, s/veh		19.3			16.1			14.1			16.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	15.9	4.5	13.3	9.7	12.4	4.4	13.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	40.0	9.0	24.0	22.0	29.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	3.2	7.8	2.4	3.9	5.1	5.5	2.4	6.1
Green Ext Time (p_c), s	0.1	4.1	0.0	1.2	0.9	2.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	299	173	0
Future Volume (veh/h)	0	0	0	299	173	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00			1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			0	1811	1811	0
Adj Flow Rate, veh/h			0	299	173	0
Peak Hour Factor			1.00	1.00	1.00	1.00
Percent Heavy Veh, %			0	6	6	0
Cap, veh/h			0	1449	1449	0
Arrive On Green			0.00	0.80	0.80	0.00
Sat Flow, veh/h			0	1811	1811	0
Grp Volume(v), veh/h			0	299	173	0
Grp Sat Flow(s),veh/h/ln			0	1811	1811	0
Q Serve(g_s), s			0.0	0.9	0.5	0.0
Cycle Q Clear(g_c), s			0.0	0.9	0.5	0.0
Prop In Lane			0.00			0.00
Lane Grp Cap(c), veh/h			0	1449	1449	0
V/C Ratio(X)			0.00	0.21	0.12	0.00
Avail Cap(c_a), veh/h			0	1449	1449	0
HCM Platoon Ratio			1.00	1.00	1.00	1.00
Upstream Filter(I)			0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh			0.0	0.5	0.5	0.0
Incr Delay (d2), s/veh			0.0	0.3	0.2	0.0
Initial Q Delay(d3),s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.0	0.9	0.7	0.0
LnGrp LOS			A	A	A	A
Approach Vol, veh/h				299	173	
Approach Delay, s/veh				0.9	0.7	
Approach LOS				A	A	

Timer - Assigned Phs		2				6
Phs Duration (G+Y+Rc), s		22.5				22.5
Change Period (Y+Rc), s		4.5				4.5
Max Green Setting (Gmax), s		18.0				18.0
Max Q Clear Time (g_c+I1), s		2.9				2.5
Green Ext Time (p_c), s		1.5				0.8

Intersection Summary			
HCM 6th Ctrl Delay			0.8
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	29	39	7	47	45	49	296	5	39	142	180
Future Volume (veh/h)	192	29	39	7	47	45	49	296	5	39	142	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	192	29	16	7	47	4	49	296	1	39	142	43
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	257	363	308	7	98	83	55	465	394	43	452	383
Arrive On Green	0.14	0.19	0.19	0.00	0.05	0.05	0.03	0.26	0.26	0.02	0.25	0.25
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	192	29	16	7	47	4	49	296	1	39	142	43
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	3.1	0.4	0.2	0.1	0.8	0.1	0.9	4.4	0.0	0.7	2.0	0.7
Cycle Q Clear(g_c), s	3.1	0.4	0.2	0.1	0.8	0.1	0.9	4.4	0.0	0.7	2.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	363	308	7	98	83	55	465	394	43	452	383
V/C Ratio(X)	0.75	0.08	0.05	1.00	0.48	0.05	0.88	0.64	0.00	0.91	0.31	0.11
Avail Cap(c_a), veh/h	710	932	790	115	301	255	338	1303	1104	282	1244	1054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	10.2	10.1	15.2	14.1	13.7	14.7	10.1	8.4	14.9	9.3	8.9
Incr Delay (d2), s/veh	4.3	0.1	0.1	156.9	3.6	0.2	33.0	1.4	0.0	43.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.1	0.3	0.3	0.0	0.8	1.4	0.0	0.7	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	10.3	10.2	172.1	17.7	14.0	47.7	11.5	8.5	58.5	9.7	9.0
LnGrp LOS	B	B	B	F	B	B	D	B	A	E	A	A
Approach Vol, veh/h		237			58			346			224	
Approach Delay, s/veh		15.6			36.1			16.7			18.1	
Approach LOS		B			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	11.9	4.1	9.8	5.0	11.6	8.3	5.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	22.0	2.0	15.0	6.0	21.0	12.0	5.0
Max Q Clear Time (g_c+I1), s	2.7	6.4	2.1	2.4	2.9	4.0	5.1	2.8
Green Ext Time (p_c), s	0.0	1.5	0.0	0.1	0.0	0.8	0.3	0.0

Intersection Summary		
HCM 6th Ctrl Delay		18.1
HCM 6th LOS		B

Intersection						
Int Delay, s/veh	3.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	109	40	48	486	324	87
Future Vol, veh/h	109	40	48	486	324	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	450	0	275	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	40	48	486	324	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	906	324	411	0	-	0
Stage 1	324	-	-	-	-	-
Stage 2	582	-	-	-	-	-
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	307	717	1148	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	717	1148	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	559	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.5	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1148	-	294	717	-	-
HCM Lane V/C Ratio	0.042	-	0.371	0.056	-	-
HCM Control Delay (s)	8.3	-	24.3	10.3	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	0.2	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	92	136	441	310	105
Future Volume (veh/h)	102	92	136	441	310	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	102	17	136	441	310	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	141	126	175	1063	555	470
Arrive On Green	0.08	0.08	0.10	0.58	0.31	0.31
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	102	17	136	441	310	30
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.3	0.2	1.8	3.1	3.3	0.3
Cycle Q Clear(g_c), s	1.3	0.2	1.8	3.1	3.3	0.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	141	126	175	1063	555	470
V/C Ratio(X)	0.72	0.14	0.78	0.42	0.56	0.06
Avail Cap(c_a), veh/h	833	741	901	3234	1940	1644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	10.0	10.3	2.7	6.8	5.7
Incr Delay (d2), s/veh	6.8	0.5	7.3	0.3	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.8	0.1	0.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.2	10.5	17.6	3.0	7.7	5.8
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	119			577	340	
Approach Delay, s/veh	16.3			6.4	7.5	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		17.5		5.9	6.3	11.1
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		41.0		11.0	12.0	25.0
Max Q Clear Time (g_c+I1), s		5.1		3.3	3.8	5.3
Green Ext Time (p_c), s		3.1		0.2	0.2	1.9

Intersection Summary			
HCM 6th Ctrl Delay			7.9
HCM 6th LOS			A

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	51	248	13	18	155
Future Vol, veh/h	36	51	248	13	18	155
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	36	51	248	13	18	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	446	255	0	0	261	0
Stage 1	255	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	570	784	-	-	1280	-
Stage 1	788	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	561	784	-	-	1280	-
Mov Cap-2 Maneuver	561	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	1280	-
HCM Lane V/C Ratio	-	-	0.129	0.014	-
HCM Control Delay (s)	-	-	11.1	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	116	160	96	4	172	121	176	112	8	71	24	97
Future Vol, veh/h	116	160	96	4	172	121	176	112	8	71	24	97
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	116	160	96	4	172	121	176	112	8	71	24	97
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	12.7	13	13.9	11.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	93%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	7%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	120	116	160	96	4	172	121	71	24	97
LT Vol	176	0	116	0	0	4	0	0	71	0	0
Through Vol	0	112	0	160	0	0	172	0	0	24	0
RT Vol	0	8	0	0	96	0	0	121	0	0	97
Lane Flow Rate	176	120	116	160	96	4	172	121	71	24	97
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.378	0.24	0.251	0.323	0.175	0.009	0.355	0.226	0.163	0.052	0.19
Departure Headway (Hd)	7.734	7.188	7.782	7.275	6.566	7.931	7.424	6.714	8.254	7.75	7.043
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	500	462	494	546	451	485	535	435	462	509
Service Time	5.475	4.928	5.525	5.018	4.309	5.676	5.168	4.458	6.001	5.496	4.79
HCM Lane V/C Ratio	0.378	0.24	0.251	0.324	0.176	0.009	0.355	0.226	0.163	0.052	0.191
HCM Control Delay	15.1	12.2	13.1	13.5	10.7	10.7	14.2	11.4	12.6	10.9	11.4
HCM Lane LOS	C	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	0.9	1	1.4	0.6	0	1.6	0.9	0.6	0.2	0.7

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	12	284	8	28	429	16	44	8	40	36	4	48
Future Vol, veh/h	12	284	8	28	429	16	44	8	40	36	4	48
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	12	284	8	28	429	16	44	8	40	36	4	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	445	0	0	292	0	0	827	809	284	821	801	429
Stage 1	-	-	-	-	-	-	308	308	-	485	485	-
Stage 2	-	-	-	-	-	-	519	501	-	336	316	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1089	-	-	1253	-	-	287	311	748	293	318	626
Stage 1	-	-	-	-	-	-	696	655	-	563	552	-
Stage 2	-	-	-	-	-	-	534	538	-	678	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1089	-	-	1253	-	-	256	301	748	265	308	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	301	-	265	308	-
Stage 1	-	-	-	-	-	-	688	648	-	557	540	-
Stage 2	-	-	-	-	-	-	478	526	-	627	648	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	16.4	15.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	256	301	748	1089	-	-	1253	-	-	265	308	626
HCM Lane V/C Ratio	0.172	0.027	0.053	0.011	-	-	0.022	-	-	0.136	0.013	0.077
HCM Control Delay (s)	22	17.3	10.1	8.3	-	-	7.9	-	-	20.7	16.8	11.2
HCM Lane LOS	C	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.6	0.1	0.2	0	-	-	0.1	-	-	0.5	0	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	288	191	30	92	112	133	232	17	168	365	120
Future Volume (veh/h)	172	288	191	30	92	112	133	232	17	168	365	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	172	288	191	30	92	112	133	232	5	168	365	120
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	532	313	208	214	92	112	165	521	441	207	409	134
Arrive On Green	0.30	0.30	0.30	0.12	0.12	0.12	0.09	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	1795	1058	701	1795	774	942	1781	1870	1585	1795	1358	447
Grp Volume(v), veh/h	172	0	479	30	0	204	133	232	5	168	0	485
Grp Sat Flow(s),veh/h/ln	1795	0	1759	1795	0	1716	1781	1870	1585	1795	0	1805
Q Serve(g_s), s	6.2	0.0	22.1	1.3	0.0	10.0	6.1	8.6	0.2	7.7	0.0	21.5
Cycle Q Clear(g_c), s	6.2	0.0	22.1	1.3	0.0	10.0	6.1	8.6	0.2	7.7	0.0	21.5
Prop In Lane	1.00		0.40	1.00		0.55	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	532	0	521	214	0	205	165	521	441	207	0	543
V/C Ratio(X)	0.32	0.00	0.92	0.14	0.00	1.00	0.81	0.45	0.01	0.81	0.00	0.89
Avail Cap(c_a), veh/h	557	0	546	214	0	205	170	521	441	321	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	28.5	33.0	0.0	36.9	37.3	24.9	21.9	36.2	0.0	28.0
Incr Delay (d2), s/veh	0.3	0.0	20.4	0.3	0.0	61.8	23.5	0.6	0.0	8.6	0.0	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	11.8	0.6	0.0	7.6	3.7	3.8	0.1	3.8	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	48.9	33.3	0.0	98.7	60.7	25.5	21.9	44.8	0.0	41.2
LnGrp LOS	C	A	D	C	A	F	E	C	C	D	A	D
Approach Vol, veh/h		651			234			370			653	
Approach Delay, s/veh		42.2			90.3			38.1			42.2	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	27.3		28.8	11.8	29.2		14.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	23.0		26.0	8.0	30.0		10.0
Max Q Clear Time (g_c+I1), s	9.7	10.6		24.1	8.1	23.5		12.0
Green Ext Time (p_c), s	0.2	1.0		0.7	0.0	1.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	76	40	20	96	224	18	418	36	196	637	73
Future Volume (veh/h)	49	76	40	20	96	224	18	418	36	196	637	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	49	76	9	20	96	32	18	418	36	196	637	41
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	394	276	234	413	279	236	19	867	74	266	1430	638
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.01	0.26	0.26	0.15	0.40	0.40
Sat Flow, veh/h	1252	1856	1572	1313	1870	1585	1781	3312	284	1795	3582	1598
Grp Volume(v), veh/h	49	76	9	20	96	32	18	223	231	196	637	41
Grp Sat Flow(s),veh/h/ln	1252	1856	1572	1313	1870	1585	1781	1777	1819	1795	1791	1598
Q Serve(g_s), s	1.0	1.0	0.1	0.4	1.3	0.5	0.3	2.9	2.9	2.8	3.5	0.4
Cycle Q Clear(g_c), s	2.2	1.0	0.1	1.4	1.3	0.5	0.3	2.9	2.9	2.8	3.5	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	394	276	234	413	279	236	19	465	476	266	1430	638
V/C Ratio(X)	0.12	0.27	0.04	0.05	0.34	0.14	0.95	0.48	0.48	0.74	0.45	0.06
Avail Cap(c_a), veh/h	898	1023	867	941	1032	874	197	1176	1204	990	3951	1762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	10.3	9.9	10.9	10.4	10.1	13.4	8.5	8.5	11.1	6.0	5.0
Incr Delay (d2), s/veh	0.1	0.5	0.1	0.0	0.7	0.3	83.1	0.8	0.8	4.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.0	0.1	0.4	0.1	0.5	0.8	0.8	1.1	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	10.8	10.0	10.9	11.1	10.3	96.5	9.2	9.3	15.0	6.2	5.1
LnGrp LOS	B	B	A	B	B	B	F	A	A	B	A	A
Approach Vol, veh/h		134			148			472			874	
Approach Delay, s/veh		11.0			10.9			12.6			8.1	
Approach LOS		B			B			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	11.1		8.1	4.3	14.9		8.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	18.0		15.0	3.0	30.0		15.0				
Max Q Clear Time (g_c+I1), s	4.8	4.9		4.2	2.3	5.5		3.4				
Green Ext Time (p_c), s	0.4	2.2		0.4	0.0	4.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	370	173	145	309	136	204	458	101	250	728	204
Future Volume (veh/h)	192	370	173	145	309	136	204	458	101	250	728	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	192	370	35	145	309	37	204	458	101	250	728	55
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	330	654	292	194	702	313	348	1077	231	413	1402	435
Arrive On Green	0.09	0.18	0.18	0.11	0.20	0.20	0.10	0.25	0.25	0.12	0.27	0.27
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4242	910	3483	5147	1598
Grp Volume(v), veh/h	192	370	35	145	309	37	204	368	191	250	728	55
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1721	1742	1716	1598
Q Serve(g_s), s	2.5	4.5	0.9	3.7	3.6	0.9	2.7	4.3	4.4	3.2	5.7	1.2
Cycle Q Clear(g_c), s	2.5	4.5	0.9	3.7	3.6	0.9	2.7	4.3	4.4	3.2	5.7	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	330	654	292	194	702	313	348	871	437	413	1402	435
V/C Ratio(X)	0.58	0.57	0.12	0.75	0.44	0.12	0.59	0.42	0.44	0.60	0.52	0.13
Avail Cap(c_a), veh/h	953	1658	740	756	2186	975	1026	1877	942	1173	3033	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	17.7	16.2	20.6	16.8	15.7	20.4	14.8	14.9	19.9	14.6	13.0
Incr Delay (d2), s/veh	1.6	0.8	0.2	5.6	0.4	0.2	1.6	0.3	0.7	1.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.3	1.7	1.3	0.3	1.1	1.5	1.6	1.3	1.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	18.5	16.4	26.2	17.2	15.9	22.0	15.1	15.6	21.3	14.9	13.2
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		597			491			763			1033	
Approach Delay, s/veh		19.6			19.8			17.1			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	16.1	9.1	12.7	8.8	16.9	8.5	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0	20.0	22.0	14.0	28.0	13.0	29.0
Max Q Clear Time (g_c+I1), s	5.2	6.4	5.7	6.5	4.7	7.7	4.5	5.6
Green Ext Time (p_c), s	0.6	3.5	0.3	2.2	0.4	5.3	0.4	2.1

Intersection Summary		
HCM 6th Ctrl Delay		17.8
HCM 6th LOS		B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	213	71	635	977	85
Future Volume (veh/h)	86	213	71	635	977	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	86	5	71	635	977	85
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	114	102	137	3367	2284	198
Arrive On Green	0.06	0.06	0.04	0.65	0.47	0.47
Sat Flow, veh/h	1810	1610	3483	5316	4992	419
Grp Volume(v), veh/h	86	5	71	635	695	367
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1810
Q Serve(g_s), s	1.3	0.1	0.6	1.4	3.8	3.8
Cycle Q Clear(g_c), s	1.3	0.1	0.6	1.4	3.8	3.8
Prop In Lane	1.00	1.00	1.00			0.23
Lane Grp Cap(c), veh/h	114	102	137	3367	1625	857
V/C Ratio(X)	0.75	0.05	0.52	0.19	0.43	0.43
Avail Cap(c_a), veh/h	1215	1081	738	6909	3394	1790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	12.5	13.3	1.9	4.9	4.9
Incr Delay (d2), s/veh	9.6	0.2	3.0	0.0	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2	0.0	0.6	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.6	12.7	16.3	2.0	5.1	5.3
LnGrp LOS	C	B	B	A	A	A
Approach Vol, veh/h	91			706	1062	
Approach Delay, s/veh	22.1			3.4	5.2	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		22.5		5.8	5.1	17.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		38.0		19.0	6.0	28.0
Max Q Clear Time (g_c+I1), s		3.4		3.3	2.6	5.8
Green Ext Time (p_c), s		5.0		0.2	0.0	7.6

Intersection Summary	
HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	275	144	61	214	133	75	484	126	264	833	84
Future Volume (veh/h)	84	275	144	61	214	133	75	484	126	264	833	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	84	275	144	61	214	31	75	484	34	264	833	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	108	455	232	76	338	286	95	840	375	340	1323	590
Arrive On Green	0.06	0.20	0.20	0.04	0.18	0.18	0.05	0.23	0.23	0.19	0.37	0.37
Sat Flow, veh/h	1810	2315	1178	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	84	213	206	61	214	31	75	484	34	264	833	33
Grp Sat Flow(s),veh/h/ln	1810	1805	1688	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	2.2	5.1	5.3	1.6	5.0	0.8	2.0	5.7	0.8	6.7	9.2	0.6
Cycle Q Clear(g_c), s	2.2	5.1	5.3	1.6	5.0	0.8	2.0	5.7	0.8	6.7	9.2	0.6
Prop In Lane	1.00		0.70	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	355	332	76	338	286	95	840	375	340	1323	590
V/C Ratio(X)	0.78	0.60	0.62	0.80	0.63	0.11	0.79	0.58	0.09	0.78	0.63	0.06
Avail Cap(c_a), veh/h	342	758	709	301	752	637	339	1654	738	897	2760	1231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	17.4	17.5	22.6	18.1	16.4	22.3	16.1	14.3	18.3	12.3	9.6
Incr Delay (d2), s/veh	11.3	1.6	1.9	17.4	2.0	0.2	13.2	0.6	0.1	3.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.0	2.0	1.0	2.1	0.3	1.1	2.1	0.3	2.8	3.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	19.1	19.4	40.0	20.1	16.5	35.5	16.8	14.4	22.1	12.8	9.6
LnGrp LOS	C	B	B	D	C	B	D	B	B	C	B	A
Approach Vol, veh/h		503			306			593			1130	
Approach Delay, s/veh		21.6			23.7			19.0			14.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	15.2	6.0	13.4	6.5	21.7	6.8	12.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	22.0	8.0	20.0	9.0	37.0	9.0	19.0
Max Q Clear Time (g_c+I1), s	8.7	7.7	3.6	7.3	4.0	11.2	4.2	7.0
Green Ext Time (p_c), s	0.7	2.8	0.0	2.0	0.1	6.6	0.1	1.0

Intersection Summary			
HCM 6th Ctrl Delay			18.2
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	228	176	40	136	100	176	561	44	136	900	36
Future Volume (veh/h)	52	228	176	40	136	100	176	561	44	136	900	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	52	228	176	40	136	100	176	561	44	136	900	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	348	425	314	276	439	301	308	1336	105	181	1446	58
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.09	0.40	0.40	0.10	0.41	0.41
Sat Flow, veh/h	1144	1949	1439	981	2016	1383	3456	3339	261	1795	3510	140
Grp Volume(v), veh/h	52	207	197	40	119	117	176	298	307	136	459	477
Grp Sat Flow(s),veh/h/ln	1144	1777	1611	981	1777	1622	1728	1777	1823	1795	1791	1860
Q Serve(g_s), s	1.7	4.4	4.7	1.6	2.4	2.6	2.1	5.2	5.2	3.1	8.7	8.7
Cycle Q Clear(g_c), s	4.3	4.4	4.7	6.3	2.4	2.6	2.1	5.2	5.2	3.1	8.7	8.7
Prop In Lane	1.00		0.89	1.00		0.85	1.00		0.14	1.00		0.08
Lane Grp Cap(c), veh/h	348	387	351	276	387	353	308	711	729	181	737	766
V/C Ratio(X)	0.15	0.53	0.56	0.15	0.31	0.33	0.57	0.42	0.42	0.75	0.62	0.62
Avail Cap(c_a), veh/h	581	749	679	475	749	684	809	1415	1452	673	1678	1742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.8	14.9	17.7	14.0	14.1	18.7	9.2	9.2	18.7	9.9	9.9
Incr Delay (d2), s/veh	0.2	1.1	1.4	0.2	0.4	0.5	1.7	0.4	0.4	6.1	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.6	1.6	0.3	0.9	0.9	0.8	1.6	1.6	1.4	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	15.9	16.3	17.9	14.4	14.6	20.3	9.6	9.6	24.8	10.8	10.8
LnGrp LOS	B	B	B	B	B	B	C	A	A	C	B	B
Approach Vol, veh/h		456			276			781			1072	
Approach Delay, s/veh		16.1			15.0			12.0			12.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	21.1		13.3	7.8	21.6		13.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	34.0		18.0	10.0	40.0		18.0				
Max Q Clear Time (g_c+I1), s	5.1	7.2		6.7	4.1	10.7		8.3				
Green Ext Time (p_c), s	0.2	3.9		2.0	0.3	6.9		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			13.3									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	121	170	60	180	32	165	356	88	107	919	32
Future Volume (veh/h)	8	121	170	60	180	32	165	356	88	107	919	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	121	170	60	180	10	165	356	88	107	919	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	356	184	259	256	494	419	217	1214	296	140	1360	47
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.12	0.43	0.43	0.08	0.39	0.39
Sat Flow, veh/h	1193	704	989	1097	1885	1598	1767	2809	686	1781	3503	122
Grp Volume(v), veh/h	8	0	291	60	180	10	165	222	222	107	466	485
Grp Sat Flow(s),veh/h/ln	1193	0	1692	1097	1885	1598	1767	1763	1732	1781	1777	1848
Q Serve(g_s), s	0.3	0.0	8.1	2.7	4.1	0.2	4.8	4.3	4.4	3.1	11.5	11.5
Cycle Q Clear(g_c), s	4.4	0.0	8.1	10.8	4.1	0.2	4.8	4.3	4.4	3.1	11.5	11.5
Prop In Lane	1.00		0.58	1.00		1.00	1.00		0.40	1.00		0.07
Lane Grp Cap(c), veh/h	356	0	444	256	494	419	217	762	749	140	690	718
V/C Ratio(X)	0.02	0.00	0.66	0.23	0.36	0.02	0.76	0.29	0.30	0.76	0.68	0.68
Avail Cap(c_a), veh/h	653	0	865	528	963	816	635	1601	1573	438	1412	1469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	17.4	22.2	15.9	14.5	22.4	9.7	9.8	23.9	13.4	13.4
Incr Delay (d2), s/veh	0.0	0.0	1.7	0.5	0.5	0.0	5.5	0.2	0.2	8.3	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	0.7	1.6	0.1	2.1	1.4	1.4	1.5	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	19.0	22.7	16.4	14.5	27.9	10.0	10.0	32.2	14.6	14.5
LnGrp LOS	B	A	B	C	B	B	C	A	A	C	B	B
Approach Vol, veh/h		299			250			609			1058	
Approach Delay, s/veh		19.0			17.8			14.8			16.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	26.8		17.9	10.5	24.5		17.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	48.0		27.0	19.0	42.0		27.0
Max Q Clear Time (g_c+I1), s	5.1	6.4		10.1	6.8	13.5		12.8
Green Ext Time (p_c), s	0.1	3.0		1.7	0.3	7.0		1.0

Intersection Summary			
HCM 6th Ctrl Delay			16.4
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	586	420	20	206	138	284	316	44	280	652	12
Future Volume (veh/h)	12	586	420	20	206	138	284	316	44	280	652	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	586	134	20	206	45	284	316	44	280	652	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	12	930	415	22	1003	787	435	876	121	428	981	18
Arrive On Green	0.01	0.28	0.28	0.01	0.28	0.28	0.13	0.28	0.28	0.13	0.28	0.28
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3112	429	3374	3485	64
Grp Volume(v), veh/h	12	586	134	20	206	45	284	178	182	280	324	340
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1778	1687	1735	1814
Q Serve(g_s), s	0.4	8.1	3.8	0.6	2.3	0.6	4.2	4.3	4.3	4.2	8.8	8.8
Cycle Q Clear(g_c), s	0.4	8.1	3.8	0.6	2.3	0.6	4.2	4.3	4.3	4.2	8.8	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.04
Lane Grp Cap(c), veh/h	12	930	415	22	1003	787	435	496	501	428	488	511
V/C Ratio(X)	0.98	0.63	0.32	0.90	0.21	0.06	0.65	0.36	0.36	0.65	0.66	0.67
Avail Cap(c_a), veh/h	95	2029	905	168	2282	1791	971	1065	1075	956	1048	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	16.8	15.2	26.1	14.5	13.9	22.0	15.2	15.2	22.0	16.8	16.8
Incr Delay (d2), s/veh	114.5	0.7	0.4	64.2	0.1	0.0	1.7	0.4	0.4	1.7	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.8	1.2	0.6	0.9	0.2	1.6	1.6	1.6	1.6	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.7	17.5	15.6	90.3	14.6	13.9	23.7	15.6	15.7	23.7	18.4	18.3
LnGrp LOS	F	B	B	F	B	B	C	B	B	C	B	B
Approach Vol, veh/h		732			271			644			944	
Approach Delay, s/veh		19.2			20.1			19.2			19.9	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	18.9	4.7	18.7	10.7	18.9	4.4	18.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	32.0	5.0	32.0	15.0	32.0	3.0	34.0
Max Q Clear Time (g_c+I1), s	6.2	6.3	2.6	10.1	6.2	10.8	2.4	4.3
Green Ext Time (p_c), s	0.6	2.2	0.0	4.6	0.6	4.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	227	250	0
Future Volume (veh/h)	0	0	0	227	250	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00			1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			0	1856	1870	0
Adj Flow Rate, veh/h			0	227	250	0
Peak Hour Factor			1.00	1.00	1.00	1.00
Percent Heavy Veh, %			0	3	2	0
Cap, veh/h			0	1484	1496	0
Arrive On Green			0.00	0.80	0.80	0.00
Sat Flow, veh/h			0	1856	1870	0
Grp Volume(v), veh/h			0	227	250	0
Grp Sat Flow(s),veh/h/ln			0	1856	1870	0
Q Serve(g_s), s			0.0	0.6	0.7	0.0
Cycle Q Clear(g_c), s			0.0	0.6	0.7	0.0
Prop In Lane			0.00			0.00
Lane Grp Cap(c), veh/h			0	1484	1496	0
V/C Ratio(X)			0.00	0.15	0.17	0.00
Avail Cap(c_a), veh/h			0	1484	1496	0
HCM Platoon Ratio			1.00	1.00	1.00	1.00
Upstream Filter(I)			0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh			0.0	0.5	0.5	0.0
Incr Delay (d2), s/veh			0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh			0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln			0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.0	0.7	0.8	0.0
LnGrp LOS			A	A	A	A
Approach Vol, veh/h				227	250	
Approach Delay, s/veh				0.7	0.8	
Approach LOS				A	A	

Timer - Assigned Phs		2				6
Phs Duration (G+Y+Rc), s		22.5				22.5
Change Period (Y+Rc), s		4.5				4.5
Max Green Setting (Gmax), s		18.0				18.0
Max Q Clear Time (g_c+I1), s		2.6				2.7
Green Ext Time (p_c), s		1.1				1.2

Intersection Summary			
HCM 6th Ctrl Delay			0.7
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	32	68	6	38	25	47	157	12	58	247	191
Future Volume (veh/h)	100	32	68	6	38	25	47	157	12	58	247	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	100	32	29	6	38	3	47	157	3	58	247	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	128	228	193	7	101	85	53	441	373	68	459	389
Arrive On Green	0.07	0.12	0.12	0.00	0.05	0.05	0.03	0.24	0.24	0.04	0.25	0.25
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	100	32	29	6	38	3	47	157	3	58	247	60
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	1.5	0.4	0.4	0.1	0.5	0.0	0.7	1.9	0.0	0.9	3.1	0.8
Cycle Q Clear(g_c), s	1.5	0.4	0.4	0.1	0.5	0.0	0.7	1.9	0.0	0.9	3.1	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	228	193	7	101	85	53	441	373	68	459	389
V/C Ratio(X)	0.78	0.14	0.15	0.88	0.38	0.04	0.88	0.36	0.01	0.85	0.54	0.15
Avail Cap(c_a), veh/h	1078	1415	1199	339	642	544	663	2019	1711	668	2035	1725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	10.5	10.5	13.3	12.2	12.0	12.9	8.5	7.8	12.7	8.7	7.9
Incr Delay (d2), s/veh	9.9	0.3	0.4	127.0	2.3	0.2	33.1	0.5	0.0	24.4	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.1	0.3	0.2	0.0	0.7	0.5	0.0	0.7	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	10.8	10.9	140.3	14.5	12.1	45.9	9.0	7.8	37.1	9.7	8.1
LnGrp LOS	C	B	B	F	B	B	D	A	A	D	A	A
Approach Vol, veh/h		161			47			207			365	
Approach Delay, s/veh		17.8			30.4			17.3			13.8	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	10.3	4.1	7.2	4.8	10.5	5.9	5.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	29.0	5.0	20.0	10.0	29.0	16.0	9.0
Max Q Clear Time (g_c+I1), s	2.9	3.9	2.1	2.4	2.7	5.1	3.5	2.5
Green Ext Time (p_c), s	0.0	0.8	0.0	0.2	0.0	1.6	0.2	0.0

Intersection Summary		
HCM 6th Ctrl Delay		16.6
HCM 6th LOS		B

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	74	50	233	425	129
Future Vol, veh/h	57	74	50	233	425	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	450	0	275	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	2	2
Mvmt Flow	57	74	50	233	425	129

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	758	425	554	0	-	0
Stage 1	425	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	378	634	1006	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	634	1006	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1006	-	359	634	-	-
HCM Lane V/C Ratio	0.05	-	0.159	0.117	-	-
HCM Control Delay (s)	8.8	-	16.9	11.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.4	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	78	72	216	461	94
Future Volume (veh/h)	88	78	72	216	461	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	88	16	72	216	461	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	121	108	84	1112	753	638
Arrive On Green	0.07	0.07	0.05	0.61	0.40	0.40
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	88	16	72	216	461	40
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	1.2	0.2	1.0	1.3	4.8	0.4
Cycle Q Clear(g_c), s	1.2	0.2	1.0	1.3	4.8	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	121	108	84	1112	753	638
V/C Ratio(X)	0.72	0.15	0.86	0.19	0.61	0.06
Avail Cap(c_a), veh/h	647	576	561	3168	2358	1999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.9	11.7	2.1	5.9	4.6
Incr Delay (d2), s/veh	7.9	0.6	20.7	0.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.2	0.8	0.0	0.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.3	11.5	32.4	2.2	6.7	4.6
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	104			288	501	
Approach Delay, s/veh	18.1			9.8	6.6	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		19.1		5.7	5.2	13.9
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	8.0	31.0
Max Q Clear Time (g_c+I1), s		3.3		3.2	3.0	6.8
Green Ext Time (p_c), s		1.3		0.1	0.1	3.1

Intersection Summary				
HCM 6th Ctrl Delay			8.9	
HCM 6th LOS			A	

Intersection						
Int Delay, s/veh	2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	34	193	42	59	191
Future Vol, veh/h	25	34	193	42	59	191
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	25	34	193	42	59	191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	523	214	0	0	235	0
Stage 1	214	-	-	-	-	-
Stage 2	309	-	-	-	-	-
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	514	826	-	-	1332	-
Stage 1	822	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	488	826	-	-	1332	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	639	1332	-
HCM Lane V/C Ratio	-	-	0.092	0.044	-
HCM Control Delay (s)	-	-	11.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	148	200	0	168	88	104	40	12	82	72	78
Future Vol, veh/h	126	148	200	0	168	88	104	40	12	82	72	78
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	126	148	200	0	168	88	104	40	12	82	72	78
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	12.1	12.4	12.5	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	77%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	23%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	52	126	148	200	0	168	88	82	72	78
LT Vol	104	0	126	0	0	0	0	0	82	0	0
Through Vol	0	40	0	148	0	0	168	0	0	72	0
RT Vol	0	12	0	0	200	0	0	88	0	0	78
Lane Flow Rate	104	52	126	148	200	0	168	88	82	72	78
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.232	0.106	0.255	0.278	0.337	0	0.335	0.158	0.179	0.147	0.144
Departure Headway (Hd)	8.018	7.347	7.272	6.767	6.059	7.176	7.176	6.468	7.853	7.345	6.635
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	448	488	496	534	598	0	501	554	457	488	541
Service Time	5.764	5.092	4.972	4.467	3.759	4.92	4.92	4.212	5.597	5.089	4.379
HCM Lane V/C Ratio	0.232	0.107	0.254	0.277	0.334	0	0.335	0.159	0.179	0.148	0.144
HCM Control Delay	13.2	11	12.4	12.1	11.8	9.9	13.5	10.4	12.3	11.4	10.5
HCM Lane LOS	B	B	B	B	B	N	B	B	B	B	B
HCM 95th-tile Q	0.9	0.4	1	1.1	1.5	0	1.5	0.6	0.6	0.5	0.5

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	56	478	52	28	306	32	32	4	20	16	4	36
Future Vol, veh/h	56	478	52	28	306	32	32	4	20	16	4	36
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	56	478	52	28	306	32	32	4	20	16	4	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	338	0	0	530	0	0	988	984	478	990	1004	306
Stage 1	-	-	-	-	-	-	590	590	-	362	362	-
Stage 2	-	-	-	-	-	-	398	394	-	628	642	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	1227	-	-	1032	-	-	224	246	583	223	239	727
Stage 1	-	-	-	-	-	-	490	492	-	650	620	-
Stage 2	-	-	-	-	-	-	624	602	-	466	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1227	-	-	1032	-	-	198	228	583	201	222	727
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	228	-	201	222	-
Stage 1	-	-	-	-	-	-	467	469	-	620	603	-
Stage 2	-	-	-	-	-	-	573	586	-	426	443	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	20.8	15.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	198	228	583	1227	-	-	1032	-	-	201	222	727
HCM Lane V/C Ratio	0.162	0.018	0.034	0.046	-	-	0.027	-	-	0.08	0.018	0.05
HCM Control Delay (s)	26.7	21.1	11.4	8.1	-	-	8.6	-	-	24.5	21.5	10.2
HCM Lane LOS	D	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.6	0.1	0.1	0.1	-	-	0.1	-	-	0.3	0.1	0.2

HCM 6th Signalized Intersection Summary
1: Airline Highway & Union Road 05/10/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	214	160	34	382	371	194	415	61	112	184	163
Future Volume (veh/h)	270	214	160	34	382	371	194	415	61	112	184	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	270	214	160	34	382	371	194	415	16	112	184	163
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	302	168	126	648	317	308	177	412	349	97	159	141
Arrive On Green	0.18	0.18	0.18	0.37	0.37	0.37	0.10	0.22	0.22	0.06	0.18	0.18
Sat Flow, veh/h	1697	946	708	1767	865	840	1767	1856	1572	1739	893	791
Grp Volume(v), veh/h	270	0	374	34	0	753	194	415	16	112	0	347
Grp Sat Flow(s),veh/h/ln	1697	0	1654	1767	0	1704	1767	1856	1572	1739	0	1684
Q Serve(g_s), s	14.0	0.0	16.0	1.1	0.0	33.0	9.0	20.0	0.7	5.0	0.0	16.0
Cycle Q Clear(g_c), s	14.0	0.0	16.0	1.1	0.0	33.0	9.0	20.0	0.7	5.0	0.0	16.0
Prop In Lane	1.00		0.43	1.00		0.49	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	302	0	294	648	0	625	177	412	349	97	0	299
V/C Ratio(X)	0.90	0.00	1.27	0.05	0.00	1.20	1.10	1.01	0.05	1.16	0.00	1.16
Avail Cap(c_a), veh/h	302	0	294	648	0	625	177	412	349	97	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	0.0	37.0	18.4	0.0	28.5	40.5	35.0	27.5	42.5	0.0	37.0
Incr Delay (d2), s/veh	27.1	0.0	146.3	0.0	0.0	106.8	96.3	45.9	0.1	140.8	0.0	102.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	18.3	0.5	0.0	31.3	8.6	14.0	0.3	5.9	0.0	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	0.0	183.3	18.4	0.0	135.3	136.8	80.9	27.6	183.3	0.0	139.4
LnGrp LOS	E	A	F	B	A	F	F	F	C	F	A	F
Approach Vol, veh/h		644			787			625			459	
Approach Delay, s/veh		133.0			130.3			96.9			150.1	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	24.0		20.0	13.0	20.0		37.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	20.0		16.0	9.0	16.0		33.0				
Max Q Clear Time (g_c+I1), s	7.0	22.0		18.0	11.0	18.0		35.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			126.3									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	112	15	35	73	353	36	981	57	133	376	42
Future Volume (veh/h)	72	112	15	35	73	353	36	981	57	133	376	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	72	112	6	35	73	128	36	981	57	133	376	26
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	329	288	244	316	293	248	41	1472	86	170	1768	788
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.43	0.43	0.10	0.51	0.51
Sat Flow, veh/h	1163	1841	1560	1274	1870	1585	1767	3386	197	1739	3469	1547
Grp Volume(v), veh/h	72	112	6	35	73	128	36	511	527	133	376	26
Grp Sat Flow(s),veh/h/ln	1163	1841	1560	1274	1870	1585	1767	1763	1820	1739	1735	1547
Q Serve(g_s), s	2.2	2.1	0.1	1.0	1.3	2.9	0.8	8.9	8.9	2.9	2.3	0.3
Cycle Q Clear(g_c), s	3.6	2.1	0.1	3.1	1.3	2.9	0.8	8.9	8.9	2.9	2.3	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	329	288	244	316	293	248	41	766	791	170	1768	788
V/C Ratio(X)	0.22	0.39	0.02	0.11	0.25	0.52	0.88	0.67	0.67	0.78	0.21	0.03
Avail Cap(c_a), veh/h	599	715	606	612	727	616	229	1142	1179	360	2517	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.6	13.8	16.0	14.3	14.9	18.8	8.7	8.7	17.0	5.2	4.7
Incr Delay (d2), s/veh	0.3	0.9	0.0	0.2	0.4	1.7	40.0	1.0	1.0	7.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.0	0.3	0.5	1.0	0.7	2.5	2.6	1.3	0.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	15.5	13.8	16.2	14.7	16.6	58.7	9.7	9.7	24.6	5.3	4.7
LnGrp LOS	B	B	B	B	B	B	E	A	A	C	A	A
Approach Vol, veh/h		190			236			1074			535	
Approach Delay, s/veh		15.7			16.0			11.3			10.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	20.8		10.0	4.9	23.7		10.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	25.0		15.0	5.0	28.0		15.0
Max Q Clear Time (g_c+I1), s	4.9	10.9		5.6	2.8	4.3		5.1
Green Ext Time (p_c), s	0.1	5.9		0.5	0.0	2.6		0.6

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	315	186	181	693	380	326	777	50	263	547	267
Future Volume (veh/h)	309	315	186	181	693	380	326	777	50	263	547	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	309	315	68	181	693	206	326	777	50	263	547	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	432	977	436	229	990	441	449	1200	77	376	1138	353
Arrive On Green	0.12	0.27	0.27	0.13	0.28	0.28	0.13	0.25	0.25	0.11	0.23	0.23
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4865	312	3401	5025	1560
Grp Volume(v), veh/h	309	315	68	181	693	206	326	538	289	263	547	116
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1799	1700	1675	1560
Q Serve(g_s), s	5.7	4.7	2.2	6.6	11.7	7.2	6.1	9.6	9.6	5.0	6.3	4.2
Cycle Q Clear(g_c), s	5.7	4.7	2.2	6.6	11.7	7.2	6.1	9.6	9.6	5.0	6.3	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	432	977	436	229	990	441	449	833	444	376	1138	353
V/C Ratio(X)	0.72	0.32	0.16	0.79	0.70	0.47	0.73	0.65	0.65	0.70	0.48	0.33
Avail Cap(c_a), veh/h	775	1382	616	480	1541	688	769	1364	727	661	1879	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	19.3	18.4	28.3	21.6	20.0	27.9	22.6	22.6	28.7	22.5	21.6
Incr Delay (d2), s/veh	2.2	0.2	0.2	6.0	0.9	0.8	2.3	0.8	1.6	2.4	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.9	0.8	3.1	4.6	2.6	2.5	3.7	4.0	2.1	2.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	19.5	18.5	34.3	22.5	20.8	30.2	23.4	24.2	31.0	22.8	22.2
LnGrp LOS	C	B	B	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		692			1080			1153			926	
Approach Delay, s/veh		24.2			24.2			25.5			25.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	20.5	12.6	22.4	12.7	19.1	12.4	22.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	27.0	18.0	26.0	15.0	25.0	15.0	29.0
Max Q Clear Time (g_c+I1), s	7.0	11.6	8.6	6.7	8.1	8.3	7.7	13.7
Green Ext Time (p_c), s	0.5	4.9	0.3	2.1	0.7	3.8	0.6	4.9

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	335	199	1276	801	137
Future Volume (veh/h)	126	335	199	1276	801	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	126	131	199	1276	801	137
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	255	227	361	3140	1704	289
Arrive On Green	0.15	0.15	0.11	0.62	0.40	0.40
Sat Flow, veh/h	1753	1560	3428	5233	4454	728
Grp Volume(v), veh/h	126	131	199	1276	619	319
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1695
Q Serve(g_s), s	2.3	2.7	1.9	4.4	4.7	4.8
Cycle Q Clear(g_c), s	2.3	2.7	1.9	4.4	4.7	4.8
Prop In Lane	1.00	1.00	1.00			0.43
Lane Grp Cap(c), veh/h	255	227	361	3140	1320	673
V/C Ratio(X)	0.49	0.58	0.55	0.41	0.47	0.47
Avail Cap(c_a), veh/h	1389	1236	1107	6690	2926	1492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	13.6	14.5	3.3	7.6	7.6
Incr Delay (d2), s/veh	1.5	2.3	1.3	0.1	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	0.7	0.4	1.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.9	15.9	15.8	3.4	7.9	8.1
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	257			1475	938	
Approach Delay, s/veh	15.4			5.0	8.0	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.1		9.0	7.6	17.5
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		45.0		27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s		6.4		4.7	3.9	6.8
Green Ext Time (p_c), s		12.4		0.8	0.4	6.8

Intersection Summary			
HCM 6th Ctrl Delay			7.1
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	161	120	138	354	369	271	1346	82	138	505	40
Future Volume (veh/h)	60	161	120	138	354	369	271	1346	82	138	505	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	60	161	120	138	354	137	271	1346	55	138	505	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	75	286	201	174	377	320	318	1459	651	163	1143	510
Arrive On Green	0.04	0.15	0.15	0.10	0.20	0.20	0.18	0.41	0.41	0.09	0.33	0.33
Sat Flow, veh/h	1739	1950	1365	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	60	142	139	138	354	137	271	1346	55	138	505	14
Grp Sat Flow(s),veh/h/ln	1739	1735	1580	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	2.2	4.9	5.3	4.9	12.0	4.9	9.6	23.3	1.4	5.0	7.3	0.4
Cycle Q Clear(g_c), s	2.2	4.9	5.3	4.9	12.0	4.9	9.6	23.3	1.4	5.0	7.3	0.4
Prop In Lane	1.00		0.86	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	255	232	174	377	320	318	1459	651	163	1143	510
V/C Ratio(X)	0.80	0.56	0.60	0.79	0.94	0.43	0.85	0.92	0.08	0.85	0.44	0.03
Avail Cap(c_a), veh/h	81	255	232	194	377	320	357	1478	659	163	1143	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	25.5	25.7	28.4	25.3	22.5	25.6	17.9	11.5	28.8	17.1	14.7
Incr Delay (d2), s/veh	40.2	2.7	4.2	18.1	30.9	0.9	16.3	9.9	0.1	31.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.1	2.2	2.9	8.2	1.8	5.2	10.3	0.4	3.4	2.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	28.2	29.9	46.5	56.2	23.4	41.8	27.8	11.5	60.2	17.3	14.8
LnGrp LOS	E	C	C	D	E	C	D	C	B	E	B	B
Approach Vol, veh/h		341			629			1672			657	
Approach Delay, s/veh		36.4			46.9			29.5			26.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	30.7	10.3	13.5	15.6	25.1	6.8	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	27.0	7.0	9.0	13.0	20.0	3.0	13.0
Max Q Clear Time (g_c+I1), s	7.0	25.3	6.9	7.3	11.6	9.3	4.2	14.0
Green Ext Time (p_c), s	0.0	1.3	0.0	0.3	0.1	2.5	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			32.9
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	308	167	204	364	165	184	1202	56	60	532	8
Future Volume (veh/h)	40	308	167	204	364	165	184	1202	56	60	532	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	40	308	167	204	364	165	184	1202	56	60	532	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	316	825	437	341	892	398	269	1460	68	76	1366	21
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.08	0.43	0.43	0.04	0.39	0.39
Sat Flow, veh/h	867	2227	1179	926	2408	1074	3401	3402	158	1725	3470	52
Grp Volume(v), veh/h	40	242	233	204	269	260	184	617	641	60	264	276
Grp Sat Flow(s),veh/h/ln	867	1763	1643	926	1791	1692	1700	1749	1812	1725	1721	1802
Q Serve(g_s), s	2.8	7.7	8.0	15.9	8.5	8.8	4.0	23.9	23.9	2.6	8.4	8.4
Cycle Q Clear(g_c), s	11.5	7.7	8.0	23.8	8.5	8.8	4.0	23.9	23.9	2.6	8.4	8.4
Prop In Lane	1.00		0.72	1.00		0.64	1.00		0.09	1.00		0.03
Lane Grp Cap(c), veh/h	316	653	609	341	664	627	269	750	778	76	677	709
V/C Ratio(X)	0.13	0.37	0.38	0.60	0.41	0.41	0.68	0.82	0.82	0.79	0.39	0.39
Avail Cap(c_a), veh/h	368	759	708	397	771	729	399	890	922	135	808	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	17.6	17.7	26.4	17.9	17.9	34.3	19.3	19.3	36.3	16.6	16.6
Incr Delay (d2), s/veh	0.2	0.4	0.4	1.9	0.4	0.4	3.0	5.4	5.3	16.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.0	2.9	3.5	3.4	3.3	1.7	10.0	10.3	1.4	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	17.9	18.1	28.3	18.3	18.4	37.4	24.7	24.6	53.1	17.0	17.0
LnGrp LOS	C	B	B	C	B	B	D	C	C	D	B	B
Approach Vol, veh/h		515			733			1442			600	
Approach Delay, s/veh		18.4			21.1			26.3			20.6	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	36.9		32.4	10.1	34.2		32.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	39.0		33.0	9.0	36.0		33.0				
Max Q Clear Time (g_c+I1), s	4.6	25.9		13.5	6.0	10.4		25.8				
Green Ext Time (p_c), s	0.0	7.0		3.1	0.2	3.4		2.6				

Intersection Summary		
HCM 6th Ctrl Delay		22.9
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	219	91	112	247	174	167	1230	219	45	377	4
Future Volume (veh/h)	32	219	91	112	247	174	167	1230	219	45	377	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	219	91	112	247	67	167	1230	219	45	377	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	289	365	151	246	552	468	208	1558	275	55	1492	16
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.12	0.52	0.52	0.03	0.43	0.43
Sat Flow, veh/h	1057	1245	517	1078	1885	1598	1767	2994	529	1697	3431	36
Grp Volume(v), veh/h	32	0	310	112	247	67	167	721	728	45	186	195
Grp Sat Flow(s),veh/h/ln	1057	0	1762	1078	1885	1598	1767	1763	1760	1697	1692	1775
Q Serve(g_s), s	2.0	0.0	11.7	7.7	8.3	2.4	7.2	25.8	26.3	2.0	5.4	5.4
Cycle Q Clear(g_c), s	10.3	0.0	11.7	19.5	8.3	2.4	7.2	25.8	26.3	2.0	5.4	5.4
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.30	1.00		0.02
Lane Grp Cap(c), veh/h	289	0	516	246	552	468	208	917	916	55	736	772
V/C Ratio(X)	0.11	0.00	0.60	0.46	0.45	0.14	0.80	0.79	0.80	0.82	0.25	0.25
Avail Cap(c_a), veh/h	375	0	658	332	704	596	387	1202	1201	131	915	959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	23.6	31.9	22.4	20.3	33.4	15.1	15.3	37.4	13.9	13.9
Incr Delay (d2), s/veh	0.2	0.0	1.1	1.3	0.6	0.1	7.0	2.6	2.8	24.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.8	2.0	3.6	0.9	3.4	9.7	10.0	1.2	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	24.7	33.2	22.9	20.4	40.4	17.7	18.1	61.7	14.1	14.1
LnGrp LOS	C	A	C	C	C	C	D	B	B	E	B	B
Approach Vol, veh/h		342			426			1616			426	
Approach Delay, s/veh		24.9			25.2			20.2			19.1	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	44.4		26.8	13.2	37.8		26.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	53.0		29.0	17.0	42.0		29.0
Max Q Clear Time (g_c+I1), s	4.0	28.3		13.7	9.2	7.4		21.5
Green Ext Time (p_c), s	0.0	12.1		1.8	0.3	2.4		1.3

Intersection Summary		
HCM 6th Ctrl Delay		21.4
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	258	182	37	600	506	330	674	26	114	365	4
Future Volume (veh/h)	16	258	182	37	600	506	330	674	26	114	365	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	258	60	37	600	187	330	674	26	114	365	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	17	923	411	44	1029	807	516	1066	41	204	766	8
Arrive On Green	0.01	0.27	0.27	0.02	0.29	0.29	0.15	0.31	0.31	0.06	0.22	0.22
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3461	133	3374	3515	38
Grp Volume(v), veh/h	16	258	60	37	600	187	330	343	357	114	180	189
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1832	1687	1735	1819
Q Serve(g_s), s	0.5	2.9	1.5	1.0	6.9	2.5	4.4	8.1	8.1	1.6	4.4	4.4
Cycle Q Clear(g_c), s	0.5	2.9	1.5	1.0	6.9	2.5	4.4	8.1	8.1	1.6	4.4	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	17	923	411	44	1029	807	516	543	564	204	378	396
V/C Ratio(X)	0.97	0.28	0.15	0.85	0.58	0.23	0.64	0.63	0.63	0.56	0.48	0.48
Avail Cap(c_a), veh/h	175	1953	871	296	2289	1797	1425	1428	1484	631	1009	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	13.7	13.2	23.4	14.6	13.0	19.2	14.3	14.3	22.0	16.4	16.4
Incr Delay (d2), s/veh	93.7	0.2	0.2	33.8	0.5	0.1	1.3	1.2	1.2	2.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.0	0.4	0.8	2.5	0.7	1.6	2.9	3.0	0.6	1.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	13.9	13.3	57.2	15.1	13.2	20.6	15.5	15.5	24.4	17.4	17.3
LnGrp LOS	F	B	B	E	B	B	C	B	B	C	B	B
Approach Vol, veh/h		334			824			1030			483	
Approach Delay, s/veh		18.7			16.6			17.1			19.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	18.8	5.2	17.2	11.2	14.5	4.5	17.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	39.0	8.0	28.0	20.0	28.0	5.0	31.0
Max Q Clear Time (g_c+I1), s	3.6	10.1	3.0	4.9	6.4	6.4	2.5	8.9
Green Ext Time (p_c), s	0.1	4.8	0.0	1.8	1.0	2.1	0.0	5.0

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	176	32	35	343	204	85
Future Volume (veh/h)	176	32	35	343	204	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1811	1811	1811
Adj Flow Rate, veh/h	176	32	35	343	204	85
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	6	6	6	6
Cap, veh/h	249	222	809	1184	1184	1003
Arrive On Green	0.14	0.14	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1781	1585	1056	1811	1811	1535
Grp Volume(v), veh/h	176	32	35	343	204	85
Grp Sat Flow(s),veh/h/ln	1781	1585	1056	1811	1811	1535
Q Serve(g_s), s	4.1	0.8	0.6	3.5	1.9	0.9
Cycle Q Clear(g_c), s	4.1	0.8	2.5	3.5	1.9	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	249	222	809	1184	1184	1003
V/C Ratio(X)	0.71	0.14	0.04	0.29	0.17	0.08
Avail Cap(c_a), veh/h	919	818	809	1184	1184	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	16.5	3.4	3.2	2.9	2.8
Incr Delay (d2), s/veh	3.7	0.3	0.1	0.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	0.1	0.7	0.4	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.6	16.8	3.5	3.8	3.3	2.9
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	208			378	289	
Approach Delay, s/veh	20.8			3.8	3.2	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		33.0		10.6		33.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		5.5		6.1		3.9
Green Ext Time (p_c), s		2.2		0.5		1.4

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	130	54	39	259	117	88	461	20	73	223	223
Future Volume (veh/h)	229	130	54	39	259	117	88	461	20	73	223	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	229	130	31	39	259	76	88	461	16	73	223	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	284	589	499	46	330	280	111	550	466	90	528	448
Arrive On Green	0.16	0.31	0.31	0.03	0.18	0.18	0.06	0.30	0.30	0.05	0.29	0.29
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	229	130	31	39	259	76	88	461	16	73	223	86
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	6.4	2.6	0.7	1.2	7.0	2.2	2.6	12.4	0.4	2.2	5.2	2.2
Cycle Q Clear(g_c), s	6.4	2.6	0.7	1.2	7.0	2.2	2.6	12.4	0.4	2.2	5.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	589	499	46	330	280	111	550	466	90	528	448
V/C Ratio(X)	0.81	0.22	0.06	0.85	0.78	0.27	0.79	0.84	0.03	0.81	0.42	0.19
Avail Cap(c_a), veh/h	348	589	499	169	389	330	232	696	590	99	557	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	13.3	12.6	25.2	20.4	18.4	24.0	16.9	12.7	24.4	14.9	13.8
Incr Delay (d2), s/veh	10.9	0.2	0.1	32.5	8.6	0.5	11.9	7.2	0.0	34.9	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.0	0.2	0.9	3.5	0.8	1.4	5.5	0.1	1.7	1.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	13.5	12.7	57.7	29.0	18.9	35.9	24.2	12.8	59.3	15.4	14.0
LnGrp LOS	C	B	B	E	C	B	D	C	B	E	B	B
Approach Vol, veh/h		390			374			565			382	
Approach Delay, s/veh		24.3			29.9			25.7			23.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	19.8	5.4	20.1	7.3	19.2	12.2	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	20.0	5.0	16.0	7.0	16.0	10.0	11.0
Max Q Clear Time (g_c+I1), s	4.2	14.4	3.2	4.6	4.6	7.2	8.4	9.0
Green Ext Time (p_c), s	0.0	1.4	0.0	0.5	0.0	1.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	157.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	85	61	68	179	90	104	674	32	42	392	87
Future Vol, veh/h	110	85	61	68	179	90	104	674	32	42	392	87
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	85	61	68	179	90	104	674	32	42	392	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1509	1390	392	1475	1445	674	479	0	0	706	0	0
Stage 1	476	476	-	882	882	-	-	-	-	-	-	-
Stage 2	1033	914	-	593	563	-	-	-	-	-	-	-
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	~ 99	142	657	104	~ 132	455	1083	-	-	892	-	-
Stage 1	570	557	-	341	364	-	-	-	-	-	-	-
Stage 2	281	352	-	492	509	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	122	657	~ 37	~ 114	455	1083	-	-	892	-	-
Mov Cap-2 Maneuver	-	122	-	~ 37	~ 114	-	-	-	-	-	-	-
Stage 1	515	531	-	308	329	-	-	-	-	-	-	-
Stage 2	~ 93	318	-	357	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 894.7	1.1	0.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1083	-	-	-	657	72	455	892	-	-
HCM Lane V/C Ratio	0.096	-	-	-	0.093	3.431	0.198	0.047	-	-
HCM Control Delay (s)	8.7	-	-	-	1[illegible]	$ 1215.3	14.9	9.2	-	-
HCM Lane LOS	A	-	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	25.5	0.7	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	109	172	653	392	105
Future Volume (veh/h)	102	109	172	653	392	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	102	34	172	653	392	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	153	136	227	1141	623	528
Arrive On Green	0.09	0.09	0.13	0.62	0.34	0.34
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	102	34	172	653	392	30
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.5	0.6	2.6	5.7	4.9	0.4
Cycle Q Clear(g_c), s	1.5	0.6	2.6	5.7	4.9	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	153	136	227	1141	623	528
V/C Ratio(X)	0.67	0.25	0.76	0.57	0.63	0.06
Avail Cap(c_a), veh/h	583	519	771	2902	1793	1519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	11.6	11.5	3.1	7.5	6.0
Incr Delay (d2), s/veh	4.9	0.9	5.2	0.5	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.5	1.0	0.1	1.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	12.6	16.6	3.5	8.5	6.0
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	136			825	422	
Approach Delay, s/veh	15.9			6.2	8.4	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		20.9		6.4	7.5	13.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	12.0	27.0
Max Q Clear Time (g_c+I1), s		7.7		3.5	4.6	6.9
Green Ext Time (p_c), s		5.2		0.1	0.3	2.4

Intersection Summary		
HCM 6th Ctrl Delay		7.8
HCM 6th LOS		A

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	301	0	0	253
Future Vol, veh/h	0	0	301	0	0	253
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	0	0	301	0	0	253

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	554	301	0	0	301	0
Stage 1	301	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	493	739	-	-	1238	-
Stage 1	751	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	739	-	-	1238	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1238	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	200	100	4	199	144	183	117	8	123	35	96
Future Vol, veh/h	128	200	100	4	199	144	183	117	8	123	35	96
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	128	200	100	4	199	144	183	117	8	123	35	96
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	14.9	15.5	15.8	13.8
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	94%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	6%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	125	128	200	100	4	199	144	123	35	96
LT Vol	183	0	128	0	0	4	0	0	123	0	0
Through Vol	0	117	0	200	0	0	199	0	0	35	0
RT Vol	0	8	0	0	100	0	0	144	0	0	96
Lane Flow Rate	183	125	128	200	100	4	199	144	123	35	96
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.426	0.272	0.298	0.438	0.199	0.01	0.445	0.293	0.302	0.081	0.203
Departure Headway (Hd)	8.39	7.845	8.385	7.876	7.164	8.56	8.051	7.337	8.836	8.33	7.621
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	428	456	428	456	499	417	446	488	406	429	469
Service Time	6.16	5.616	6.156	5.647	4.934	6.333	5.823	5.11	6.616	6.109	5.4
HCM Lane V/C Ratio	0.428	0.274	0.299	0.439	0.2	0.01	0.446	0.295	0.303	0.082	0.205
HCM Control Delay	17.3	13.5	14.7	16.7	11.7	11.4	17.2	13.2	15.4	11.8	12.4
HCM Lane LOS	C	B	B	C	B	B	C	B	C	B	B
HCM 95th-tile Q	2.1	1.1	1.2	2.2	0.7	0	2.2	1.2	1.3	0.3	0.8

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	326	10	32	457	17	45	8	51	39	4	147
Future Vol, veh/h	45	326	10	32	457	17	45	8	51	39	4	147
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	45	326	10	32	457	17	45	8	51	39	4	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	474	0	0	336	0	0	1021	954	326	972	947	457
Stage 1	-	-	-	-	-	-	416	416	-	521	521	-
Stage 2	-	-	-	-	-	-	605	538	-	451	426	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1062	-	-	1207	-	-	212	256	708	232	261	604
Stage 1	-	-	-	-	-	-	608	587	-	539	532	-
Stage 2	-	-	-	-	-	-	479	517	-	588	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1062	-	-	1207	-	-	150	239	708	199	243	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	239	-	199	243	-
Stage 1	-	-	-	-	-	-	582	562	-	516	518	-
Stage 2	-	-	-	-	-	-	350	503	-	515	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	23.6	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	150	239	708	1062	-	-	1207	-	-	199	243	604
HCM Lane V/C Ratio	0.3	0.033	0.072	0.042	-	-	0.027	-	-	0.196	0.016	0.243
HCM Control Delay (s)	39	20.6	10.5	8.5	-	-	8.1	-	-	27.4	20.1	12.9
HCM Lane LOS	E	C	B	A	-	-	A	-	-	D	C	B
HCM 95th %tile Q(veh)	1.2	0.1	0.2	0.1	-	-	0.1	-	-	0.7	0.1	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	386	230	29	157	190	173	329	18	301	499	249
Future Volume (veh/h)	265	386	230	29	157	190	173	329	18	301	499	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	265	386	230	29	157	190	173	329	6	301	499	249
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	439	271	161	239	104	125	139	499	423	319	435	217
Arrive On Green	0.24	0.24	0.24	0.13	0.13	0.13	0.08	0.27	0.27	0.18	0.37	0.37
Sat Flow, veh/h	1795	1107	660	1795	776	940	1781	1870	1585	1795	1187	592
Grp Volume(v), veh/h	265	0	616	29	0	347	173	329	6	301	0	748
Grp Sat Flow(s),veh/h/ln	1795	0	1766	1795	0	1716	1781	1870	1585	1795	0	1779
Q Serve(g_s), s	11.8	0.0	22.0	1.3	0.0	12.0	7.0	14.1	0.3	14.9	0.0	33.0
Cycle Q Clear(g_c), s	11.8	0.0	22.0	1.3	0.0	12.0	7.0	14.1	0.3	14.9	0.0	33.0
Prop In Lane	1.00		0.37	1.00		0.55	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	439	0	432	239	0	229	139	499	423	319	0	652
V/C Ratio(X)	0.60	0.00	1.43	0.12	0.00	1.52	1.25	0.66	0.01	0.94	0.00	1.15
Avail Cap(c_a), veh/h	439	0	432	239	0	229	139	499	423	319	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	34.0	34.4	0.0	39.0	41.5	29.4	24.3	36.5	0.0	28.5
Incr Delay (d2), s/veh	2.3	0.0	205.0	0.2	0.0	253.6	158.1	3.2	0.0	35.6	0.0	83.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	33.7	0.6	0.0	21.1	9.1	6.6	0.1	9.5	0.0	28.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	0.0	239.0	34.6	0.0	292.6	199.6	32.6	24.3	72.1	0.0	111.7
LnGrp LOS	C	A	F	C	A	F	F	C	C	E	A	F
Approach Vol, veh/h		881			376			508			1049	
Approach Delay, s/veh		176.9			272.7			89.3			100.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	28.0		26.0	11.0	37.0		16.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	24.0		22.0	7.0	33.0		12.0
Max Q Clear Time (g_c+I1), s	16.9	16.1		24.0	9.0	35.0		14.0
Green Ext Time (p_c), s	0.0	1.2		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	145.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	77	45	25	97	269	22	675	42	257	1023	128
Future Volume (veh/h)	97	77	45	25	97	269	22	675	42	257	1023	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	97	77	14	25	97	77	22	675	42	257	1023	96
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	355	335	284	381	338	286	24	1060	66	338	1743	777
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.31	0.31	0.19	0.49	0.49
Sat Flow, veh/h	1201	1856	1572	1306	1870	1585	1781	3398	211	1795	3582	1598
Grp Volume(v), veh/h	97	77	14	25	97	77	22	353	364	257	1023	96
Grp Sat Flow(s),veh/h/ln	1201	1856	1572	1306	1870	1585	1781	1777	1832	1795	1791	1598
Q Serve(g_s), s	2.9	1.3	0.3	0.6	1.7	1.6	0.5	6.4	6.4	5.1	7.7	1.2
Cycle Q Clear(g_c), s	4.5	1.3	0.3	2.0	1.7	1.6	0.5	6.4	6.4	5.1	7.7	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	355	335	284	381	338	286	24	554	571	338	1743	777
V/C Ratio(X)	0.27	0.23	0.05	0.07	0.29	0.27	0.92	0.64	0.64	0.76	0.59	0.12
Avail Cap(c_a), veh/h	553	642	544	597	647	548	142	898	926	764	3050	1360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	13.2	12.7	14.0	13.3	13.3	18.5	11.1	11.1	14.5	6.9	5.3
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.1	0.5	0.5	65.4	1.2	1.2	3.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.5	0.1	0.2	0.6	0.5	0.6	2.1	2.1	2.0	1.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	13.5	12.8	14.1	13.8	13.8	84.0	12.3	12.3	18.0	7.2	5.3
LnGrp LOS	B	B	B	B	B	B	F	B	B	B	A	A
Approach Vol, veh/h		188			199			739			1376	
Approach Delay, s/veh		14.6			13.8			14.4			9.1	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	15.7		10.8	4.5	22.3		10.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	19.0		13.0	3.0	32.0		13.0
Max Q Clear Time (g_c+I1), s	7.1	8.4		6.5	2.5	9.7		4.0
Green Ext Time (p_c), s	0.5	3.3		0.4	0.0	8.2		0.5

Intersection Summary			
HCM 6th Ctrl Delay			11.5
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	534	243	152	474	235	375	615	107	448	1131	279
Future Volume (veh/h)	286	534	243	152	474	235	375	615	107	448	1131	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	286	534	105	152	474	136	375	615	107	448	1131	130
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	395	747	333	194	727	324	498	1297	222	579	1630	506
Arrive On Green	0.11	0.21	0.21	0.11	0.20	0.20	0.14	0.29	0.29	0.17	0.32	0.32
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4421	758	3483	5147	1598
Grp Volume(v), veh/h	286	534	105	152	474	136	375	475	247	448	1131	130
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1749	1742	1716	1598
Q Serve(g_s), s	5.7	9.9	4.0	5.9	8.7	5.3	7.4	8.1	8.3	8.8	13.7	4.3
Cycle Q Clear(g_c), s	5.7	9.9	4.0	5.9	8.7	5.3	7.4	8.1	8.3	8.8	13.7	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	395	747	333	194	727	324	498	1007	513	579	1630	506
V/C Ratio(X)	0.72	0.72	0.32	0.78	0.65	0.42	0.75	0.47	0.48	0.77	0.69	0.26
Avail Cap(c_a), veh/h	634	1153	514	377	1253	559	829	1297	661	926	2089	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	26.3	24.0	31.1	26.2	24.8	29.4	20.7	20.8	28.5	21.4	18.2
Incr Delay (d2), s/veh	2.5	1.3	0.5	6.8	1.0	0.9	2.3	0.3	0.7	2.2	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.2	1.5	2.8	3.6	2.0	3.1	3.1	3.3	3.7	5.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	27.6	24.5	37.9	27.2	25.7	31.7	21.0	21.5	30.7	22.1	18.4
LnGrp LOS	C	C	C	D	C	C	C	C	C	C	C	B
Approach Vol, veh/h		925			762			1097			1709	
Approach Delay, s/veh		29.0			29.0			24.8			24.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	25.0	11.7	18.9	14.2	26.6	12.1	18.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	19.0	27.0	15.0	23.0	17.0	29.0	13.0	25.0				
Max Q Clear Time (g_c+I1), s	10.8	10.3	7.9	11.9	9.4	15.7	7.7	10.7				
Green Ext Time (p_c), s	1.1	4.4	0.2	3.0	0.8	6.9	0.5	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			26.1									
HCM 6th LOS			C									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	182	396	73	982	1470	175
Future Volume (veh/h)	182	396	73	982	1470	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	182	188	73	982	1470	175
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	321	285	137	3277	2351	280
Arrive On Green	0.18	0.18	0.04	0.64	0.50	0.50
Sat Flow, veh/h	1810	1610	3483	5316	4831	555
Grp Volume(v), veh/h	182	188	73	982	1082	563
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1785
Q Serve(g_s), s	4.0	4.7	0.9	3.7	9.8	9.8
Cycle Q Clear(g_c), s	4.0	4.7	0.9	3.7	9.8	9.8
Prop In Lane	1.00	1.00	1.00			0.31
Lane Grp Cap(c), veh/h	321	285	137	3277	1731	901
V/C Ratio(X)	0.57	0.66	0.53	0.30	0.62	0.63
Avail Cap(c_a), veh/h	926	824	324	4191	2156	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	16.5	20.3	3.5	7.7	7.7
Incr Delay (d2), s/veh	1.6	2.6	3.2	0.1	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.3	0.4	0.6	2.5	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	19.1	23.5	3.6	8.1	8.4
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	370			1055	1645	
Approach Delay, s/veh	18.4			4.9	8.2	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.4		11.6	5.7	25.7
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		35.0		22.0	4.0	27.0
Max Q Clear Time (g_c+I1), s		5.7		6.7	2.9	11.8
Green Ext Time (p_c), s		8.1		1.0	0.0	9.9

Intersection Summary		
HCM 6th Ctrl Delay		8.3
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	388	307	123	290	160	193	732	214	309	1205	84
Future Volume (veh/h)	84	388	307	123	290	160	193	732	214	309	1205	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	84	388	307	123	290	58	193	732	122	309	1205	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	108	392	307	155	434	368	231	1153	514	350	1385	618
Arrive On Green	0.06	0.20	0.20	0.09	0.23	0.23	0.13	0.32	0.32	0.20	0.39	0.39
Sat Flow, veh/h	1810	1926	1507	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	84	363	332	123	290	58	193	732	122	309	1205	33
Grp Sat Flow(s),veh/h/ln	1810	1805	1629	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	3.8	16.8	17.0	5.6	11.7	2.4	8.8	14.5	4.7	14.1	26.1	1.1
Cycle Q Clear(g_c), s	3.8	16.8	17.0	5.6	11.7	2.4	8.8	14.5	4.7	14.1	26.1	1.1
Prop In Lane	1.00		0.93	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	367	332	155	434	368	231	1153	514	350	1385	618
V/C Ratio(X)	0.78	0.99	1.00	0.79	0.67	0.16	0.83	0.64	0.24	0.88	0.87	0.05
Avail Cap(c_a), veh/h	130	367	332	194	452	383	280	1201	536	427	1490	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	33.2	33.3	37.4	29.2	25.7	35.5	24.1	20.8	32.6	23.5	15.9
Incr Delay (d2), s/veh	21.2	43.8	49.5	16.3	3.6	0.2	16.6	1.0	0.2	16.6	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	11.6	11.1	3.1	5.6	0.9	4.8	6.1	1.7	7.5	11.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	76.9	82.8	53.7	32.8	25.9	52.1	25.2	21.0	49.2	29.1	15.9
LnGrp LOS	E	E	F	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h		779			471			1047			1547	
Approach Delay, s/veh		77.6			37.4			29.7			32.8	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	30.9	11.2	21.0	14.8	36.5	9.0	23.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	28.0	9.0	17.0	13.0	35.0	6.0	20.0
Max Q Clear Time (g_c+I1), s	16.1	16.5	7.6	19.0	10.8	28.1	5.8	13.7
Green Ext Time (p_c), s	0.4	4.2	0.0	0.0	0.1	4.4	0.0	1.0

Intersection Summary		
HCM 6th Ctrl Delay		41.6
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	249	296	40	164	101	272	740	44	137	1199	36
Future Volume (veh/h)	52	249	296	40	164	101	272	740	44	137	1199	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	52	249	296	40	164	101	272	740	44	137	1199	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	323	450	402	184	547	319	387	1567	93	177	1585	48
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.11	0.46	0.46	0.10	0.45	0.45
Sat Flow, veh/h	1114	1777	1585	862	2160	1260	3456	3408	203	1795	3550	107
Grp Volume(v), veh/h	52	249	296	40	133	132	272	386	398	137	605	630
Grp Sat Flow(s),veh/h/ln	1114	1777	1585	862	1777	1644	1728	1777	1834	1795	1791	1866
Q Serve(g_s), s	2.5	7.8	10.9	2.8	3.9	4.1	4.8	9.5	9.6	4.7	18.0	18.0
Cycle Q Clear(g_c), s	6.7	7.8	10.9	13.8	3.9	4.1	4.8	9.5	9.6	4.7	18.0	18.0
Prop In Lane	1.00		1.00	1.00		0.77	1.00		0.11	1.00		0.06
Lane Grp Cap(c), veh/h	323	450	402	184	450	416	387	817	843	177	799	833
V/C Ratio(X)	0.16	0.55	0.74	0.22	0.30	0.32	0.70	0.47	0.47	0.77	0.76	0.76
Avail Cap(c_a), veh/h	355	502	448	209	502	464	596	1059	1093	338	1096	1142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	20.7	21.8	28.2	19.2	19.3	27.3	11.9	11.9	28.0	14.7	14.8
Incr Delay (d2), s/veh	0.2	1.1	5.6	0.6	0.4	0.4	2.3	0.4	0.4	7.1	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	4.4	0.6	1.5	1.5	2.0	3.4	3.5	2.3	6.8	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	21.7	27.5	28.8	19.6	19.7	29.6	12.3	12.3	35.1	16.8	16.7
LnGrp LOS	C	C	C	C	B	B	C	B	B	D	B	B
Approach Vol, veh/h		597			305			1056			1372	
Approach Delay, s/veh		24.6			20.8			16.8			18.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	33.3		20.2	11.1	32.4		20.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	38.0		18.0	11.0	39.0		18.0
Max Q Clear Time (g_c+I1), s	6.7	11.6		12.9	6.8	20.0		15.8
Green Ext Time (p_c), s	0.1	5.4		1.7	0.4	8.4		0.4

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	133	176	84	190	42	169	510	110	127	1187	32
Future Volume (veh/h)	8	133	176	84	190	42	169	510	110	127	1187	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	133	176	84	190	20	169	510	110	127	1187	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	327	201	266	222	519	439	212	1348	289	164	1551	42
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.12	0.47	0.47	0.09	0.44	0.44
Sat Flow, veh/h	1172	730	966	1079	1885	1598	1767	2887	620	1781	3535	95
Grp Volume(v), veh/h	8	0	309	84	190	20	169	310	310	127	596	623
Grp Sat Flow(s),veh/h/ln	1172	0	1696	1079	1885	1598	1767	1763	1744	1781	1777	1853
Q Serve(g_s), s	0.4	0.0	11.7	5.4	5.9	0.7	6.7	8.2	8.3	5.0	20.5	20.5
Cycle Q Clear(g_c), s	6.3	0.0	11.7	17.1	5.9	0.7	6.7	8.2	8.3	5.0	20.5	20.5
Prop In Lane	1.00		0.57	1.00		1.00	1.00		0.36	1.00		0.05
Lane Grp Cap(c), veh/h	327	0	467	222	519	439	212	823	814	164	780	813
V/C Ratio(X)	0.02	0.00	0.66	0.38	0.37	0.05	0.80	0.38	0.38	0.78	0.76	0.77
Avail Cap(c_a), veh/h	426	0	610	314	678	575	391	1171	1159	345	1131	1180
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	23.2	30.8	21.1	19.2	30.9	12.5	12.5	32.1	17.1	17.1
Incr Delay (d2), s/veh	0.0	0.0	1.7	1.1	0.4	0.0	6.7	0.3	0.3	7.7	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.6	1.4	2.5	0.2	3.2	3.0	3.0	2.4	7.9	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	24.9	31.8	21.5	19.3	37.6	12.7	12.8	39.8	19.0	19.0
LnGrp LOS	C	A	C	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h		317			294			789			1346	
Approach Delay, s/veh		24.9			24.3			18.1			21.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	37.7		23.9	12.7	35.7		23.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	14.0	48.0		26.0	16.0	46.0		26.0				
Max Q Clear Time (g_c+I1), s	7.0	10.3		13.7	8.7	22.5		19.1				
Green Ext Time (p_c), s	0.2	4.3		1.5	0.2	9.2		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	784	475	45	328	155	315	342	69	346	724	12
Future Volume (veh/h)	12	784	475	45	328	155	315	342	69	346	724	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	784	189	45	328	62	315	342	69	346	724	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	12	1085	484	56	1234	968	437	782	156	472	977	16
Arrive On Green	0.01	0.32	0.32	0.03	0.35	0.35	0.13	0.27	0.27	0.14	0.28	0.28
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	2929	584	3374	3492	58
Grp Volume(v), veh/h	12	784	189	45	328	62	315	204	207	346	360	376
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1750	1687	1735	1815
Q Serve(g_s), s	0.5	13.8	6.6	1.7	4.5	1.0	5.9	6.4	6.6	6.6	12.6	12.6
Cycle Q Clear(g_c), s	0.5	13.8	6.6	1.7	4.5	1.0	5.9	6.4	6.6	6.6	12.6	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.03
Lane Grp Cap(c), veh/h	12	1085	484	56	1234	968	437	471	468	472	485	508
V/C Ratio(X)	0.96	0.72	0.39	0.81	0.27	0.06	0.72	0.43	0.44	0.73	0.74	0.74
Avail Cap(c_a), veh/h	75	1650	736	159	1906	1496	766	735	730	855	775	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	20.1	17.6	32.3	15.8	14.6	28.1	20.4	20.4	27.7	22.0	22.0
Incr Delay (d2), s/veh	108.4	0.9	0.5	23.1	0.1	0.0	2.3	0.6	0.7	2.2	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.1	2.2	1.1	1.7	0.3	2.5	2.6	2.6	2.7	5.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	141.7	21.0	18.1	55.4	15.9	14.7	30.4	21.0	21.1	29.9	24.2	24.1
LnGrp LOS	F	C	B	E	B	B	C	C	C	C	C	C
Approach Vol, veh/h		985			435			726			1082	
Approach Delay, s/veh		21.9			19.8			25.1			26.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	21.9	6.1	25.7	12.5	22.8	4.5	27.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	28.0	6.0	33.0	15.0	30.0	3.0	36.0
Max Q Clear Time (g_c+I1), s	8.6	8.6	3.7	15.8	7.9	14.6	2.5	6.5
Green Ext Time (p_c), s	0.8	2.3	0.0	5.9	0.6	4.1	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	46	44	271	302	203
Future Volume (veh/h)	141	46	44	271	302	203
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	141	46	44	271	302	203
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	212	189	707	1242	1252	1061
Arrive On Green	0.12	0.12	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1781	1585	887	1856	1870	1585
Grp Volume(v), veh/h	141	46	44	271	302	203
Grp Sat Flow(s),veh/h/ln	1781	1585	887	1856	1870	1585
Q Serve(g_s), s	3.2	1.1	0.9	2.4	2.7	2.1
Cycle Q Clear(g_c), s	3.2	1.1	3.6	2.4	2.7	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	212	189	707	1242	1252	1061
V/C Ratio(X)	0.67	0.24	0.06	0.22	0.24	0.19
Avail Cap(c_a), veh/h	942	838	707	1242	1252	1061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	17.0	3.5	2.7	2.8	2.7
Incr Delay (d2), s/veh	3.6	0.7	0.2	0.4	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.4	0.1	0.5	0.5	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.5	17.7	3.6	3.1	3.2	3.1
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	187			315	505	
Approach Delay, s/veh	20.6			3.2	3.2	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		33.0		9.6		33.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		5.6		5.2		4.7
Green Ext Time (p_c), s		1.8		0.5		2.5

Intersection Summary						
HCM 6th Ctrl Delay			6.4			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	277	112	32	209	83	75	289	49	141	438	242
Future Volume (veh/h)	155	277	112	32	209	83	75	289	49	141	438	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	155	277	73	32	209	61	75	289	40	141	438	111
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	204	486	412	37	314	266	94	494	419	185	593	502
Arrive On Green	0.11	0.26	0.26	0.02	0.17	0.17	0.05	0.27	0.27	0.10	0.32	0.32
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	155	277	73	32	209	61	75	289	40	141	438	111
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	3.8	5.8	1.6	0.8	4.7	1.5	1.9	6.2	0.9	3.5	9.5	2.3
Cycle Q Clear(g_c), s	3.8	5.8	1.6	0.8	4.7	1.5	1.9	6.2	0.9	3.5	9.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	486	412	37	314	266	94	494	419	185	593	502
V/C Ratio(X)	0.76	0.57	0.18	0.86	0.67	0.23	0.80	0.58	0.10	0.76	0.74	0.22
Avail Cap(c_a), veh/h	473	911	772	199	626	530	310	1018	863	469	1191	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	14.7	13.1	22.2	17.8	16.5	21.3	14.5	12.6	19.9	13.9	11.4
Incr Delay (d2), s/veh	5.8	1.1	0.2	39.7	2.4	0.4	14.1	1.1	0.1	6.4	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.3	0.5	0.7	2.0	0.5	1.1	2.3	0.3	1.6	3.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	15.8	13.3	61.9	20.3	16.9	35.4	15.6	12.7	26.2	15.7	11.6
LnGrp LOS	C	B	B	E	C	B	D	B	B	C	B	B
Approach Vol, veh/h		505			302			404			690	
Approach Delay, s/veh		18.4			24.0			19.0			17.2	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	16.1	4.9	15.8	6.4	18.4	9.2	11.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	25.0	5.0	22.0	8.0	29.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	5.5	8.2	2.8	7.8	3.9	11.5	5.8	6.7
Green Ext Time (p_c), s	0.2	1.6	0.0	1.6	0.0	2.9	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

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	57	206	137	55	144	72	90	360	79	103	632	130
Future Vol, veh/h	57	206	137	55	144	72	90	360	79	103	632	130
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	2	2	2	4	4	2	2	2	2
Mvmt Flow	57	206	137	55	144	72	90	360	79	103	632	130

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1526	1457	632	1615	1508	360	762	0	0	439	0	0
Stage 1	838	838	-	540	540	-	-	-	-	-	-	-
Stage 2	688	619	-	1075	968	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	97	~ 130	484	83	~ 121	684	841	-	-	1121	-	-
Stage 1	364	382	-	526	521	-	-	-	-	-	-	-
Stage 2	440	480	-	266	332	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 105	484	-	~ 98	684	841	-	-	1121	-	-
Mov Cap-2 Maneuver	-	~ 105	-	-	~ 98	-	-	-	-	-	-	-
Stage 1	325	347	-	470	465	-	-	-	-	-	-	-
Stage 2	243	429	-	70	301	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.7	1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	841	-	-	-	484	-	684	1121	-	-
HCM Lane V/C Ratio	0.107	-	-	-	0.283	-	0.105	0.092	-	-
HCM Control Delay (s)	9.8	-	-	-	15.3	-	10.9	8.5	-	-
HCM Lane LOS	A	-	-	-	C	-	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2	-	0.4	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	118	98	365	698	94
Future Volume (veh/h)	88	118	98	365	698	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	88	56	98	365	698	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	144	128	122	1256	946	801
Arrive On Green	0.08	0.08	0.07	0.69	0.50	0.50
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	88	56	98	365	698	40
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	1.7	1.2	1.9	2.7	10.1	0.4
Cycle Q Clear(g_c), s	1.7	1.2	1.9	2.7	10.1	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	144	128	122	1256	946	801
V/C Ratio(X)	0.61	0.44	0.80	0.29	0.74	0.05
Avail Cap(c_a), veh/h	309	275	402	2430	1854	1571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	15.1	15.8	2.1	6.8	4.4
Incr Delay (d2), s/veh	4.1	2.3	11.4	0.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.0	0.1	2.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.5	17.5	27.2	2.2	8.0	4.4
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	144			463	738	
Approach Delay, s/veh	18.7			7.5	7.8	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		27.8		6.8	6.4	21.3
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		46.0		6.0	8.0	34.0
Max Q Clear Time (g_c+I1), s		4.7		3.7	3.9	12.1
Green Ext Time (p_c), s		2.5		0.1	0.1	5.2

Intersection Summary		
HCM 6th Ctrl Delay		8.9
HCM 6th LOS		A

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	309	0	0	276
Future Vol, veh/h	0	0	309	0	0	276
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	0	309	0	0	276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	585	309	0	0	309	0
Stage 1	309	-	-	-	-	-
Stage 2	276	-	-	-	-	-
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	473	731	-	-	1252	-
Stage 1	745	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	473	731	-	-	1252	-
Mov Cap-2 Maneuver	473	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	771	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1252	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	129	208	207	0	237	146	109	53	12	121	81	91
Future Vol, veh/h	129	208	207	0	237	146	109	53	12	121	81	91
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	129	208	207	0	237	146	109	53	12	121	81	91
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	15	16.8	14.4	13.6
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	82%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	18%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	65	129	208	207	0	237	146	121	81	91
LT Vol	109	0	129	0	0	0	0	0	121	0	0
Through Vol	0	53	0	208	0	0	237	0	0	81	0
RT Vol	0	12	0	0	207	0	0	146	0	0	91
Lane Flow Rate	109	65	129	208	207	0	237	146	121	81	91
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.275	0.153	0.291	0.44	0.397	0	0.522	0.293	0.295	0.186	0.191
Departure Headway (Hd)	9.092	8.448	8.127	7.618	6.905	7.925	7.925	7.213	8.789	8.277	7.562
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	393	422	441	472	520	0	453	496	408	432	472
Service Time	6.881	6.237	5.898	5.389	4.675	5.699	5.699	4.987	6.571	6.06	5.344
HCM Lane V/C Ratio	0.277	0.154	0.293	0.441	0.398	0	0.523	0.294	0.297	0.188	0.193
HCM Control Delay	15.3	12.8	14.2	16.3	14.2	10.7	19.1	13	15.2	13	12.1
HCM Lane LOS	C	B	B	C	B	N	C	B	C	B	B
HCM 95th-tile Q	1.1	0.5	1.2	2.2	1.9	0	3	1.2	1.2	0.7	0.7

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	540	53	41	377	35	34	4	27	18	4	100
Future Vol, veh/h	166	540	53	41	377	35	34	4	27	18	4	100
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	166	540	53	41	377	35	34	4	27	18	4	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	593	0	0	1401	1366	540	1373	1384	377
Stage 1	-	-	-	-	-	-	872	872	-	459	459	-
Stage 2	-	-	-	-	-	-	529	494	-	914	925	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	1152	-	-	978	-	-	116	146	538	121	141	663
Stage 1	-	-	-	-	-	-	343	365	-	576	561	-
Stage 2	-	-	-	-	-	-	530	543	-	323	344	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1152	-	-	978	-	-	83	120	538	97	116	663
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	120	-	97	116	-
Stage 1	-	-	-	-	-	-	294	312	-	493	537	-
Stage 2	-	-	-	-	-	-	428	520	-	259	294	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.8	46.8	18
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	83	120	538	1152	-	-	978	-	-	97	116	663
HCM Lane V/C Ratio	0.41	0.033	0.05	0.144	-	-	0.042	-	-	0.186	0.034	0.151
HCM Control Delay (s)	75.7	36	12	8.7	-	-	8.8	-	-	50.4	37.1	11.4
HCM Lane LOS	F	E	B	A	-	-	A	-	-	F	E	B
HCM 95th %tile Q(veh)	1.6	0.1	0.2	0.5	-	-	0.1	-	-	0.6	0.1	0.5

HCM 6th Signalized Intersection Summary
1: Airline Highway & Union Road

05/10/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	217	161	34	392	395	197	427	61	121	188	163
Future Volume (veh/h)	270	217	161	34	392	395	197	427	61	121	188	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	270	217	161	34	392	395	197	427	16	121	188	163
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	302	169	125	628	301	304	157	454	384	77	181	157
Arrive On Green	0.18	0.18	0.18	0.36	0.36	0.36	0.09	0.24	0.24	0.04	0.20	0.20
Sat Flow, veh/h	1697	950	705	1767	848	854	1767	1856	1572	1739	903	783
Grp Volume(v), veh/h	270	0	378	34	0	787	197	427	16	121	0	351
Grp Sat Flow(s),veh/h/ln	1697	0	1655	1767	0	1702	1767	1856	1572	1739	0	1685
Q Serve(g_s), s	14.0	0.0	16.0	1.1	0.0	32.0	8.0	20.3	0.7	4.0	0.0	18.0
Cycle Q Clear(g_c), s	14.0	0.0	16.0	1.1	0.0	32.0	8.0	20.3	0.7	4.0	0.0	18.0
Prop In Lane	1.00		0.43	1.00		0.50	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	302	0	294	628	0	605	157	454	384	77	0	337
V/C Ratio(X)	0.90	0.00	1.29	0.05	0.00	1.30	1.25	0.94	0.04	1.57	0.00	1.04
Avail Cap(c_a), veh/h	302	0	294	628	0	605	157	454	384	77	0	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	0.0	37.0	19.1	0.0	29.0	41.0	33.4	26.0	43.0	0.0	36.0
Incr Delay (d2), s/veh	27.1	0.0	151.6	0.0	0.0	147.1	155.8	28.1	0.0	307.8	0.0	60.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	18.7	0.5	0.0	37.1	10.2	12.4	0.3	8.3	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	0.0	188.6	19.1	0.0	176.1	196.8	61.4	26.0	350.8	0.0	96.2
LnGrp LOS	E	A	F	B	A	F	F	E	C	F	A	F
Approach Vol, veh/h		648			821			640			472	
Approach Delay, s/veh		136.4			169.6			102.2			161.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	26.0		20.0	12.0	22.0		36.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	22.0		16.0	8.0	18.0		32.0				
Max Q Clear Time (g_c+I1), s	6.0	22.3		18.0	10.0	20.0		34.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			143.1
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	112	16	35	73	353	39	1014	57	133	388	43
Future Volume (veh/h)	72	112	16	35	73	353	39	1014	57	133	388	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	72	112	7	35	73	128	39	1014	57	133	388	27
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	324	286	243	312	291	246	45	1497	84	170	1782	795
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.03	0.44	0.44	0.10	0.51	0.51
Sat Flow, veh/h	1163	1841	1560	1273	1870	1585	1767	3393	191	1739	3469	1547
Grp Volume(v), veh/h	72	112	7	35	73	128	39	527	544	133	388	27
Grp Sat Flow(s),veh/h/ln	1163	1841	1560	1273	1870	1585	1767	1763	1821	1739	1735	1547
Q Serve(g_s), s	2.3	2.1	0.1	1.0	1.3	2.9	0.9	9.4	9.4	2.9	2.4	0.3
Cycle Q Clear(g_c), s	3.6	2.1	0.1	3.1	1.3	2.9	0.9	9.4	9.4	2.9	2.4	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	324	286	243	312	291	246	45	778	804	170	1782	795
V/C Ratio(X)	0.22	0.39	0.03	0.11	0.25	0.52	0.87	0.68	0.68	0.78	0.22	0.03
Avail Cap(c_a), veh/h	587	703	596	599	714	605	225	1122	1159	354	2472	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	14.9	14.1	16.3	14.6	15.2	19.1	8.7	8.7	17.3	5.2	4.7
Incr Delay (d2), s/veh	0.3	0.9	0.0	0.2	0.4	1.7	36.1	1.0	1.0	7.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.0	0.3	0.5	1.0	0.8	2.6	2.7	1.4	0.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	15.8	14.1	16.5	15.0	16.9	55.2	9.8	9.8	24.9	5.3	4.7
LnGrp LOS	B	B	B	B	B	B	E	A	A	C	A	A
Approach Vol, veh/h		191			236			1110			548	
Approach Delay, s/veh		16.0			16.3			11.4			10.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	21.3		10.1	5.0	24.2		10.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	25.0		15.0	5.0	28.0		15.0				
Max Q Clear Time (g_c+I1), s	4.9	11.4		5.6	2.9	4.4		5.1				
Green Ext Time (p_c), s	0.1	6.0		0.5	0.0	2.7		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	315	186	182	693	386	327	808	50	265	558	267
Future Volume (veh/h)	309	315	186	182	693	386	327	808	50	265	558	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	309	315	68	182	693	212	327	808	50	265	558	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	430	961	429	230	978	436	448	1240	76	376	1177	365
Arrive On Green	0.12	0.27	0.27	0.13	0.28	0.28	0.13	0.25	0.25	0.11	0.23	0.23
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4878	301	3401	5025	1560
Grp Volume(v), veh/h	309	315	68	182	693	212	327	559	299	265	558	116
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1801	1700	1675	1560
Q Serve(g_s), s	5.8	4.8	2.2	6.7	11.9	7.6	6.2	10.0	10.1	5.1	6.5	4.2
Cycle Q Clear(g_c), s	5.8	4.8	2.2	6.7	11.9	7.6	6.2	10.0	10.1	5.1	6.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	430	961	429	230	978	436	448	858	458	376	1177	365
V/C Ratio(X)	0.72	0.33	0.16	0.79	0.71	0.49	0.73	0.65	0.65	0.70	0.47	0.32
Avail Cap(c_a), veh/h	764	1309	584	472	1466	654	758	1393	743	651	1925	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	19.8	18.9	28.7	22.2	20.6	28.4	22.6	22.6	29.1	22.4	21.5
Incr Delay (d2), s/veh	2.3	0.2	0.2	6.1	1.0	0.8	2.3	0.8	1.6	2.4	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.9	0.8	3.1	4.8	2.7	2.6	3.8	4.2	2.1	2.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	20.0	19.0	34.7	23.1	21.4	30.7	23.5	24.2	31.5	22.7	22.0
LnGrp LOS	C	C	B	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		692			1087			1185			939	
Approach Delay, s/veh		24.8			24.7			25.6			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	21.3	12.8	22.4	12.9	19.9	12.4	22.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	28.0	18.0	25.0	15.0	26.0	15.0	28.0
Max Q Clear Time (g_c+I1), s	7.1	12.1	8.7	6.8	8.2	8.5	7.8	13.9
Green Ext Time (p_c), s	0.5	5.2	0.3	2.1	0.7	4.0	0.6	4.8

Intersection Summary		
HCM 6th Ctrl Delay		25.1
HCM 6th LOS		C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	337	205	1307	812	137
Future Volume (veh/h)	126	337	205	1307	812	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	126	133	205	1307	812	137
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	257	228	369	3150	1711	287
Arrive On Green	0.15	0.15	0.11	0.62	0.40	0.40
Sat Flow, veh/h	1753	1560	3428	5233	4463	720
Grp Volume(v), veh/h	126	133	205	1307	626	323
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1696
Q Serve(g_s), s	2.3	2.7	2.0	4.5	4.8	4.9
Cycle Q Clear(g_c), s	2.3	2.7	2.0	4.5	4.8	4.9
Prop In Lane	1.00	1.00	1.00			0.42
Lane Grp Cap(c), veh/h	257	228	369	3150	1323	675
V/C Ratio(X)	0.49	0.58	0.55	0.41	0.47	0.48
Avail Cap(c_a), veh/h	1372	1221	1093	6608	2890	1475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	13.7	14.6	3.3	7.7	7.7
Incr Delay (d2), s/veh	1.5	2.3	1.3	0.1	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	0.7	0.5	1.2	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.0	16.1	15.9	3.4	8.0	8.2
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	259			1512	949	
Approach Delay, s/veh	15.6			5.1	8.1	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.4		9.0	7.7	17.7
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		45.0		27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s		6.5		4.7	4.0	6.9
Green Ext Time (p_c), s		12.8		0.8	0.4	6.9

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	161	122	138	355	373	276	1372	82	139	514	40
Future Volume (veh/h)	60	161	122	138	355	373	276	1372	82	139	514	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	60	161	122	138	355	141	276	1372	55	139	514	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	75	283	202	174	376	319	328	1464	653	163	1128	503
Arrive On Green	0.04	0.15	0.15	0.10	0.20	0.20	0.19	0.42	0.42	0.09	0.32	0.32
Sat Flow, veh/h	1739	1936	1377	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	60	143	140	138	355	141	276	1372	55	139	514	14
Grp Sat Flow(s),veh/h/ln	1739	1735	1578	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	2.2	5.0	5.4	4.9	12.1	5.0	9.7	24.1	1.4	5.0	7.5	0.4
Cycle Q Clear(g_c), s	2.2	5.0	5.4	4.9	12.1	5.0	9.7	24.1	1.4	5.0	7.5	0.4
Prop In Lane	1.00		0.87	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	254	231	174	376	319	328	1464	653	163	1128	503
V/C Ratio(X)	0.80	0.56	0.61	0.79	0.94	0.44	0.84	0.94	0.08	0.85	0.46	0.03
Avail Cap(c_a), veh/h	81	254	231	193	376	319	438	1473	657	163	1128	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	25.7	25.8	28.5	25.4	22.6	25.4	18.1	11.4	28.9	17.4	15.0
Incr Delay (d2), s/veh	40.3	2.9	4.4	18.2	32.1	1.0	10.7	11.6	0.1	33.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.1	2.2	2.9	8.4	1.9	4.8	10.9	0.4	3.5	2.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	28.5	30.3	46.7	57.5	23.6	36.1	29.7	11.5	62.0	17.7	15.0
LnGrp LOS	E	C	C	D	E	C	D	C	B	E	B	B
Approach Vol, veh/h		343			634			1703			667	
Approach Delay, s/veh		36.7			47.6			30.1			26.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	30.8	10.3	13.5	16.0	24.8	6.8	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	27.0	7.0	9.0	16.0	17.0	3.0	13.0
Max Q Clear Time (g_c+I1), s	7.0	26.1	6.9	7.4	11.7	9.5	4.2	14.1
Green Ext Time (p_c), s	0.0	0.8	0.0	0.3	0.3	2.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
6: SR 25 & Meridan Street

05/10/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	308	167	204	364	165	184	1232	56	60	543	8
Future Volume (veh/h)	40	308	167	204	364	165	184	1232	56	60	543	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	40	308	167	204	364	165	184	1232	56	60	543	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	313	822	435	338	888	396	268	1476	67	76	1382	20
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.08	0.43	0.43	0.04	0.40	0.40
Sat Flow, veh/h	867	2227	1179	926	2408	1074	3401	3407	155	1725	3471	51
Grp Volume(v), veh/h	40	242	233	204	269	260	184	632	656	60	269	282
Grp Sat Flow(s),veh/h/ln	867	1763	1643	926	1791	1692	1700	1749	1813	1725	1721	1802
Q Serve(g_s), s	2.8	7.8	8.1	16.2	8.7	8.9	4.1	25.0	25.0	2.7	8.7	8.7
Cycle Q Clear(g_c), s	11.7	7.8	8.1	24.3	8.7	8.9	4.1	25.0	25.0	2.7	8.7	8.7
Prop In Lane	1.00		0.72	1.00		0.64	1.00		0.09	1.00		0.03
Lane Grp Cap(c), veh/h	313	650	606	338	661	624	268	758	785	76	685	718
V/C Ratio(X)	0.13	0.37	0.38	0.60	0.41	0.42	0.69	0.83	0.84	0.79	0.39	0.39
Avail Cap(c_a), veh/h	360	747	696	388	759	717	393	875	907	133	795	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	18.0	18.1	27.0	18.3	18.3	34.9	19.6	19.6	36.9	16.7	16.7
Incr Delay (d2), s/veh	0.2	0.4	0.4	2.1	0.4	0.4	3.1	6.2	6.1	16.8	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.0	3.6	3.5	3.4	1.8	10.6	11.0	1.5	3.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	18.3	18.5	29.1	18.7	18.8	38.0	25.8	25.7	53.7	17.1	17.1
LnGrp LOS	C	B	B	C	B	B	D	C	C	D	B	B
Approach Vol, veh/h		515			733			1472			611	
Approach Delay, s/veh		18.8			21.6			27.3			20.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	37.8		32.7	10.1	35.0		32.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	39.0		33.0	9.0	36.0		33.0
Max Q Clear Time (g_c+I1), s	4.7	27.0		13.7	6.1	10.7		26.3
Green Ext Time (p_c), s	0.0	6.7		3.1	0.2	3.5		2.4

Intersection Summary		
HCM 6th Ctrl Delay		23.5
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	219	92	112	247	178	168	1259	219	46	387	4
Future Volume (veh/h)	32	219	92	112	247	178	168	1259	219	46	387	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	219	92	112	247	71	168	1259	219	46	387	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	285	362	152	241	550	466	208	1579	272	56	1512	16
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.12	0.53	0.53	0.03	0.44	0.44
Sat Flow, veh/h	1053	1241	521	1077	1885	1598	1767	3006	519	1697	3432	35
Grp Volume(v), veh/h	32	0	311	112	247	71	168	734	744	46	191	200
Grp Sat Flow(s),veh/h/ln	1053	0	1762	1077	1885	1598	1767	1763	1762	1697	1692	1775
Q Serve(g_s), s	2.0	0.0	12.2	8.0	8.6	2.6	7.4	27.2	27.8	2.2	5.7	5.7
Cycle Q Clear(g_c), s	10.6	0.0	12.2	20.2	8.6	2.6	7.4	27.2	27.8	2.2	5.7	5.7
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.29	1.00		0.02
Lane Grp Cap(c), veh/h	285	0	514	241	550	466	208	926	926	56	746	782
V/C Ratio(X)	0.11	0.00	0.60	0.47	0.45	0.15	0.81	0.79	0.80	0.81	0.26	0.26
Avail Cap(c_a), veh/h	358	0	637	316	682	578	375	1187	1187	106	887	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	24.4	33.1	23.1	21.0	34.5	15.5	15.6	38.5	14.1	14.1
Incr Delay (d2), s/veh	0.2	0.0	1.2	1.4	0.6	0.1	7.2	2.9	3.2	23.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.0	2.1	3.7	1.0	3.5	10.4	10.7	1.3	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	25.6	34.5	23.7	21.2	41.7	18.4	18.8	62.1	14.3	14.3
LnGrp LOS	C	A	C	C	C	C	D	B	B	E	B	B
Approach Vol, veh/h		343			430			1646			437	
Approach Delay, s/veh		25.8			26.1			21.0			19.3	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	46.1		27.4	13.5	39.3		27.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	54.0		29.0	17.0	42.0		29.0				
Max Q Clear Time (g_c+I1), s	4.2	29.8		14.2	9.4	7.7		22.2				
Green Ext Time (p_c), s	0.0	12.3		1.8	0.3	2.5		1.2				

Intersection Summary		
HCM 6th Ctrl Delay		22.1
HCM 6th LOS		C

HCM 6th Signalized Intersection Summary
8: San Felipe Road & SR 25

05/10/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	268	182	37	628	510	330	674	26	115	365	4
Future Volume (veh/h)	16	268	182	37	628	510	330	674	26	115	365	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	268	60	37	628	191	330	674	26	115	365	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	17	957	427	44	1065	836	510	1053	41	204	760	8
Arrive On Green	0.01	0.29	0.29	0.02	0.30	0.30	0.15	0.30	0.30	0.06	0.22	0.22
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3461	133	3374	3515	38
Grp Volume(v), veh/h	16	268	60	37	628	191	330	343	357	115	180	189
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1832	1687	1735	1819
Q Serve(g_s), s	0.5	3.0	1.5	1.0	7.4	2.5	4.5	8.3	8.3	1.6	4.5	4.5
Cycle Q Clear(g_c), s	0.5	3.0	1.5	1.0	7.4	2.5	4.5	8.3	8.3	1.6	4.5	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	17	957	427	44	1065	836	510	537	557	204	375	393
V/C Ratio(X)	0.96	0.28	0.14	0.85	0.59	0.23	0.65	0.64	0.64	0.56	0.48	0.48
Avail Cap(c_a), veh/h	171	2049	914	290	2386	1873	1325	1327	1379	618	953	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	13.7	13.1	23.9	14.6	12.9	19.7	14.8	14.8	22.5	16.8	16.9
Incr Delay (d2), s/veh	93.2	0.2	0.1	33.5	0.5	0.1	1.4	1.3	1.2	2.4	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.0	0.4	0.8	2.6	0.7	1.7	3.0	3.1	0.7	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.5	13.8	13.2	57.4	15.2	13.1	21.1	16.0	16.0	24.9	17.8	17.8
LnGrp LOS	F	B	B	E	B	B	C	B	B	C	B	B
Approach Vol, veh/h		344			856			1030			484	
Approach Delay, s/veh		18.5			16.5			17.6			19.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	19.0	5.2	18.0	11.3	14.6	4.5	18.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	37.0	8.0	30.0	19.0	27.0	5.0	33.0
Max Q Clear Time (g_c+I1), s	3.6	10.3	3.0	5.0	6.5	6.5	2.5	9.4
Green Ext Time (p_c), s	0.1	4.7	0.0	1.9	0.9	2.1	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	176	45	70	376	216	85
Future Volume (veh/h)	176	45	70	376	216	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1811	1811	1811
Adj Flow Rate, veh/h	176	45	70	376	216	85
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	6	6	6	6
Cap, veh/h	252	224	799	1192	1192	1010
Arrive On Green	0.14	0.14	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1781	1585	1044	1811	1811	1535
Grp Volume(v), veh/h	176	45	70	376	216	85
Grp Sat Flow(s),veh/h/ln	1781	1585	1044	1811	1811	1535
Q Serve(g_s), s	4.2	1.1	1.3	4.0	2.1	0.9
Cycle Q Clear(g_c), s	4.2	1.1	3.3	4.0	2.1	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	252	224	799	1192	1192	1010
V/C Ratio(X)	0.70	0.20	0.09	0.32	0.18	0.08
Avail Cap(c_a), veh/h	854	760	799	1192	1192	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	17.0	3.6	3.3	3.0	2.8
Incr Delay (d2), s/veh	3.5	0.4	0.2	0.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.4	0.2	0.9	0.4	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	17.5	3.8	4.0	3.3	2.9
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	221			446	301	
Approach Delay, s/veh	21.0			4.0	3.2	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		34.0		10.8		34.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		29.5		21.5		29.5
Max Q Clear Time (g_c+I1), s		6.0		6.2		4.1
Green Ext Time (p_c), s		2.7		0.5		1.5

Intersection Summary		
HCM 6th Ctrl Delay		7.6
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	130	57	39	259	117	97	485	20	73	231	223
Future Volume (veh/h)	229	130	57	39	259	117	97	485	20	73	231	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	229	130	34	39	259	76	97	485	16	73	231	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	283	585	496	46	328	278	123	567	481	90	533	451
Arrive On Green	0.16	0.31	0.31	0.03	0.18	0.18	0.07	0.31	0.31	0.05	0.29	0.29
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	229	130	34	39	259	76	97	485	16	73	231	86
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	6.5	2.7	0.8	1.2	7.2	2.2	2.9	13.4	0.4	2.2	5.5	2.2
Cycle Q Clear(g_c), s	6.5	2.7	0.8	1.2	7.2	2.2	2.9	13.4	0.4	2.2	5.5	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	585	496	46	328	278	123	567	481	90	533	451
V/C Ratio(X)	0.81	0.22	0.07	0.85	0.79	0.27	0.79	0.86	0.03	0.81	0.43	0.19
Avail Cap(c_a), veh/h	339	585	496	164	380	322	259	679	576	97	533	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	13.7	13.0	25.9	21.0	18.9	24.3	17.2	12.7	25.0	15.2	14.1
Incr Delay (d2), s/veh	11.7	0.2	0.1	32.1	9.4	0.5	10.5	9.1	0.0	35.9	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.1	0.3	0.9	3.7	0.8	1.5	6.3	0.1	1.8	2.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	13.9	13.1	57.9	30.4	19.5	34.8	26.2	12.7	60.9	15.8	14.3
LnGrp LOS	C	B	B	E	C	B	C	C	B	E	B	B
Approach Vol, veh/h		393			374			598			390	
Approach Delay, s/veh		25.2			31.0			27.3			23.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	20.7	5.4	20.4	7.8	19.7	12.3	13.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	20.0	5.0	16.0	8.0	15.0	10.0	11.0				
Max Q Clear Time (g_c+I1), s	4.2	15.4	3.2	4.7	4.9	7.5	8.5	9.2				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.5	0.1	0.9	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			26.9									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	177.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	85	63	68	179	90	111	691	32	42	398	87
Future Vol, veh/h	110	85	63	68	179	90	111	691	32	42	398	87
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	85	63	68	179	90	111	691	32	42	398	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1546	1427	398	1513	1482	691	485	0	0	723	0	0
Stage 1	482	482	-	913	913	-	-	-	-	-	-	-
Stage 2	1064	945	-	600	569	-	-	-	-	-	-	-
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	~ 93	135	652	98	~ 125	445	1078	-	-	879	-	-
Stage 1	565	553	-	328	352	-	-	-	-	-	-	-
Stage 2	270	340	-	488	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	115	652	~ 32	~ 107	445	1078	-	-	879	-	-
Mov Cap-2 Maneuver	-	115	-	~ 32	~ 107	-	-	-	-	-	-	-
Stage 1	507	526	-	294	316	-	-	-	-	-	-	-
Stage 2	~ 84	305	-	352	482	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 1023.9	1.2	0.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1078	-	-	-	652	65	445	879	-	-
HCM Lane V/C Ratio	0.103	-	-	-	0.097	3.8	0.202	0.048	-	-
HCM Control Delay (s)	8.7	-	-	-	11.1	$ 1391.5	15.1	9.3	-	-
HCM Lane LOS	A	-	-	-	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	26.3	0.7	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	110	176	666	397	105
Future Volume (veh/h)	102	110	176	666	397	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	102	35	176	666	397	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	154	137	232	1147	626	531
Arrive On Green	0.09	0.09	0.13	0.62	0.35	0.35
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	102	35	176	666	397	30
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.5	0.6	2.7	5.9	5.1	0.4
Cycle Q Clear(g_c), s	1.5	0.6	2.7	5.9	5.1	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	154	137	232	1147	626	531
V/C Ratio(X)	0.66	0.26	0.76	0.58	0.63	0.06
Avail Cap(c_a), veh/h	576	513	762	2867	1771	1501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	11.8	11.5	3.1	7.6	6.0
Incr Delay (d2), s/veh	4.8	1.0	5.0	0.5	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.1	0.2	1.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	12.7	16.6	3.5	8.6	6.1
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	137			842	427	
Approach Delay, s/veh	15.9			6.3	8.5	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.2		6.4	7.7	13.5
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	12.0	27.0
Max Q Clear Time (g_c+I1), s		7.9		3.5	4.7	7.1
Green Ext Time (p_c), s		5.3		0.1	0.3	2.5

Intersection Summary		
HCM 6th Ctrl Delay		7.9
HCM 6th LOS		A

Intersection						
Int Delay, s/veh	1.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	68	301	7	24	253
Future Vol, veh/h	19	68	301	7	24	253
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	19	68	301	7	24	253

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	606	305	0	0	308	0
Stage 1	305	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	460	735	-	-	1230	-
Stage 1	748	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	449	735	-	-	1230	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1230	-
HCM Lane V/C Ratio	-	-	0.135	0.02	-
HCM Control Delay (s)	-	-	11.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	133	200	100	4	199	145	183	117	8	126	35	111
Future Vol, veh/h	133	200	100	4	199	145	183	117	8	126	35	111
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	133	200	100	4	199	145	183	117	8	126	35	111
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	15.2	15.7	16	14.1
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	94%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	6%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	125	133	200	100	4	199	145	126	35	111
LT Vol	183	0	133	0	0	4	0	0	126	0	0
Through Vol	0	117	0	200	0	0	199	0	0	35	0
RT Vol	0	8	0	0	100	0	0	145	0	0	111
Lane Flow Rate	183	125	133	200	100	4	199	145	126	35	111
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.431	0.276	0.313	0.443	0.202	0.01	0.451	0.3	0.311	0.082	0.237
Departure Headway (Hd)	8.483	7.939	8.477	7.968	7.255	8.663	8.153	7.439	8.894	8.387	7.678
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	451	423	450	492	412	440	481	403	426	465
Service Time	6.26	5.716	6.255	5.745	5.032	6.444	5.934	5.22	6.678	6.171	5.462
HCM Lane V/C Ratio	0.433	0.277	0.314	0.444	0.203	0.01	0.452	0.301	0.313	0.082	0.239
HCM Control Delay	17.6	13.7	15.1	17	11.9	11.5	17.5	13.4	15.7	11.9	12.9
HCM Lane LOS	C	B	C	C	B	B	C	B	C	B	B
HCM 95th-tile Q	2.1	1.1	1.3	2.2	0.7	0	2.3	1.2	1.3	0.3	0.9

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	331	10	32	472	17	45	8	51	39	4	147
Future Vol, veh/h	45	331	10	32	472	17	45	8	51	39	4	147
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	45	331	10	32	472	17	45	8	51	39	4	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	341	0	0	1041	974	331	992	967	472
Stage 1	-	-	-	-	-	-	421	421	-	536	536	-
Stage 2	-	-	-	-	-	-	620	553	-	456	431	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1049	-	-	1202	-	-	205	249	704	225	254	592
Stage 1	-	-	-	-	-	-	604	584	-	529	523	-
Stage 2	-	-	-	-	-	-	470	509	-	584	583	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	1202	-	-	144	232	704	193	236	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	232	-	193	236	-
Stage 1	-	-	-	-	-	-	578	559	-	506	509	-
Stage 2	-	-	-	-	-	-	341	495	-	511	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	24.5	16.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	144	232	704	1049	-	-	1202	-	-	193	236	592
HCM Lane V/C Ratio	0.313	0.034	0.072	0.043	-	-	0.027	-	-	0.202	0.017	0.248
HCM Control Delay (s)	41	21.1	10.5	8.6	-	-	8.1	-	-	28.3	20.5	13.1
HCM Lane LOS	E	C	B	A	-	-	A	-	-	D	C	B
HCM 95th %tile Q(veh)	1.2	0.1	0.2	0.1	-	-	0.1	-	-	0.7	0.1	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	397	234	29	164	206	175	337	18	329	513	249
Future Volume (veh/h)	265	397	234	29	164	206	175	337	18	329	513	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	265	397	234	29	164	206	175	337	6	329	513	249
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	459	284	167	259	110	138	139	436	370	339	413	200
Arrive On Green	0.26	0.26	0.26	0.14	0.14	0.14	0.08	0.23	0.23	0.19	0.34	0.34
Sat Flow, veh/h	1795	1112	655	1795	759	954	1781	1870	1585	1795	1199	582
Grp Volume(v), veh/h	265	0	631	29	0	370	175	337	6	329	0	762
Grp Sat Flow(s),veh/h/ln	1795	0	1767	1795	0	1713	1781	1870	1585	1795	0	1780
Q Serve(g_s), s	11.6	0.0	23.0	1.3	0.0	13.0	7.0	15.2	0.3	16.4	0.0	31.0
Cycle Q Clear(g_c), s	11.6	0.0	23.0	1.3	0.0	13.0	7.0	15.2	0.3	16.4	0.0	31.0
Prop In Lane	1.00		0.37	1.00		0.56	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	459	0	452	259	0	248	139	436	370	339	0	613
V/C Ratio(X)	0.58	0.00	1.40	0.11	0.00	1.49	1.26	0.77	0.02	0.97	0.00	1.24
Avail Cap(c_a), veh/h	459	0	452	259	0	248	139	436	370	339	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	33.5	33.5	0.0	38.5	41.5	32.3	26.6	36.2	0.0	29.5
Incr Delay (d2), s/veh	1.8	0.0	191.8	0.2	0.0	242.9	163.6	8.3	0.0	40.8	0.0	122.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	33.6	0.6	0.0	22.0	9.3	7.7	0.1	10.8	0.0	33.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	225.3	33.7	0.0	281.4	205.1	40.6	26.6	77.0	0.0	152.0
LnGrp LOS	C	A	F	C	A	F	F	D	C	E	A	F
Approach Vol, veh/h		896			399			518			1091	
Approach Delay, s/veh		167.8			263.4			96.0			129.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.0	25.0		27.0	11.0	35.0		17.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	17.0	21.0		23.0	7.0	31.0		13.0
Max Q Clear Time (g_c+I1), s	18.4	17.2		25.0	9.0	33.0		15.0
Green Ext Time (p_c), s	0.0	0.7		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			153.7
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	77	49	25	97	269	24	697	42	257	1061	129
Future Volume (veh/h)	98	77	49	25	97	269	24	697	42	257	1061	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	98	77	18	25	97	77	24	697	42	257	1061	97
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	352	336	285	378	338	287	26	1079	65	337	1755	783
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.32	0.32	0.19	0.49	0.49
Sat Flow, veh/h	1201	1856	1572	1301	1870	1585	1781	3405	205	1795	3582	1598
Grp Volume(v), veh/h	98	77	18	25	97	77	24	363	376	257	1061	97
Grp Sat Flow(s),veh/h/ln	1201	1856	1572	1301	1870	1585	1781	1777	1833	1795	1791	1598
Q Serve(g_s), s	2.9	1.4	0.4	0.6	1.7	1.6	0.5	6.7	6.7	5.2	8.2	1.3
Cycle Q Clear(g_c), s	4.6	1.4	0.4	2.0	1.7	1.6	0.5	6.7	6.7	5.2	8.2	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	352	336	285	378	338	287	26	563	581	337	1755	783
V/C Ratio(X)	0.28	0.23	0.06	0.07	0.29	0.27	0.91	0.65	0.65	0.76	0.60	0.12
Avail Cap(c_a), veh/h	544	632	535	585	637	540	140	884	912	752	3002	1339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	13.4	13.0	14.2	13.5	13.5	18.8	11.2	11.2	14.7	7.1	5.3
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.1	0.5	0.5	60.1	1.2	1.2	3.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.5	0.1	0.2	0.6	0.5	0.6	2.2	2.3	2.1	2.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	13.7	13.0	14.3	14.0	14.0	78.9	12.4	12.4	18.3	7.4	5.4
LnGrp LOS	B	B	B	B	B	B	E	B	B	B	A	A
Approach Vol, veh/h		193			199			763			1415	
Approach Delay, s/veh		14.8			14.0			14.5			9.2	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	16.1		10.9	4.6	22.7		10.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	19.0		13.0	3.0	32.0		13.0
Max Q Clear Time (g_c+I1), s	7.2	8.7		6.6	2.5	10.2		4.0
Green Ext Time (p_c), s	0.5	3.4		0.4	0.0	8.5		0.5

Intersection Summary			
HCM 6th Ctrl Delay			11.6
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	535	245	153	474	239	376	636	108	455	1167	279
Future Volume (veh/h)	286	535	245	153	474	239	376	636	108	455	1167	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	286	535	107	153	474	140	376	636	108	455	1167	130
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	392	734	327	194	718	320	493	1333	223	586	1683	523
Arrive On Green	0.11	0.20	0.20	0.11	0.20	0.20	0.14	0.30	0.30	0.17	0.33	0.33
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4439	744	3483	5147	1598
Grp Volume(v), veh/h	286	535	107	153	474	140	376	490	254	455	1167	130
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1751	1742	1716	1598
Q Serve(g_s), s	5.8	10.2	4.2	6.1	8.9	5.6	7.6	8.5	8.7	9.2	14.5	4.4
Cycle Q Clear(g_c), s	5.8	10.2	4.2	6.1	8.9	5.6	7.6	8.5	8.7	9.2	14.5	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	392	734	327	194	718	320	493	1031	526	586	1683	523
V/C Ratio(X)	0.73	0.73	0.33	0.79	0.66	0.44	0.76	0.48	0.48	0.78	0.69	0.25
Avail Cap(c_a), veh/h	618	1076	480	368	1174	523	761	1265	646	951	2178	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	27.2	24.8	31.8	27.0	25.7	30.3	20.9	21.0	29.2	21.4	18.1
Incr Delay (d2), s/veh	2.6	1.4	0.6	6.9	1.0	0.9	2.5	0.3	0.7	2.3	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.3	1.6	2.9	3.8	2.1	3.2	3.3	3.5	3.9	5.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	28.6	25.4	38.8	28.0	26.6	32.8	21.3	21.7	31.4	22.1	18.3
LnGrp LOS	C	C	C	D	C	C	C	C	C	C	C	B
Approach Vol, veh/h		928			767			1120			1752	
Approach Delay, s/veh		29.9			29.9			25.2			24.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	26.0	11.9	19.0	14.4	28.0	12.2	18.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	27.0	15.0	22.0	16.0	31.0	13.0	24.0
Max Q Clear Time (g_c+I1), s	11.2	10.7	8.1	12.2	9.6	16.5	7.8	10.9
Green Ext Time (p_c), s	1.2	4.5	0.2	2.8	0.8	7.5	0.5	3.0

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	182	403	77	1003	1506	175
Future Volume (veh/h)	182	403	77	1003	1506	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	182	195	77	1003	1506	175
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	327	291	143	3279	2360	274
Arrive On Green	0.18	0.18	0.04	0.64	0.50	0.50
Sat Flow, veh/h	1810	1610	3483	5316	4845	543
Grp Volume(v), veh/h	182	195	77	1003	1105	576
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1787
Q Serve(g_s), s	4.0	5.0	1.0	3.9	10.3	10.3
Cycle Q Clear(g_c), s	4.0	5.0	1.0	3.9	10.3	10.3
Prop In Lane	1.00	1.00	1.00			0.30
Lane Grp Cap(c), veh/h	327	291	143	3279	1732	902
V/C Ratio(X)	0.56	0.67	0.54	0.31	0.64	0.64
Avail Cap(c_a), veh/h	908	808	318	4107	2112	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	16.8	20.6	3.6	7.9	7.9
Incr Delay (d2), s/veh	1.5	2.7	3.1	0.1	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.5	0.4	0.7	2.7	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.9	19.4	23.7	3.6	8.4	8.8
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	377			1080	1681	
Approach Delay, s/veh	18.7			5.1	8.5	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.9		11.9	5.8	26.1
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		35.0		22.0	4.0	27.0
Max Q Clear Time (g_c+I1), s		5.9		7.0	3.0	12.3
Green Ext Time (p_c), s		8.3		1.0	0.0	9.8
Intersection Summary						
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	389	313	123	291	163	196	750	214	313	1236	84
Future Volume (veh/h)	84	389	313	123	291	163	196	750	214	313	1236	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	84	389	313	123	291	61	196	750	122	313	1236	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	108	385	306	155	429	364	234	1162	518	354	1396	623
Arrive On Green	0.06	0.20	0.20	0.09	0.23	0.23	0.13	0.32	0.32	0.20	0.39	0.39
Sat Flow, veh/h	1810	1910	1521	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	84	367	335	123	291	61	196	750	122	313	1236	33
Grp Sat Flow(s),veh/h/ln	1810	1805	1626	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	3.9	17.0	17.0	5.7	11.9	2.6	9.0	15.1	4.7	14.4	27.3	1.1
Cycle Q Clear(g_c), s	3.9	17.0	17.0	5.7	11.9	2.6	9.0	15.1	4.7	14.4	27.3	1.1
Prop In Lane	1.00		0.94	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	363	327	155	429	364	234	1162	518	354	1396	623
V/C Ratio(X)	0.78	1.01	1.02	0.79	0.68	0.17	0.84	0.65	0.24	0.89	0.89	0.05
Avail Cap(c_a), veh/h	129	363	327	191	447	378	276	1188	530	422	1473	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	33.7	33.7	37.8	29.8	26.2	35.9	24.4	20.9	32.9	23.9	15.9
Incr Delay (d2), s/veh	21.7	49.9	55.5	16.8	3.9	0.2	17.5	1.2	0.2	17.5	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	12.2	11.5	3.2	5.7	1.0	5.0	6.3	1.7	7.8	12.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	83.7	89.2	54.6	33.7	26.4	53.4	25.5	21.1	50.4	30.5	15.9
LnGrp LOS	E	F	F	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h		786			475			1068			1582	
Approach Delay, s/veh		83.6			38.2			30.1			34.1	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	31.4	11.3	21.0	15.0	37.2	9.0	23.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	28.0	9.0	17.0	13.0	35.0	6.0	20.0
Max Q Clear Time (g_c+I1), s	16.4	17.1	7.7	19.0	11.0	29.3	5.9	13.9
Green Ext Time (p_c), s	0.3	4.2	0.0	0.0	0.1	3.8	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	249	296	40	164	101	272	760	44	137	1234	36
Future Volume (veh/h)	52	249	296	40	164	101	272	760	44	137	1234	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	52	249	296	40	164	101	272	760	44	137	1234	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	319	448	400	180	545	318	384	1589	92	177	1608	47
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.11	0.47	0.47	0.10	0.45	0.45
Sat Flow, veh/h	1114	1777	1585	862	2160	1260	3456	3414	198	1795	3554	104
Grp Volume(v), veh/h	52	249	296	40	133	132	272	395	409	137	622	648
Grp Sat Flow(s),veh/h/ln	1114	1777	1585	862	1777	1644	1728	1777	1835	1795	1791	1867
Q Serve(g_s), s	2.6	7.9	11.2	2.9	4.0	4.2	4.9	10.0	10.0	4.9	19.0	19.0
Cycle Q Clear(g_c), s	6.8	7.9	11.2	14.1	4.0	4.2	4.9	10.0	10.0	4.9	19.0	19.0
Prop In Lane	1.00		1.00	1.00		0.77	1.00		0.11	1.00		0.06
Lane Grp Cap(c), veh/h	319	448	400	180	448	414	384	827	854	177	810	845
V/C Ratio(X)	0.16	0.56	0.74	0.22	0.30	0.32	0.71	0.48	0.48	0.78	0.77	0.77
Avail Cap(c_a), veh/h	346	491	438	201	491	454	583	1036	1070	331	1072	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	21.2	22.4	28.9	19.7	19.8	27.9	12.0	12.0	28.7	15.0	15.0
Incr Delay (d2), s/veh	0.2	1.1	6.0	0.6	0.4	0.4	2.4	0.4	0.4	7.1	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.2	4.5	0.6	1.6	1.6	2.1	3.6	3.7	2.3	7.2	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	22.3	28.4	29.5	20.1	20.2	30.3	12.4	12.4	35.8	17.4	17.3
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		597			305			1076			1407	
Approach Delay, s/veh		25.4			21.4			16.9			19.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	34.3		20.4	11.2	33.5		20.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	38.0		18.0	11.0	39.0		18.0				
Max Q Clear Time (g_c+I1), s	6.9	12.0		13.2	6.9	21.0		16.1				
Green Ext Time (p_c), s	0.1	5.5		1.6	0.4	8.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			19.8									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	133	178	84	190	44	170	529	110	131	1220	32
Future Volume (veh/h)	8	133	178	84	190	44	170	529	110	131	1220	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	133	178	84	190	22	170	529	110	131	1220	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	323	199	267	217	518	439	212	1366	283	168	1571	41
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.12	0.47	0.47	0.09	0.44	0.44
Sat Flow, veh/h	1170	725	971	1077	1885	1598	1767	2908	602	1781	3538	93
Grp Volume(v), veh/h	8	0	311	84	190	22	170	320	319	131	613	639
Grp Sat Flow(s),veh/h/ln	1170	0	1696	1077	1885	1598	1767	1763	1747	1781	1777	1854
Q Serve(g_s), s	0.4	0.0	12.1	5.6	6.1	0.8	7.0	8.8	8.8	5.4	21.8	21.8
Cycle Q Clear(g_c), s	6.5	0.0	12.1	17.7	6.1	0.8	7.0	8.8	8.8	5.4	21.8	21.8
Prop In Lane	1.00		0.57	1.00		1.00	1.00		0.34	1.00		0.05
Lane Grp Cap(c), veh/h	323	0	466	217	518	439	212	828	821	168	789	823
V/C Ratio(X)	0.02	0.00	0.67	0.39	0.37	0.05	0.80	0.39	0.39	0.78	0.78	0.78
Avail Cap(c_a), veh/h	409	0	591	297	657	557	379	1111	1101	358	1096	1144
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	24.0	31.9	21.8	19.9	31.9	12.8	12.8	33.0	17.6	17.6
Incr Delay (d2), s/veh	0.0	0.0	2.0	1.1	0.4	0.0	6.9	0.3	0.3	7.6	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.9	1.5	2.6	0.3	3.3	3.2	3.2	2.6	8.6	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	0.0	26.0	33.0	22.2	19.9	38.8	13.1	13.1	40.6	20.0	19.9
LnGrp LOS	C	A	C	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h		319			296			809			1383	
Approach Delay, s/veh		25.9			25.1			18.5			21.9	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	39.0		24.5	13.0	37.1		24.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	15.0	47.0		26.0	16.0	46.0		26.0
Max Q Clear Time (g_c+I1), s	7.4	10.8		14.1	9.0	23.8		19.7
Green Ext Time (p_c), s	0.2	4.5		1.5	0.2	9.3		0.8

Intersection Summary			
HCM 6th Ctrl Delay			21.7
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	817	475	45	347	158	315	342	69	351	724	12
Future Volume (veh/h)	12	817	475	45	347	158	315	342	69	351	724	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	817	189	45	347	65	315	342	69	351	724	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	12	1117	498	56	1268	995	434	767	153	474	964	16
Arrive On Green	0.01	0.33	0.33	0.03	0.36	0.36	0.13	0.26	0.26	0.14	0.28	0.28
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	2929	584	3374	3492	58
Grp Volume(v), veh/h	12	817	189	45	347	65	315	204	207	351	360	376
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1750	1687	1735	1815
Q Serve(g_s), s	0.5	14.7	6.6	1.7	4.8	1.1	6.1	6.6	6.8	6.8	13.0	13.0
Cycle Q Clear(g_c), s	0.5	14.7	6.6	1.7	4.8	1.1	6.1	6.6	6.8	6.8	13.0	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.03
Lane Grp Cap(c), veh/h	12	1117	498	56	1268	995	434	462	459	474	479	501
V/C Ratio(X)	0.96	0.73	0.38	0.81	0.27	0.07	0.73	0.44	0.45	0.74	0.75	0.75
Avail Cap(c_a), veh/h	74	1663	742	156	1916	1504	749	694	689	836	733	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	20.2	17.5	33.0	15.7	14.5	28.8	21.1	21.2	28.3	22.7	22.7
Incr Delay (d2), s/veh	107.8	0.9	0.5	22.9	0.1	0.0	2.3	0.7	0.7	2.3	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.4	2.2	1.1	1.8	0.3	2.5	2.7	2.7	2.8	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	141.8	21.1	18.0	56.0	15.8	14.6	31.2	21.8	21.9	30.6	25.1	25.0
LnGrp LOS	F	C	B	E	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1018			457			726			1087	
Approach Delay, s/veh		22.0			19.6			25.9			26.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	22.0	6.2	26.8	12.7	22.9	4.5	28.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	27.0	6.0	34.0	15.0	29.0	3.0	37.0
Max Q Clear Time (g_c+I1), s	8.8	8.8	3.7	16.7	8.1	15.0	2.5	6.8
Green Ext Time (p_c), s	0.8	2.3	0.0	6.1	0.6	4.0	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	87	68	293	340	203
Future Volume (veh/h)	141	87	68	293	340	203
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	141	87	68	293	340	203
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	226	201	672	1232	1241	1052
Arrive On Green	0.13	0.13	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1781	1585	856	1856	1870	1585
Grp Volume(v), veh/h	141	87	68	293	340	203
Grp Sat Flow(s),veh/h/ln	1781	1585	856	1856	1870	1585
Q Serve(g_s), s	3.2	2.2	1.5	2.7	3.2	2.1
Cycle Q Clear(g_c), s	3.2	2.2	4.7	2.7	3.2	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	226	201	672	1232	1241	1052
V/C Ratio(X)	0.63	0.43	0.10	0.24	0.27	0.19
Avail Cap(c_a), veh/h	933	831	672	1232	1241	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	17.3	3.9	2.9	3.0	2.8
Incr Delay (d2), s/veh	2.8	1.5	0.3	0.5	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.2	0.5	0.7	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	18.8	4.2	3.3	3.5	3.2
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	228			361	543	
Approach Delay, s/veh	19.9			3.5	3.4	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		33.0		9.9		33.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		6.7		5.2		5.2
Green Ext Time (p_c), s		2.1		0.6		2.8
Intersection Summary						
HCM 6th Ctrl Delay			6.8			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	277	123	32	209	83	81	305	49	141	465	242
Future Volume (veh/h)	155	277	123	32	209	83	81	305	49	141	465	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	155	277	84	32	209	61	81	305	40	141	465	111
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	203	481	408	37	309	262	103	525	445	185	615	521
Arrive On Green	0.11	0.26	0.26	0.02	0.16	0.16	0.06	0.28	0.28	0.10	0.33	0.33
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	155	277	84	32	209	61	81	305	40	141	465	111
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	4.0	6.1	2.0	0.8	4.9	1.6	2.1	6.7	0.9	3.7	10.5	2.4
Cycle Q Clear(g_c), s	4.0	6.1	2.0	0.8	4.9	1.6	2.1	6.7	0.9	3.7	10.5	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	481	408	37	309	262	103	525	445	185	615	521
V/C Ratio(X)	0.76	0.58	0.21	0.86	0.68	0.23	0.79	0.58	0.09	0.76	0.76	0.21
Avail Cap(c_a), veh/h	454	875	741	191	601	509	298	978	829	451	1144	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	15.4	13.9	23.1	18.7	17.3	22.0	14.6	12.5	20.7	14.2	11.5
Incr Delay (d2), s/veh	5.9	1.1	0.2	39.1	2.6	0.4	12.6	1.0	0.1	6.4	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.4	0.6	0.7	2.1	0.5	1.2	2.5	0.3	1.7	4.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	16.5	14.1	62.2	21.3	17.7	34.6	15.6	12.6	27.1	16.1	11.7
LnGrp LOS	C	B	B	E	C	B	C	B	B	C	B	B
Approach Vol, veh/h		516			302			426			717	
Approach Delay, s/veh		19.1			24.9			18.9			17.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	17.4	5.0	16.1	6.8	19.6	9.4	11.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	25.0	5.0	22.0	8.0	29.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	5.7	8.7	2.8	8.1	4.1	12.5	6.0	6.9
Green Ext Time (p_c), s	0.2	1.7	0.0	1.6	0.0	3.1	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

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	57	206	145	55	144	72	95	372	79	103	652	130
Future Vol, veh/h	57	206	145	55	144	72	95	372	79	103	652	130
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	2	2	2	4	4	2	2	2	2
Mvmt Flow	57	206	145	55	144	72	95	372	79	103	652	130

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1568	1499	652	1661	1550	372	782	0	0	451	0	0
Stage 1	858	858	-	562	562	-	-	-	-	-	-	-
Stage 2	710	641	-	1099	988	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	~ 122	471	77	~ 114	674	827	-	-	1109	-	-
Stage 1	354	374	-	512	510	-	-	-	-	-	-	-
Stage 2	428	469	-	258	325	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 98	471	-	~ 92	674	827	-	-	1109	-	-
Mov Cap-2 Maneuver	-	~ 98	-	-	~ 92	-	-	-	-	-	-	-
Stage 1	313	339	-	453	451	-	-	-	-	-	-	-
Stage 2	230	415	-	64	295	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.7	1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	827	-	-	-	471	-	674	1109	-	-
HCM Lane V/C Ratio	0.115	-	-	-	0.308	-	0.107	0.093	-	-
HCM Control Delay (s)	9.9	-	-	-	16	-	11	8.6	-	-
HCM Lane LOS	A	-	-	-	C	-	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	1.3	-	0.4	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	122	101	374	713	94
Future Volume (veh/h)	88	122	101	374	713	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	88	60	101	374	713	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	145	129	127	1264	955	810
Arrive On Green	0.08	0.08	0.07	0.69	0.51	0.51
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	88	60	101	374	713	40
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	1.7	1.3	2.0	2.8	10.6	0.4
Cycle Q Clear(g_c), s	1.7	1.3	2.0	2.8	10.6	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	145	129	127	1264	955	810
V/C Ratio(X)	0.60	0.46	0.80	0.30	0.75	0.05
Avail Cap(c_a), veh/h	302	268	393	2371	1809	1533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	15.5	16.2	2.1	6.9	4.4
Incr Delay (d2), s/veh	4.0	2.6	10.8	0.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	1.0	0.1	2.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.7	18.1	27.0	2.2	8.1	4.4
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	148			475	753	
Approach Delay, s/veh	19.1			7.5	7.9	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.5		6.9	6.6	22.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		46.0		6.0	8.0	34.0
Max Q Clear Time (g_c+I1), s		4.8		3.7	4.0	12.6
Green Ext Time (p_c), s		2.5		0.1	0.1	5.3
Intersection Summary						
HCM 6th Ctrl Delay			9.0			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	1.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	46	309	22	79	276
Future Vol, veh/h	13	46	309	22	79	276
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	13	46	309	22	79	276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	754	320	0	0	331	0
Stage 1	320	-	-	-	-	-
Stage 2	434	-	-	-	-	-
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	377	721	-	-	1228	-
Stage 1	736	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	348	721	-	-	1228	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	603	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	583	1228	-
HCM Lane V/C Ratio	-	-	0.101	0.064	-
HCM Control Delay (s)	-	-	11.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	147	208	207	0	237	150	109	53	12	123	81	101
Future Vol, veh/h	147	208	207	0	237	150	109	53	12	123	81	101
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	147	208	207	0	237	150	109	53	12	123	81	101
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	15.4	17.2	14.6	13.9
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	82%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	18%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	65	147	208	207	0	237	150	123	81	101
LT Vol	109	0	147	0	0	0	0	0	123	0	0
Through Vol	0	53	0	208	0	0	237	0	0	81	0
RT Vol	0	12	0	0	207	0	0	150	0	0	101
Lane Flow Rate	109	65	147	208	207	0	237	150	123	81	101
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.279	0.155	0.335	0.445	0.402	0	0.529	0.305	0.304	0.188	0.215
Departure Headway (Hd)	9.228	8.583	8.209	7.7	6.987	8.04	8.04	7.328	8.886	8.374	7.658
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	388	416	437	466	513	0	448	488	403	427	467
Service Time	7.023	6.378	5.986	5.476	4.763	5.822	5.822	5.11	6.672	6.16	5.444
HCM Lane V/C Ratio	0.281	0.156	0.336	0.446	0.404	0	0.529	0.307	0.305	0.19	0.216
HCM Control Delay	15.6	13	15.1	16.6	14.4	10.8	19.6	13.3	15.5	13.1	12.6
HCM Lane LOS	C	B	C	C	B	N	C	B	C	B	B
HCM 95th-tile Q	1.1	0.5	1.5	2.2	1.9	0	3	1.3	1.3	0.7	0.8

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	558	53	41	387	35	34	4	27	18	4	100
Future Vol, veh/h	166	558	53	41	387	35	34	4	27	18	4	100
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	166	558	53	41	387	35	34	4	27	18	4	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	422	0	0	611	0	0	1429	1394	558	1401	1412	387
Stage 1	-	-	-	-	-	-	890	890	-	469	469	-
Stage 2	-	-	-	-	-	-	539	504	-	932	943	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	1143	-	-	963	-	-	111	140	525	116	136	654
Stage 1	-	-	-	-	-	-	335	358	-	569	556	-
Stage 2	-	-	-	-	-	-	523	538	-	316	337	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	963	-	-	79	115	525	92	111	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	115	-	92	111	-
Stage 1	-	-	-	-	-	-	286	306	-	486	532	-
Stage 2	-	-	-	-	-	-	421	515	-	253	288	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.8	49.9	18.6
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	79	115	525	1143	-	-	963	-	-	92	111	654
HCM Lane V/C Ratio	0.43	0.035	0.051	0.145	-	-	0.043	-	-	0.196	0.036	0.153
HCM Control Delay (s)	81.3	37.4	12.2	8.7	-	-	8.9	-	-	53.4	38.6	11.5
HCM Lane LOS	F	E	B	A	-	-	A	-	-	F	E	B
HCM 95th %tile Q(veh)	1.7	0.1	0.2	0.5	-	-	0.1	-	-	0.7	0.1	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	217	161	34	392	395	197	427	61	121	188	163
Future Volume (veh/h)	270	217	161	34	392	395	197	427	61	121	188	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	270	217	161	34	392	395	197	427	16	121	188	163
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	323	822	582	85	514	459	244	680	25	155	267	218
Arrive On Green	0.19	0.43	0.43	0.05	0.29	0.29	0.14	0.20	0.20	0.09	0.15	0.15
Sat Flow, veh/h	1697	1892	1340	1767	1763	1572	1767	3465	130	1739	1812	1482
Grp Volume(v), veh/h	270	193	185	34	392	395	197	217	226	121	179	172
Grp Sat Flow(s),veh/h/ln	1697	1692	1540	1767	1763	1572	1767	1763	1832	1739	1735	1559
Q Serve(g_s), s	10.5	5.0	5.3	1.3	13.9	16.3	7.4	7.8	7.8	4.7	6.8	7.3
Cycle Q Clear(g_c), s	10.5	5.0	5.3	1.3	13.9	16.3	7.4	7.8	7.8	4.7	6.8	7.3
Prop In Lane	1.00		0.87	1.00		1.00	1.00		0.07	1.00		0.95
Lane Grp Cap(c), veh/h	323	735	669	85	514	459	244	346	360	155	255	229
V/C Ratio(X)	0.84	0.26	0.28	0.40	0.76	0.86	0.81	0.63	0.63	0.78	0.70	0.75
Avail Cap(c_a), veh/h	543	935	851	154	564	503	411	487	506	278	353	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	12.4	12.5	31.8	22.2	23.0	28.8	25.3	25.3	30.7	27.9	28.1
Incr Delay (d2), s/veh	5.7	0.2	0.2	3.1	5.6	13.3	6.2	1.9	1.8	8.3	3.7	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	1.8	1.7	0.6	6.2	7.3	3.4	3.3	3.4	2.2	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	12.6	12.7	34.8	27.8	36.3	35.0	27.2	27.2	39.0	31.6	34.3
LnGrp LOS	C	B	B	C	C	D	C	C	C	D	C	C
Approach Vol, veh/h		648			821			640			472	
Approach Delay, s/veh		20.9			32.2			29.6			34.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	17.5	7.3	33.9	13.5	14.1	17.1	24.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	19.0	6.0	38.0	16.0	14.0	22.0	22.0
Max Q Clear Time (g_c+I1), s	6.7	9.8	3.3	7.3	9.4	9.3	12.5	18.3
Green Ext Time (p_c), s	0.1	1.8	0.0	2.5	0.3	0.9	0.6	1.7

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	85	63	68	179	90	111	691	32	42	398	87
Future Volume (veh/h)	110	85	63	68	179	90	111	691	32	42	398	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	85	63	68	179	90	111	691	32	42	398	87
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	244	181	109	239	120	143	985	46	79	723	156
Arrive On Green	0.10	0.24	0.24	0.06	0.20	0.20	0.08	0.28	0.28	0.04	0.25	0.25
Sat Flow, veh/h	1781	998	740	1781	1174	590	1781	3458	160	1781	2905	629
Grp Volume(v), veh/h	110	0	148	68	0	269	111	355	368	42	242	243
Grp Sat Flow(s),veh/h/ln	1781	0	1737	1781	0	1764	1781	1777	1842	1781	1777	1757
Q Serve(g_s), s	2.9	0.0	3.5	1.8	0.0	7.1	3.0	8.8	8.8	1.1	5.8	6.0
Cycle Q Clear(g_c), s	2.9	0.0	3.5	1.8	0.0	7.1	3.0	8.8	8.8	1.1	5.8	6.0
Prop In Lane	1.00		0.43	1.00		0.33	1.00		0.09	1.00		0.36
Lane Grp Cap(c), veh/h	182	0	425	109	0	360	143	506	524	79	442	437
V/C Ratio(X)	0.60	0.00	0.35	0.62	0.00	0.75	0.78	0.70	0.70	0.53	0.55	0.56
Avail Cap(c_a), veh/h	649	0	964	310	0	643	278	752	780	184	659	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	15.4	22.6	0.0	18.5	22.3	15.8	15.8	23.1	16.1	16.2
Incr Delay (d2), s/veh	3.2	0.0	0.5	5.7	0.0	3.1	8.6	1.8	1.7	5.4	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.3	0.9	0.0	2.9	1.5	3.3	3.4	0.6	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	0.0	15.9	28.3	0.0	21.6	30.9	17.6	17.5	28.5	17.2	17.3
LnGrp LOS	C	A	B	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		258			337			834			527	
Approach Delay, s/veh		19.5			22.9			19.3			18.1	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	18.6	7.5	16.6	8.5	16.8	9.6	14.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	20.9	8.6	27.4	7.7	18.3	18.0	18.0
Max Q Clear Time (g_c+I1), s	3.1	10.8	3.8	5.5	5.0	8.0	4.9	9.1
Green Ext Time (p_c), s	0.0	3.2	0.0	0.8	0.1	2.1	0.2	1.0

Intersection Summary		
HCM 6th Ctrl Delay		19.6
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	397	234	29	164	206	175	337	18	329	513	249
Future Volume (veh/h)	265	397	234	29	164	206	175	337	18	329	513	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	265	397	234	29	164	206	175	337	6	329	513	249
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	325	638	372	83	284	253	222	705	13	391	680	329
Arrive On Green	0.18	0.29	0.29	0.05	0.16	0.16	0.12	0.20	0.20	0.22	0.29	0.29
Sat Flow, veh/h	1795	2179	1269	1795	1791	1598	1781	3572	64	1795	2341	1132
Grp Volume(v), veh/h	265	325	306	29	164	206	175	167	176	329	392	370
Grp Sat Flow(s),veh/h/ln	1795	1791	1657	1795	1791	1598	1781	1777	1859	1795	1791	1681
Q Serve(g_s), s	9.2	10.2	10.4	1.0	5.5	8.1	6.2	5.4	5.5	11.4	13.0	13.0
Cycle Q Clear(g_c), s	9.2	10.2	10.4	1.0	5.5	8.1	6.2	5.4	5.5	11.4	13.0	13.0
Prop In Lane	1.00		0.77	1.00		1.00	1.00		0.03	1.00		0.67
Lane Grp Cap(c), veh/h	325	525	485	83	284	253	222	351	367	391	520	489
V/C Ratio(X)	0.82	0.62	0.63	0.35	0.58	0.81	0.79	0.48	0.48	0.84	0.75	0.76
Avail Cap(c_a), veh/h	579	742	687	138	302	270	410	464	485	689	742	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.9	20.0	30.1	25.4	26.5	27.7	23.2	23.2	24.4	21.0	21.0
Incr Delay (d2), s/veh	5.0	1.2	1.4	2.5	2.4	16.4	6.2	1.0	1.0	4.9	2.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.1	3.9	0.5	2.4	4.1	2.9	2.2	2.4	5.1	5.4	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	21.1	21.3	32.6	27.8	42.8	33.9	24.2	24.1	29.4	23.7	24.0
LnGrp LOS	C	C	C	C	C	D	C	C	C	C	C	C
Approach Vol, veh/h		896			399			518			1091	
Approach Delay, s/veh		24.0			35.9			27.4			25.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	16.9	7.0	23.1	12.1	22.9	15.8	14.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	17.0	5.0	27.0	15.0	27.0	21.0	11.0
Max Q Clear Time (g_c+I1), s	13.4	7.5	3.0	12.4	8.2	15.0	11.2	10.1
Green Ext Time (p_c), s	0.8	1.3	0.0	3.5	0.2	3.9	0.5	0.2

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
11: Fairview Road & Hillcrest Road

05/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	206	145	55	144	72	95	372	79	103	652	130
Future Volume (veh/h)	57	206	145	55	144	72	95	372	79	103	652	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1870	1870	1870	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	57	206	145	55	144	72	95	372	79	103	652	130
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	165	266	187	92	260	130	122	824	173	132	859	171
Arrive On Green	0.09	0.26	0.26	0.05	0.22	0.22	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1810	1022	719	1781	1176	588	1753	2876	604	1781	2953	588
Grp Volume(v), veh/h	57	0	351	55	0	216	95	225	226	103	392	390
Grp Sat Flow(s),veh/h/ln	1810	0	1741	1781	0	1764	1753	1749	1732	1781	1777	1765
Q Serve(g_s), s	1.6	0.0	10.3	1.7	0.0	6.0	2.9	5.8	5.9	3.1	11.0	11.1
Cycle Q Clear(g_c), s	1.6	0.0	10.3	1.7	0.0	6.0	2.9	5.8	5.9	3.1	11.0	11.1
Prop In Lane	1.00		0.41	1.00		0.33	1.00		0.35	1.00		0.33
Lane Grp Cap(c), veh/h	165	0	453	92	0	390	122	501	496	132	517	513
V/C Ratio(X)	0.35	0.00	0.78	0.60	0.00	0.55	0.78	0.45	0.46	0.78	0.76	0.76
Avail Cap(c_a), veh/h	593	0	929	217	0	578	176	640	634	191	663	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	18.8	25.5	0.0	19.0	25.1	16.0	16.1	25.0	17.7	17.7
Incr Delay (d2), s/veh	1.2	0.0	2.9	6.1	0.0	1.2	12.8	0.6	0.7	11.9	3.8	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.1	0.8	0.0	2.3	1.6	2.1	2.2	1.7	4.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	21.7	31.5	0.0	20.2	38.0	16.7	16.7	36.9	21.5	21.6
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	C	C
Approach Vol, veh/h		408			271			546			885	
Approach Delay, s/veh		22.1			22.5			20.4			23.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	20.2	7.3	18.8	8.3	20.5	9.5	16.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	20.1	6.7	29.3	5.5	20.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	5.1	7.9	3.7	12.3	4.9	13.1	3.6	8.0
Green Ext Time (p_c), s	0.0	2.1	0.0	2.0	0.0	2.9	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	558	53	41	387	35	34	4	27	18	4	100
Future Volume (veh/h)	166	558	53	41	387	35	34	4	27	18	4	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	166	558	53	41	387	35	34	4	27	18	4	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	3	3	3	4	4	4	5	5	5
Cap, veh/h	512	748	634	80	633	537	68	210	178	39	179	152
Arrive On Green	0.10	0.40	0.40	0.05	0.34	0.34	0.04	0.11	0.11	0.02	0.10	0.10
Sat Flow, veh/h	1795	1885	1598	1767	1856	1572	1753	1841	1560	1739	1826	1547
Grp Volume(v), veh/h	166	558	53	41	387	35	34	4	27	18	4	100
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1767	1856	1572	1753	1841	1560	1739	1826	1547
Q Serve(g_s), s	2.4	10.8	0.9	1.0	7.4	0.6	0.8	0.1	0.7	0.4	0.1	2.7
Cycle Q Clear(g_c), s	2.4	10.8	0.9	1.0	7.4	0.6	0.8	0.1	0.7	0.4	0.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	512	748	634	80	633	537	68	210	178	39	179	152
V/C Ratio(X)	0.32	0.75	0.08	0.51	0.61	0.07	0.50	0.02	0.15	0.46	0.02	0.66
Avail Cap(c_a), veh/h	697	1742	1476	269	1619	1372	250	904	766	203	850	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	11.0	8.0	19.9	11.7	9.5	20.1	16.8	17.1	20.6	17.4	18.6
Incr Delay (d2), s/veh	0.4	1.5	0.1	5.1	1.0	0.1	5.6	0.0	0.4	8.2	0.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.7	0.2	0.5	2.6	0.2	0.4	0.0	0.2	0.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	12.5	8.1	25.0	12.7	9.5	25.7	16.8	17.4	28.8	17.5	23.4
LnGrp LOS	A	B	A	C	B	A	C	B	B	C	B	C
Approach Vol, veh/h		777			463			65			122	
Approach Delay, s/veh		11.4			13.5			21.7			24.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	9.4	6.4	21.5	6.2	8.7	8.8	19.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	21.0	6.5	39.5	6.1	19.9	8.7	37.3
Max Q Clear Time (g_c+I1), s	2.4	2.7	3.0	12.8	2.8	4.7	4.4	9.4
Green Ext Time (p_c), s	0.0	0.0	0.0	4.1	0.0	0.2	0.2	2.6

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
1: Airline Highway & Union Road

05/10/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	216	227	48	386	446	320	965	88	156	527	165
Future Volume (veh/h)	275	216	227	48	386	446	320	965	88	156	527	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	275	216	227	48	386	446	320	965	43	156	527	165
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	226	106	111	471	209	242	196	660	559	116	415	130
Arrive On Green	0.13	0.13	0.13	0.27	0.27	0.27	0.11	0.36	0.36	0.07	0.31	0.31
Sat Flow, veh/h	1697	795	836	1767	785	907	1767	1856	1572	1739	1333	417
Grp Volume(v), veh/h	275	0	443	48	0	832	320	965	43	156	0	692
Grp Sat Flow(s),veh/h/ln	1697	0	1631	1767	0	1692	1767	1856	1572	1739	0	1751
Q Serve(g_s), s	12.0	0.0	12.0	1.8	0.0	24.0	10.0	32.0	1.6	6.0	0.0	28.0
Cycle Q Clear(g_c), s	12.0	0.0	12.0	1.8	0.0	24.0	10.0	32.0	1.6	6.0	0.0	28.0
Prop In Lane	1.00		0.51	1.00		0.54	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	226	0	217	471	0	451	196	660	559	116	0	545
V/C Ratio(X)	1.22	0.00	2.04	0.10	0.00	1.84	1.63	1.46	0.08	1.35	0.00	1.27
Avail Cap(c_a), veh/h	226	0	217	471	0	451	196	660	559	116	0	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	39.0	24.9	0.0	33.0	40.0	29.0	19.2	42.0	0.0	31.0
Incr Delay (d2), s/veh	130.4	0.0	482.4	0.1	0.0	388.2	305.4	216.5	0.1	202.1	0.0	135.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	33.9	0.8	0.0	58.2	20.9	53.2	0.6	9.0	0.0	31.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	169.4	0.0	521.4	25.0	0.0	421.2	345.4	245.5	19.3	244.1	0.0	166.6
LnGrp LOS	F	A	F	C	A	F	F	F	B	F	A	F
Approach Vol, veh/h		718			880			1328			848	
Approach Delay, s/veh		386.6			399.6			262.2			180.9	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	36.0		16.0	14.0	32.0		28.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	32.0		12.0	10.0	28.0		24.0				
Max Q Clear Time (g_c+I1), s	8.0	34.0		14.0	12.0	30.0		26.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			299.6									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	112	29	48	73	464	64	1555	84	157	736	48
Future Volume (veh/h)	79	112	29	48	73	464	64	1555	84	157	736	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	79	112	20	48	73	239	64	1555	84	157	736	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	287	343	291	294	348	295	80	1698	91	182	1938	864
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.50	0.50	0.10	0.56	0.56
Sat Flow, veh/h	1051	1841	1560	1258	1870	1585	1767	3402	183	1739	3469	1547
Grp Volume(v), veh/h	79	112	20	48	73	239	64	802	837	157	736	32
Grp Sat Flow(s),veh/h/ln	1051	1841	1560	1258	1870	1585	1767	1763	1823	1739	1735	1547
Q Serve(g_s), s	3.9	3.0	0.6	2.0	1.9	8.3	2.1	23.9	24.3	5.1	6.8	0.5
Cycle Q Clear(g_c), s	5.8	3.0	0.6	5.0	1.9	8.3	2.1	23.9	24.3	5.1	6.8	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	287	343	291	294	348	295	80	880	910	182	1938	864
V/C Ratio(X)	0.28	0.33	0.07	0.16	0.21	0.81	0.80	0.91	0.92	0.86	0.38	0.04
Avail Cap(c_a), veh/h	330	418	354	345	425	360	185	893	924	182	1938	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	20.2	19.2	22.3	19.7	22.3	27.1	13.2	13.3	25.2	7.1	5.7
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.3	0.3	10.9	16.2	13.3	13.9	31.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.3	0.2	0.6	0.8	3.7	1.2	10.7	11.4	3.6	2.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	20.7	19.3	22.6	20.0	33.2	43.3	26.5	27.2	57.0	7.2	5.7
LnGrp LOS	C	C	B	C	C	C	D	C	C	E	A	A
Approach Vol, veh/h		211			360			1703			925	
Approach Delay, s/veh		21.3			29.1			27.5			15.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	32.6		14.7	6.6	36.0		14.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	29.0		13.0	6.0	29.0		13.0
Max Q Clear Time (g_c+I1), s	7.1	26.3		7.8	4.1	8.8		10.3
Green Ext Time (p_c), s	0.0	2.3		0.4	0.0	5.3		0.4

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	316	218	202	696	641	379	1373	77	360	885	408
Future Volume (veh/h)	406	316	218	202	696	641	379	1373	77	360	885	408
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	406	316	100	202	696	467	379	1373	77	360	885	257
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	418	995	444	238	1040	464	447	1541	86	377	1481	460
Arrive On Green	0.12	0.28	0.28	0.13	0.29	0.29	0.13	0.31	0.31	0.11	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4908	275	3401	5025	1560
Grp Volume(v), veh/h	406	316	100	202	696	467	379	945	505	360	885	257
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1806	1700	1675	1560
Q Serve(g_s), s	11.6	7.0	4.8	11.0	17.1	29.0	10.7	26.4	26.4	10.4	14.9	13.8
Cycle Q Clear(g_c), s	11.6	7.0	4.8	11.0	17.1	29.0	10.7	26.4	26.4	10.4	14.9	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	418	995	444	238	1040	464	447	1060	567	377	1481	460
V/C Ratio(X)	0.97	0.32	0.23	0.85	0.67	1.01	0.85	0.89	0.89	0.95	0.60	0.56
Avail Cap(c_a), veh/h	418	995	444	359	1040	464	484	1090	583	377	1481	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	28.2	27.4	42.0	30.8	35.1	42.1	32.4	32.4	43.8	29.9	29.5
Incr Delay (d2), s/veh	36.2	0.2	0.3	11.4	1.7	43.6	12.5	9.2	15.6	34.4	0.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	3.0	1.8	5.5	7.4	16.5	5.3	11.8	13.7	6.2	6.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.6	28.4	27.7	53.4	32.5	78.6	54.7	41.6	48.0	78.2	30.6	31.0
LnGrp LOS	E	C	C	D	C	F	D	D	D	E	C	C
Approach Vol, veh/h		822			1365			1829			1502	
Approach Delay, s/veh		53.6			51.4			46.1			42.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	35.1	17.2	31.8	16.9	33.2	16.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	32.0	20.0	21.0	14.0	29.0	12.0	29.0
Max Q Clear Time (g_c+I1), s	12.4	28.4	13.0	9.0	12.7	16.9	13.6	31.0
Green Ext Time (p_c), s	0.0	2.7	0.3	1.8	0.2	5.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	128	353	237	2192	1359	138
Future Volume (veh/h)	128	353	237	2192	1359	138
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	128	149	237	2192	1359	138
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	244	217	363	3619	2461	250
Arrive On Green	0.14	0.14	0.11	0.71	0.54	0.54
Sat Flow, veh/h	1753	1560	3428	5233	4762	467
Grp Volume(v), veh/h	128	149	237	2192	982	515
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1742
Q Serve(g_s), s	3.7	5.0	3.6	11.9	10.6	10.6
Cycle Q Clear(g_c), s	3.7	5.0	3.6	11.9	10.6	10.6
Prop In Lane	1.00	1.00	1.00			0.27
Lane Grp Cap(c), veh/h	244	217	363	3619	1779	932
V/C Ratio(X)	0.53	0.69	0.65	0.61	0.55	0.55
Avail Cap(c_a), veh/h	707	629	629	4644	2193	1150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	22.4	23.4	3.9	8.4	8.4
Incr Delay (d2), s/veh	1.8	3.8	2.0	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.2	1.5	1.9	3.0	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.6	26.2	25.4	4.1	8.6	8.9
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	277			2429	1497	
Approach Delay, s/veh	25.0			6.2	8.7	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		43.0		11.6	9.8	33.2
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		50.0		22.0	10.0	36.0
Max Q Clear Time (g_c+I1), s		13.9		7.0	5.6	12.6
Green Ext Time (p_c), s		25.1		0.7	0.3	11.8

Intersection Summary		
HCM 6th Ctrl Delay		8.3
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	168	136	145	375	516	298	2236	94	218	1049	178
Future Volume (veh/h)	106	168	136	145	375	516	298	2236	94	218	1049	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	106	168	136	145	375	284	298	2236	67	218	1049	152
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	54	144	110	137	230	195	326	1790	798	162	1453	648
Arrive On Green	0.03	0.08	0.08	0.08	0.12	0.12	0.18	0.51	0.51	0.09	0.42	0.42
Sat Flow, veh/h	1739	1877	1426	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	106	154	150	145	375	284	298	2236	67	218	1049	152
Grp Sat Flow(s),veh/h/ln	1739	1735	1569	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	2.0	5.0	5.0	5.0	8.0	8.0	10.8	33.0	1.4	6.0	16.3	4.1
Cycle Q Clear(g_c), s	2.0	5.0	5.0	5.0	8.0	8.0	10.8	33.0	1.4	6.0	16.3	4.1
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	133	121	137	230	195	326	1790	798	162	1453	648
V/C Ratio(X)	1.98	1.16	1.24	1.06	1.63	1.46	0.91	1.25	0.08	1.35	0.72	0.23
Avail Cap(c_a), veh/h	54	133	121	137	230	195	326	1790	798	162	1453	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	30.0	30.0	30.0	28.5	28.5	26.0	16.0	8.2	29.5	15.9	12.3
Incr Delay (d2), s/veh	501.3	126.3	159.8	93.3	302.0	231.2	28.9	117.0	0.0	191.4	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	6.7	7.2	5.6	22.7	15.4	6.9	40.0	0.4	11.0	6.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	532.8	156.3	189.8	123.3	330.5	259.7	54.9	133.0	8.3	220.9	17.7	12.5
LnGrp LOS	F	F	F	F	F	F	D	F	A	F	B	B
Approach Vol, veh/h		410			804			2601			1419	
Approach Delay, s/veh		265.9			268.2			120.8			48.3	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	37.0	9.0	9.0	16.0	31.0	6.0	12.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	33.0	5.0	5.0	12.0	27.0	2.0	8.0
Max Q Clear Time (g_c+I1), s	8.0	35.0	7.0	7.0	12.8	18.3	4.0	10.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	135.2
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	337	219	246	386	201	240	2208	79	103	1199	13
Future Volume (veh/h)	42	337	219	246	386	201	240	2208	79	103	1199	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	42	337	219	246	386	201	240	2208	79	103	1199	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	219	643	409	229	712	366	312	1761	63	77	1617	18
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.09	0.51	0.51	0.04	0.46	0.46
Sat Flow, veh/h	822	2066	1316	860	2289	1175	3401	3445	123	1725	3487	38
Grp Volume(v), veh/h	42	287	269	246	301	286	240	1114	1173	103	592	620
Grp Sat Flow(s),veh/h/ln	822	1763	1619	860	1791	1674	1700	1749	1819	1725	1721	1804
Q Serve(g_s), s	4.0	12.0	12.4	15.6	12.5	12.8	6.2	46.0	46.0	4.0	25.3	25.3
Cycle Q Clear(g_c), s	16.8	12.0	12.4	28.0	12.5	12.8	6.2	46.0	46.0	4.0	25.3	25.3
Prop In Lane	1.00		0.81	1.00		0.70	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	219	548	504	229	557	521	312	894	930	77	798	837
V/C Ratio(X)	0.19	0.52	0.54	1.07	0.54	0.55	0.77	1.25	1.26	1.34	0.74	0.74
Avail Cap(c_a), veh/h	219	548	504	229	557	521	340	894	930	77	798	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	25.5	25.6	39.9	25.7	25.8	39.9	22.0	22.0	43.0	19.7	19.7
Incr Delay (d2), s/veh	0.4	0.9	1.1	80.3	1.1	1.2	9.5	120.4	126.5	219.3	3.7	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.0	4.8	10.2	5.3	5.1	3.0	46.9	50.4	6.4	10.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	26.4	26.7	120.2	26.7	27.0	49.4	142.4	148.5	262.3	23.4	23.3
LnGrp LOS	C	C	C	F	C	C	D	F	F	F	C	C
Approach Vol, veh/h		598			833			2527			1315	
Approach Delay, s/veh		27.0			54.4			136.4			42.1	
Approach LOS		C			D			F			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	50.0		32.0	12.3	45.7		32.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	46.0		28.0	9.0	41.0		28.0				
Max Q Clear Time (g_c+I1), s	6.0	48.0		18.8	8.2	27.3		30.0				
Green Ext Time (p_c), s	0.0	0.0		2.6	0.1	6.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		87.5
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	249	154	130	356	196	220	2200	239	51	1010	4
Future Volume (veh/h)	32	249	154	130	356	196	220	2200	239	51	1010	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	249	154	130	356	89	220	2200	239	51	1010	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	177	300	186	134	528	447	253	1864	199	34	1579	6
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.14	0.58	0.58	0.02	0.46	0.46
Sat Flow, veh/h	937	1073	663	990	1885	1598	1767	3214	343	1697	3458	14
Grp Volume(v), veh/h	32	0	403	130	356	89	220	1188	1251	51	494	520
Grp Sat Flow(s),veh/h/ln	937	0	1736	990	1885	1598	1767	1763	1794	1697	1692	1779
Q Serve(g_s), s	3.1	0.0	21.8	6.2	16.8	4.2	12.2	58.0	58.0	2.0	22.4	22.4
Cycle Q Clear(g_c), s	19.9	0.0	21.8	28.0	16.8	4.2	12.2	58.0	58.0	2.0	22.4	22.4
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.19	1.00		0.01
Lane Grp Cap(c), veh/h	177	0	486	134	528	447	253	1022	1040	34	773	813
V/C Ratio(X)	0.18	0.00	0.83	0.97	0.67	0.20	0.87	1.16	1.20	1.50	0.64	0.64
Avail Cap(c_a), veh/h	177	0	486	134	528	447	300	1022	1040	34	773	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	33.8	48.5	32.0	27.4	41.9	21.0	21.0	49.0	20.8	20.8
Incr Delay (d2), s/veh	0.5	0.0	11.4	69.1	3.4	0.2	20.4	84.0	100.3	333.8	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	10.5	5.8	8.0	1.6	6.7	45.2	50.7	4.0	8.9	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	45.2	117.6	35.3	27.7	62.3	105.0	121.3	382.8	22.6	22.5
LnGrp LOS	D	A	D	F	D	C	E	F	F	F	C	C
Approach Vol, veh/h		435			575			2659			1065	
Approach Delay, s/veh		44.9			52.7			109.1			39.8	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	62.0		32.0	18.3	49.7		32.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	2.0	58.0		28.0	17.0	43.0		28.0				
Max Q Clear Time (g_c+I1), s	4.0	60.0		23.8	14.2	24.4		30.0				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.2	6.6		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		80.8
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	796	334	37	1018	1081	634	1267	26	203	487	4
Future Volume (veh/h)	16	796	334	37	1018	1081	634	1267	26	203	487	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	796	212	37	1018	762	634	1267	26	203	487	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	18	1091	487	46	1210	950	730	1431	29	250	939	8
Arrive On Green	0.01	0.33	0.33	0.03	0.34	0.34	0.21	0.40	0.40	0.07	0.27	0.27
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3533	72	3374	3526	29
Grp Volume(v), veh/h	16	796	212	37	1018	762	634	632	661	203	239	252
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1842	1687	1735	1821
Q Serve(g_s), s	0.9	19.8	10.5	1.9	25.0	23.4	16.8	31.4	31.4	5.6	11.1	11.1
Cycle Q Clear(g_c), s	0.9	19.8	10.5	1.9	25.0	23.4	16.8	31.4	31.4	5.6	11.1	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.02
Lane Grp Cap(c), veh/h	18	1091	487	46	1210	950	730	714	746	250	462	485
V/C Ratio(X)	0.90	0.73	0.44	0.80	0.84	0.80	0.87	0.89	0.89	0.81	0.52	0.52
Avail Cap(c_a), veh/h	36	1139	508	76	1281	1006	873	766	801	250	462	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	28.2	25.0	45.7	28.7	28.2	35.8	26.0	26.0	43.0	29.4	29.4
Incr Delay (d2), s/veh	75.5	2.3	0.6	26.0	5.0	4.5	8.2	11.5	11.2	17.9	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	3.7	1.2	11.1	8.1	7.7	14.8	15.4	2.9	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.1	30.5	25.6	71.7	33.7	32.7	44.0	37.5	37.2	60.9	30.5	30.4
LnGrp LOS	F	C	C	E	C	C	D	D	D	E	C	C
Approach Vol, veh/h		1024			1817			1927			694	
Approach Delay, s/veh		30.9			34.1			39.6			39.3	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	42.2	6.5	34.7	24.1	29.1	5.0	36.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	41.0	4.0	32.0	24.0	24.0	2.0	34.0				
Max Q Clear Time (g_c+I1), s	7.6	33.4	3.9	21.8	18.8	13.1	2.9	27.0				
Green Ext Time (p_c), s	0.0	4.8	0.0	4.5	1.2	2.2	0.0	5.2				
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	32	35	423	249	89
Future Volume (veh/h)	180	32	35	423	249	89
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1811	1811	1811
Adj Flow Rate, veh/h	180	32	35	423	249	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	6	6	6	6
Cap, veh/h	251	223	772	1202	1202	1018
Arrive On Green	0.14	0.14	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1781	1585	1009	1811	1811	1535
Grp Volume(v), veh/h	180	32	35	423	249	89
Grp Sat Flow(s),veh/h/ln	1781	1585	1009	1811	1811	1535
Q Serve(g_s), s	4.4	0.8	0.6	4.7	2.5	1.0
Cycle Q Clear(g_c), s	4.4	0.8	3.1	4.7	2.5	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	251	223	772	1202	1202	1018
V/C Ratio(X)	0.72	0.14	0.05	0.35	0.21	0.09
Avail Cap(c_a), veh/h	794	707	772	1202	1202	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	17.3	3.6	3.4	3.0	2.8
Incr Delay (d2), s/veh	3.8	0.3	0.1	0.8	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	0.1	1.0	0.5	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	17.6	3.7	4.2	3.4	2.9
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	212			458	338	
Approach Delay, s/veh	21.9			4.2	3.3	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		35.0		11.0		35.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5
Max Q Clear Time (g_c+I1), s		6.7		6.4		4.5
Green Ext Time (p_c), s		2.9		0.5		1.8

Intersection Summary		
HCM 6th Ctrl Delay		7.6
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	130	58	39	259	117	92	562	20	73	274	223
Future Volume (veh/h)	230	130	58	39	259	117	92	562	20	73	274	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	230	130	35	39	259	76	92	562	16	73	274	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	278	567	480	46	314	266	116	629	533	89	600	509
Arrive On Green	0.15	0.30	0.30	0.03	0.17	0.17	0.07	0.35	0.35	0.05	0.33	0.33
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	230	130	35	39	259	76	92	562	16	73	274	86
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	7.1	3.0	0.9	1.3	7.9	2.5	3.0	17.0	0.4	2.4	6.9	2.3
Cycle Q Clear(g_c), s	7.1	3.0	0.9	1.3	7.9	2.5	3.0	17.0	0.4	2.4	6.9	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	567	480	46	314	266	116	629	533	89	600	509
V/C Ratio(X)	0.83	0.23	0.07	0.84	0.82	0.29	0.79	0.89	0.03	0.82	0.46	0.17
Avail Cap(c_a), veh/h	281	567	480	151	318	270	179	689	583	89	600	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	15.3	14.6	28.0	23.2	20.9	26.6	17.9	12.5	27.2	15.2	13.7
Incr Delay (d2), s/veh	17.8	0.2	0.1	30.9	15.8	0.6	12.3	13.4	0.0	42.2	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.2	0.3	0.9	4.5	0.9	1.6	8.5	0.1	2.0	2.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	15.5	14.6	58.9	39.0	21.5	38.9	31.3	12.5	69.4	15.8	13.9
LnGrp LOS	D	B	B	E	D	C	D	C	B	E	B	B
Approach Vol, veh/h		395			374			670			433	
Approach Delay, s/veh		30.6			37.5			31.9			24.4	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	24.1	5.5	21.3	7.9	23.2	12.9	13.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	22.0	5.0	14.0	6.0	19.0	9.0	10.0				
Max Q Clear Time (g_c+I1), s	4.4	19.0	3.3	5.0	5.0	8.9	9.1	9.9				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.0	1.3	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	292.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	85	75	68	179	90	112	769	32	42	428	88
Future Vol, veh/h	115	85	75	68	179	90	112	769	32	42	428	88
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	85	75	68	179	90	112	769	32	42	428	88

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1656	1537	428	1629	1593	769	516	0	0	801	0	0
Stage 1	512	512	-	993	993	-	-	-	-	-	-	-
Stage 2	1144	1025	-	636	600	-	-	-	-	-	-	-
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	~ 78	116	627	82	~ 107	401	1050	-	-	822	-	-
Stage 1	545	536	-	296	323	-	-	-	-	-	-	-
Stage 2	243	312	-	466	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	98	627	~ 17	~ 91	401	1050	-	-	822	-	-
Mov Cap-2 Maneuver	-	98	-	~ 17	~ 91	-	-	-	-	-	-	-
Stage 1	487	509	-	264	288	-	-	-	-	-	-	-
Stage 2	~ 64	279	-	324	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 1803.5	1.1	0.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1050	-	-	-	627	41	401	822	-	-
HCM Lane V/C Ratio	0.107	-	-	-	0.12	6.024	0.224	0.051	-	-
HCM Control Delay (s)	8.8	-	-	-	11.$	2454.6	16.6	9.6	-	-
HCM Lane LOS	A	-	-	-	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	28.9	0.8	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	128	189	806	429	113
Future Volume (veh/h)	115	128	189	806	429	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	115	53	189	806	429	38
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	180	161	251	1162	643	545
Arrive On Green	0.10	0.10	0.14	0.63	0.36	0.36
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	115	53	189	806	429	38
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.9	0.9	3.1	8.6	6.0	0.5
Cycle Q Clear(g_c), s	1.9	0.9	3.1	8.6	6.0	0.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	180	161	251	1162	643	545
V/C Ratio(X)	0.64	0.33	0.75	0.69	0.67	0.07
Avail Cap(c_a), veh/h	530	471	759	2636	1568	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	12.5	12.4	3.6	8.2	6.4
Incr Delay (d2), s/veh	3.7	1.2	4.6	0.8	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	1.2	0.5	1.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.6	13.7	16.9	4.4	9.4	6.5
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	168			995	467	
Approach Delay, s/veh	15.7			6.8	9.1	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.0		7.1	8.3	14.7
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	13.0	26.0
Max Q Clear Time (g_c+I1), s		10.6		3.9	5.1	8.0
Green Ext Time (p_c), s		7.1		0.2	0.3	2.7

Intersection Summary			
HCM 6th Ctrl Delay			8.4
HCM 6th LOS			A

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	382	0	0	298
Future Vol, veh/h	0	0	382	0	0	298
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	0	0	382	0	0	298

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	680	382	0	0	382	0
Stage 1	382	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	417	665	-	-	1155	-
Stage 1	690	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	417	665	-	-	1155	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1155	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	279.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	130	562	160	4	799	182	285	158	8	156	47	96
Future Vol, veh/h	130	562	160	4	799	182	285	158	8	156	47	96
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	130	562	160	4	799	182	285	158	8	156	47	96
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	214.6	517.1	50.8	27
HCM LOS	F	F	F	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	95%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	5%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	166	130	562	160	4	799	182	156	47	96
LT Vol	285	0	130	0	0	4	0	0	156	0	0
Through Vol	0	158	0	562	0	0	799	0	0	47	0
RT Vol	0	8	0	0	160	0	0	182	0	0	96
Lane Flow Rate	285	166	130	562	160	4	799	182	156	47	96
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.871	0.483	0.388	1.598	0.424	0.012	2.33	0.496	0.514	0.149	0.285
Departure Headway (Hd)	13.272	12.738	12.771	12.245	11.508	11.985	11.464	10.734	14.901	14.371	13.63
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	276	286	283	303	315	300	328	339	243	251	266
Service Time	10.972	10.438	10.471	9.945	9.208	9.685	9.164	8.434	12.601	12.071	11.33
HCM Lane V/C Ratio	1.033	0.58	0.459	1.855	0.508	0.013	2.436	0.537	0.642	0.187	0.361
HCM Control Delay	64.7	26.8	23.3	313.5	22.4	14.8	632.1	23.5	32.4	19.6	21.7
HCM Lane LOS	F	D	C	F	C	B	F	C	D	C	C
HCM 95th-tile Q	7.5	2.5	1.8	28.2	2	0	57	2.6	2.7	0.5	1.1

Intersection												
Int Delay, s/veh	54.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	750	10	32	1160	17	45	8	51	39	4	147
Future Vol, veh/h	45	750	10	32	1160	17	45	8	51	39	4	147
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	45	750	10	32	1160	17	45	8	51	39	4	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1177	0	0	760	0	0	2148	2081	750	2099	2074	1160
Stage 1	-	-	-	-	-	-	840	840	-	1224	1224	-
Stage 2	-	-	-	-	-	-	1308	1241	-	875	850	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	576	-	-	838	-	-	~ 34	52	406	~ 38	54	238
Stage 1	-	-	-	-	-	-	355	377	-	219	252	-
Stage 2	-	-	-	-	-	-	193	244	-	344	377	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	576	-	-	838	-	-	~ 11	46	406	~ 26	48	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	46	-	~ 26	48	-
Stage 1	-	-	-	-	-	-	327	348	-	202	242	-
Stage 2	-	-	-	-	-	-	70	235	-	271	348	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.3			$ 910.7			153.6		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	11	46	406	576	-	-	838	-	-	26	48	238
HCM Lane V/C Ratio	4.091	0.174	0.126	0.078	-	-	0.038	-	-	1.5	0.083	0.618
HCM Control Delay (s)	$ 2069.9	99.1	15.1	11.8	-	-	9.5	-	-	$ 581.7	86.7	41.8
HCM Lane LOS	F	F	C	B	-	-	A	-	-	F	F	E
HCM 95th %tile Q(veh)	6.8	0.6	0.4	0.3	-	-	0.1	-	-	4.7	0.3	3.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	391	383	63	160	357	287	906	42	489	1225	254
Future Volume (veh/h)	268	391	383	63	160	357	287	906	42	489	1225	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	268	391	383	63	160	357	287	906	30	489	1225	254
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	359	175	171	180	52	116	158	707	599	259	656	136
Arrive On Green	0.20	0.20	0.20	0.10	0.10	0.10	0.09	0.38	0.38	0.14	0.43	0.43
Sat Flow, veh/h	1795	874	857	1795	519	1158	1781	1870	1585	1795	1515	314
Grp Volume(v), veh/h	268	0	774	63	0	517	287	906	30	489	0	1479
Grp Sat Flow(s),veh/h/ln	1795	0	1731	1795	0	1677	1781	1870	1585	1795	0	1829
Q Serve(g_s), s	12.6	0.0	18.0	2.9	0.0	9.0	8.0	34.0	1.1	13.0	0.0	39.0
Cycle Q Clear(g_c), s	12.6	0.0	18.0	2.9	0.0	9.0	8.0	34.0	1.1	13.0	0.0	39.0
Prop In Lane	1.00		0.49	1.00		0.69	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	359	0	346	180	0	168	158	707	599	259	0	792
V/C Ratio(X)	0.75	0.00	2.24	0.35	0.00	3.08	1.81	1.28	0.05	1.89	0.00	1.87
Avail Cap(c_a), veh/h	359	0	346	180	0	168	158	707	599	259	0	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	36.0	37.8	0.0	40.5	41.0	28.0	17.8	38.5	0.0	25.5
Incr Delay (d2), s/veh	8.3	0.0	565.3	1.2	0.0	953.1	389.5	137.7	0.0	412.8	0.0	394.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	61.8	1.3	0.0	48.0	20.6	41.4	0.4	35.3	0.0	102.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	0.0	601.3	38.9	0.0	993.6	430.5	165.7	17.8	451.3	0.0	420.2
LnGrp LOS	D	A	F	D	A	F	F	F	B	F	A	F
Approach Vol, veh/h		1042			580			1223			1968	
Approach Delay, s/veh		457.5			889.9			224.2			427.9	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	38.0		22.0	12.0	43.0		13.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	34.0		18.0	8.0	39.0		9.0				
Max Q Clear Time (g_c+I1), s	15.0	36.0		20.0	10.0	41.0		11.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			438.2									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	77	80	58	97	296	47	1373	65	360	1876	146
Future Volume (veh/h)	115	77	80	58	97	296	47	1373	65	360	1876	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	115	77	49	58	97	104	47	1373	65	360	1876	114
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	189	193	163	207	194	165	57	1587	75	411	2351	1049
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.46	0.46	0.23	0.66	0.66
Sat Flow, veh/h	1172	1856	1572	1265	1870	1585	1781	3455	163	1795	3582	1598
Grp Volume(v), veh/h	115	77	49	58	97	104	47	705	733	360	1876	114
Grp Sat Flow(s),veh/h/ln	1172	1856	1572	1265	1870	1585	1781	1777	1841	1795	1791	1598
Q Serve(g_s), s	3.2	2.2	1.7	2.6	2.8	3.6	1.5	20.6	20.7	11.2	21.8	1.5
Cycle Q Clear(g_c), s	6.0	2.2	1.7	4.8	2.8	3.6	1.5	20.6	20.7	11.2	21.8	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	189	193	163	207	194	165	57	816	846	411	2351	1049
V/C Ratio(X)	0.61	0.40	0.30	0.28	0.50	0.63	0.82	0.86	0.87	0.87	0.80	0.11
Avail Cap(c_a), veh/h	189	193	163	207	194	165	92	861	892	435	2417	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	24.2	24.0	26.5	24.5	24.8	27.8	14.0	14.0	21.5	7.2	3.7
Incr Delay (d2), s/veh	5.6	1.3	1.0	0.7	2.0	7.6	24.9	8.7	8.7	17.1	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.0	0.6	0.8	1.3	1.6	1.0	8.8	9.1	6.2	5.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	25.6	25.0	27.2	26.5	32.5	52.7	22.7	22.7	38.6	9.1	3.7
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	A	A
Approach Vol, veh/h		241			259			1485			2350	
Approach Delay, s/veh		29.3			29.0			23.7			13.4	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	30.6		10.0	5.9	41.9		10.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	14.0	28.0		6.0	3.0	39.0		6.0
Max Q Clear Time (g_c+I1), s	13.2	22.7		8.0	3.5	23.8		6.8
Green Ext Time (p_c), s	0.1	3.9		0.0	0.0	11.9		0.0

Intersection Summary			
HCM 6th Ctrl Delay			18.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	531	537	309	205	476	441	426	1268	130	797	1985	494
Future Volume (veh/h)	531	537	309	205	476	441	426	1268	130	797	1985	494
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	531	537	171	205	476	342	426	1268	130	797	1985	345
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	558	646	288	216	502	224	453	1418	145	837	2106	654
Arrive On Green	0.16	0.18	0.18	0.12	0.14	0.14	0.13	0.30	0.30	0.24	0.41	0.41
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4743	486	3483	5147	1598
Grp Volume(v), veh/h	531	537	171	205	476	342	426	917	481	797	1985	345
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1798	1742	1716	1598
Q Serve(g_s), s	15.1	14.4	9.8	11.3	13.2	14.0	12.1	25.5	25.5	22.5	37.0	16.3
Cycle Q Clear(g_c), s	15.1	14.4	9.8	11.3	13.2	14.0	12.1	25.5	25.5	22.5	37.0	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	558	646	288	216	502	224	453	1026	538	837	2106	654
V/C Ratio(X)	0.95	0.83	0.59	0.95	0.95	1.53	0.94	0.89	0.89	0.95	0.94	0.53
Avail Cap(c_a), veh/h	558	646	288	216	502	224	453	1031	540	837	2113	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	39.5	37.6	43.6	42.6	42.9	43.0	33.5	33.5	37.4	28.4	22.2
Incr Delay (d2), s/veh	26.5	9.1	3.3	47.3	27.6	258.6	27.7	10.1	17.2	20.4	9.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	7.1	4.1	7.8	7.7	21.5	6.9	11.8	13.4	11.8	16.4	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	48.5	40.8	90.9	70.1	301.5	70.7	43.6	50.7	57.7	37.7	23.0
LnGrp LOS	E	D	D	F	E	F	E	D	D	E	D	C
Approach Vol, veh/h		1239			1023			1824			3127	
Approach Delay, s/veh		55.8			151.6			51.8			41.2	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	33.9	16.0	22.0	17.0	44.9	20.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	30.0	12.0	18.0	13.0	41.0	16.0	14.0
Max Q Clear Time (g_c+I1), s	24.5	27.5	13.3	16.4	14.1	39.0	17.1	16.0
Green Ext Time (p_c), s	0.0	1.9	0.0	0.7	0.0	1.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	187	442	106	2053	2843	181
Future Volume (veh/h)	187	442	106	2053	2843	181
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	187	234	106	2053	2843	181
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	325	289	112	3561	2948	184
Arrive On Green	0.18	0.18	0.03	0.69	0.60	0.60
Sat Flow, veh/h	1810	1610	3483	5316	5121	309
Grp Volume(v), veh/h	187	234	106	2053	1952	1072
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1830
Q Serve(g_s), s	5.9	8.7	1.9	12.7	33.2	35.6
Cycle Q Clear(g_c), s	5.9	8.7	1.9	12.7	33.2	35.6
Prop In Lane	1.00	1.00	1.00			0.17
Lane Grp Cap(c), veh/h	325	289	112	3561	2042	1089
V/C Ratio(X)	0.58	0.81	0.95	0.58	0.96	0.98
Avail Cap(c_a), veh/h	408	363	112	3561	2042	1089
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	24.5	30.0	4.9	11.8	12.3
Incr Delay (d2), s/veh	1.6	10.5	67.8	0.2	11.3	23.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.2	1.8	2.9	12.5	17.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.9	35.0	97.8	5.1	23.1	35.8
LnGrp LOS	C	C	F	A	C	D
Approach Vol, veh/h	421			2159	3024	
Approach Delay, s/veh	30.5			9.7	27.6	
Approach LOS	C			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.0		15.2	6.0	41.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		14.0	2.0	37.0
Max Q Clear Time (g_c+I1), s		14.7		10.7	3.9	37.6
Green Ext Time (p_c), s		19.6		0.5	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			20.9
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	418	356	138	312	329	236	1722	226	535	2591	177
Future Volume (veh/h)	239	418	356	138	312	329	236	1722	226	535	2591	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	239	418	356	138	312	227	236	1722	134	535	2591	126
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	161	268	227	100	209	178	160	1473	657	376	1895	845
Arrive On Green	0.09	0.14	0.14	0.06	0.11	0.11	0.09	0.41	0.41	0.21	0.53	0.53
Sat Flow, veh/h	1810	1854	1569	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	239	407	367	138	312	227	236	1722	134	535	2591	126
Grp Sat Flow(s),veh/h/ln	1810	1805	1618	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	8.0	13.0	13.0	5.0	10.0	10.0	8.0	37.0	4.9	19.0	48.0	3.6
Cycle Q Clear(g_c), s	8.0	13.0	13.0	5.0	10.0	10.0	8.0	37.0	4.9	19.0	48.0	3.6
Prop In Lane	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	261	234	100	209	178	160	1473	657	376	1895	845
V/C Ratio(X)	1.49	1.56	1.57	1.38	1.49	1.28	1.48	1.17	0.20	1.42	1.37	0.15
Avail Cap(c_a), veh/h	161	261	234	100	209	178	160	1473	657	376	1895	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	38.5	38.5	42.5	40.0	40.0	41.0	26.5	17.0	35.5	21.0	10.6
Incr Delay (d2), s/veh	248.7	270.4	276.5	223.0	243.9	161.6	246.0	83.9	0.2	205.1	168.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.2	23.0	8.4	18.7	11.8	14.4	31.9	1.8	29.5	62.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	289.7	308.9	315.0	265.5	283.9	201.6	287.0	110.4	17.2	240.6	189.6	10.7
LnGrp LOS	F	F	F	F	F	F	F	F	B	F	F	B
Approach Vol, veh/h		1013			677			2092			3252	
Approach Delay, s/veh		306.6			252.5			124.3			191.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	41.0	9.0	17.0	12.0	52.0	12.0	14.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	37.0	5.0	13.0	8.0	48.0	8.0	10.0
Max Q Clear Time (g_c+I1), s	21.0	39.0	7.0	15.0	10.0	50.0	10.0	12.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	193.8
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	291	430	77	210	193	402	1973	93	224	2732	39
Future Volume (veh/h)	57	291	430	77	210	193	402	1973	93	224	2732	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	57	291	430	77	210	193	402	1973	93	224	2732	39
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	92	222	198	90	225	196	302	2074	97	224	2305	33
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.09	0.60	0.60	0.13	0.64	0.64
Sat Flow, veh/h	982	1777	1585	732	1798	1568	3456	3456	162	1795	3615	51
Grp Volume(v), veh/h	57	291	430	77	207	196	402	1007	1059	224	1350	1421
Grp Sat Flow(s),veh/h/ln	982	1777	1585	732	1777	1588	1728	1777	1841	1795	1791	1876
Q Serve(g_s), s	0.2	10.0	10.0	0.0	9.3	9.8	7.0	41.8	43.4	10.0	51.0	51.0
Cycle Q Clear(g_c), s	10.0	10.0	10.0	10.0	9.3	9.8	7.0	41.8	43.4	10.0	51.0	51.0
Prop In Lane	1.00		1.00	1.00		0.99	1.00		0.09	1.00		0.03
Lane Grp Cap(c), veh/h	92	222	198	90	222	199	302	1066	1105	224	1142	1196
V/C Ratio(X)	0.62	1.31	2.17	0.86	0.93	0.99	1.33	0.94	0.96	1.00	1.18	1.19
Avail Cap(c_a), veh/h	92	222	198	90	222	199	302	1066	1105	224	1142	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	35.0	35.0	40.0	34.7	34.9	36.5	14.8	15.1	35.0	14.5	14.5
Incr Delay (d2), s/veh	11.9	168.0	543.0	51.2	42.4	59.4	169.3	15.9	18.0	59.5	91.3	93.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	14.6	33.6	2.8	6.5	7.0	10.0	18.6	20.5	7.9	45.2	48.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	203.0	578.0	91.2	77.0	94.3	205.8	30.7	33.1	94.5	105.8	107.8
LnGrp LOS	D	F	F	F	E	F	F	C	C	F	F	F
Approach Vol, veh/h		778			480			2468			2995	
Approach Delay, s/veh		399.2			86.3			60.3			105.9	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.0	52.0		14.0	11.0	55.0		14.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	48.0		10.0	7.0	51.0		10.0
Max Q Clear Time (g_c+I1), s	12.0	45.4		12.0	9.0	53.0		12.0
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	121.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	265	298	111	255	58	297	1687	135	156	2661	32
Future Volume (veh/h)	8	265	298	111	255	58	297	1687	135	156	2661	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	265	298	111	255	36	297	1687	135	156	2661	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	179	177	199	72	415	351	212	1886	149	160	1942	23
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.12	0.57	0.57	0.09	0.54	0.54
Sat Flow, veh/h	1088	804	904	854	1885	1598	1767	3309	262	1781	3596	43
Grp Volume(v), veh/h	8	0	563	111	255	36	297	890	932	156	1312	1381
Grp Sat Flow(s),veh/h/ln	1088	0	1708	854	1885	1598	1767	1763	1808	1781	1777	1863
Q Serve(g_s), s	0.7	0.0	22.0	0.0	12.2	1.8	12.0	43.9	45.7	8.7	54.0	54.0
Cycle Q Clear(g_c), s	12.9	0.0	22.0	22.0	12.2	1.8	12.0	43.9	45.7	8.7	54.0	54.0
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.14	1.00		0.02
Lane Grp Cap(c), veh/h	179	0	376	72	415	351	212	1005	1031	160	959	1006
V/C Ratio(X)	0.04	0.00	1.50	1.54	0.61	0.10	1.40	0.89	0.90	0.97	1.37	1.37
Avail Cap(c_a), veh/h	179	0	376	72	415	351	212	1005	1031	160	959	1006
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	39.0	50.0	35.2	31.1	44.0	18.7	19.1	45.4	23.0	23.0
Incr Delay (d2), s/veh	0.1	0.0	237.9	301.3	2.7	0.1	206.2	9.6	11.1	62.8	172.0	174.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	33.9	7.8	5.8	0.7	17.3	19.0	20.6	6.6	66.5	70.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	276.9	351.3	37.9	31.2	250.2	28.3	30.1	108.2	195.0	197.2
LnGrp LOS	D	A	F	F	D	C	F	C	C	F	F	F
Approach Vol, veh/h		571			402			2119			2849	
Approach Delay, s/veh		273.6			123.8			60.2			191.3	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	61.0		26.0	16.0	58.0		26.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	57.0		22.0	12.0	54.0		22.0
Max Q Clear Time (g_c+I1), s	10.7	47.7		24.0	14.0	56.0		24.0
Green Ext Time (p_c), s	0.0	7.5		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		147.9
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1721	960	45	1353	325	697	507	69	879	1355	12
Future Volume (veh/h)	12	1721	960	45	1353	325	697	507	69	879	1355	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	1721	674	45	1353	232	697	507	69	879	1355	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	13	1242	554	36	1359	1067	514	593	80	877	1057	9
Arrive On Green	0.01	0.37	0.37	0.02	0.38	0.38	0.15	0.19	0.19	0.26	0.30	0.30
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3119	423	3374	3524	31
Grp Volume(v), veh/h	12	1721	674	45	1353	232	697	286	290	879	667	700
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1779	1687	1735	1820
Q Serve(g_s), s	0.7	37.0	37.0	2.0	38.0	5.6	15.0	15.7	15.8	26.0	30.0	30.0
Cycle Q Clear(g_c), s	0.7	37.0	37.0	2.0	38.0	5.6	15.0	15.7	15.8	26.0	30.0	30.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.02
Lane Grp Cap(c), veh/h	13	1242	554	36	1359	1067	514	335	338	877	520	546
V/C Ratio(X)	0.93	1.39	1.22	1.26	1.00	0.22	1.36	0.85	0.86	1.00	1.28	1.28
Avail Cap(c_a), veh/h	34	1242	554	36	1359	1067	514	335	338	877	520	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	31.5	31.5	49.0	30.8	20.8	42.5	39.1	39.2	37.0	35.0	35.0
Incr Delay (d2), s/veh	96.9	178.6	113.2	238.7	23.4	0.1	172.3	18.7	19.3	30.9	140.8	140.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	45.2	30.3	3.2	20.0	1.8	18.6	8.4	8.6	14.2	32.7	34.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.5	210.1	144.7	287.7	54.2	20.9	214.8	57.8	58.5	67.9	175.8	175.5
LnGrp LOS	F	F	F	F	D	C	F	E	E	F	F	F
Approach Vol, veh/h		2407			1630			1273			2246	
Approach Delay, s/veh		191.5			55.9			143.9			133.5	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	23.0	6.0	41.0	19.0	34.0	4.8	42.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	19.0	2.0	37.0	15.0	30.0	2.0	37.0
Max Q Clear Time (g_c+I1), s	28.0	17.8	4.0	39.0	17.0	32.0	2.7	40.0
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	137.0
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
9: Fairview Road & Union Road

05/10/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	146	46	44	341	401	207
Future Volume (veh/h)	146	46	44	341	401	207
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	146	46	44	341	401	207
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	215	192	637	1260	1270	1076
Arrive On Green	0.12	0.12	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1781	1585	806	1856	1870	1585
Grp Volume(v), veh/h	146	46	44	341	401	207
Grp Sat Flow(s),veh/h/ln	1781	1585	806	1856	1870	1585
Q Serve(g_s), s	3.5	1.2	1.1	3.2	3.9	2.2
Cycle Q Clear(g_c), s	3.5	1.2	5.0	3.2	3.9	2.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	215	192	637	1260	1270	1076
V/C Ratio(X)	0.68	0.24	0.07	0.27	0.32	0.19
Avail Cap(c_a), veh/h	813	723	637	1260	1270	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	17.9	4.0	2.8	3.0	2.7
Incr Delay (d2), s/veh	3.7	0.6	0.2	0.5	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	0.1	0.7	0.8	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.6	18.5	4.2	3.4	3.6	3.1
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	192			385	608	
Approach Delay, s/veh	21.6			3.5	3.4	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		35.0		9.9		35.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5
Max Q Clear Time (g_c+I1), s		7.0		5.5		5.9
Green Ext Time (p_c), s		2.4		0.5		3.3

Intersection Summary			
HCM 6th Ctrl Delay			6.4
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	277	119	32	209	83	84	361	49	141	553	243
Future Volume (veh/h)	156	277	119	32	209	83	84	361	49	141	553	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	156	277	80	32	209	61	84	361	40	141	553	112
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	202	463	392	38	292	248	107	611	518	184	696	590
Arrive On Green	0.11	0.25	0.25	0.02	0.15	0.15	0.06	0.33	0.33	0.10	0.37	0.37
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	156	277	80	32	209	61	84	361	40	141	553	112
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	4.5	6.9	2.1	0.9	5.6	1.8	2.5	8.6	0.9	4.1	14.0	2.5
Cycle Q Clear(g_c), s	4.5	6.9	2.1	0.9	5.6	1.8	2.5	8.6	0.9	4.1	14.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	463	392	38	292	248	107	611	518	184	696	590
V/C Ratio(X)	0.77	0.60	0.20	0.85	0.72	0.25	0.79	0.59	0.08	0.77	0.79	0.19
Avail Cap(c_a), veh/h	372	710	602	136	465	394	233	978	829	402	1162	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	17.7	15.9	25.9	21.4	19.8	24.6	14.8	12.3	23.2	14.9	11.3
Incr Delay (d2), s/veh	6.2	1.2	0.3	37.4	3.3	0.5	11.8	0.9	0.1	6.6	2.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.8	0.7	0.8	2.5	0.6	1.3	3.3	0.3	1.9	5.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	19.0	16.2	63.4	24.6	20.3	36.5	15.7	12.3	29.8	17.0	11.4
LnGrp LOS	C	B	B	E	C	C	D	B	B	C	B	B
Approach Vol, veh/h		513			302			485			806	
Approach Delay, s/veh		21.6			27.9			19.0			18.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	21.5	5.1	17.0	7.2	23.8	10.0	12.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	28.0	4.0	20.0	7.0	33.0	11.0	13.0
Max Q Clear Time (g_c+I1), s	6.1	10.6	2.9	8.9	4.5	16.0	6.5	7.6
Green Ext Time (p_c), s	0.2	2.1	0.0	1.4	0.0	3.8	0.2	0.6

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

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	60	206	151	55	144	72	110	414	79	103	734	136
Future Vol, veh/h	60	206	151	55	144	72	110	414	79	103	734	136
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	2	2	2	4	4	2	2	2	2
Mvmt Flow	60	206	151	55	144	72	110	414	79	103	734	136

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1722	1653	734	1821	1710	414	870	0	0	493	0	0
Stage 1	940	940	-	634	634	-	-	-	-	-	-	-
Stage 2	782	713	-	1187	1076	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	71	~ 98	423	60	~ 91	638	766	-	-	1071	-	-
Stage 1	319	342	-	467	473	-	-	-	-	-	-	-
Stage 2	390	435	-	230	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 76	423	-	~ 70	638	766	-	-	1071	-	-
Mov Cap-2 Maneuver	-	~ 76	-	-	~ 70	-	-	-	-	-	-	-
Stage 1	273	309	-	400	405	-	-	-	-	-	-	-
Stage 2	191	372	-	~ 45	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.9	0.9
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	766	-	-	-	423	-	638	1071	-	-
HCM Lane V/C Ratio	0.144	-	-	-	0.357	-	0.113	0.096	-	-
HCM Control Delay (s)	10.5	-	-	-	18.2	-	11.4	8.7	-	-
HCM Lane LOS	B	-	-	-	C	-	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	1.6	-	0.4	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	107	150	132	416	846	117
Future Volume (veh/h)	107	150	132	416	846	117
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	107	88	132	416	846	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	169	150	168	1333	1029	872
Arrive On Green	0.09	0.09	0.10	0.73	0.55	0.55
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	107	88	132	416	846	63
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	2.6	2.4	3.4	3.6	16.9	0.9
Cycle Q Clear(g_c), s	2.6	2.4	3.4	3.6	16.9	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	169	150	168	1333	1029	872
V/C Ratio(X)	0.63	0.59	0.78	0.31	0.82	0.07
Avail Cap(c_a), veh/h	234	208	267	1840	1445	1225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	19.8	20.2	2.2	8.5	4.9
Incr Delay (d2), s/veh	3.9	3.6	7.8	0.1	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.3	1.6	0.3	5.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.8	23.4	28.0	2.3	11.3	4.9
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	195			548	909	
Approach Delay, s/veh	23.6			8.5	10.8	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		37.3		8.3	8.4	28.9
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		46.0		6.0	7.0	35.0
Max Q Clear Time (g_c+I1), s		5.6		4.6	5.4	18.9
Green Ext Time (p_c), s		2.9		0.1	0.0	6.0

Intersection Summary			
HCM 6th Ctrl Delay			11.6
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	379	0	0	375
Future Vol, veh/h	0	0	379	0	0	375
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	0	379	0	0	375

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	754	379	0	0	379	0
Stage 1	379	-	-	-	-	-
Stage 2	375	-	-	-	-	-
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	377	668	-	-	1179	-
Stage 1	692	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	668	-	-	1179	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1179	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Intersection Delay, s/veh	460.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	130	972	356	0	834	196	224	72	12	174	125	93
Future Vol, veh/h	130	972	356	0	834	196	224	72	12	174	125	93
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	130	972	356	0	834	196	224	72	12	174	125	93
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	571.3	591.2	47.4	32.7
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	86%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	14%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	224	84	130	972	356	0	834	196	174	125	93
LT Vol	224	0	130	0	0	0	0	0	174	0	0
Through Vol	0	72	0	972	0	0	834	0	0	125	0
RT Vol	0	12	0	0	356	0	0	196	0	0	93
Lane Flow Rate	224	84	130	972	356	0	834	196	174	125	93
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.751	0.268	0.387	2.761	0.942	0	2.527	0.556	0.577	0.397	0.278
Departure Headway (Hd)	16.358	15.721	13.094	12.564	11.822	12.825	12.825	12.098	16.685	16.151	15.404
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	224	230	277	301	310	0	292	300	219	225	235
Service Time	14.058	13.421	10.794	10.264	9.522	10.525	10.525	9.798	14.385	13.851	13.104
HCM Lane V/C Ratio	1	0.365	0.469	3.229	1.148	0	2.856	0.653	0.795	0.556	0.396
HCM Control Delay	56.1	24.1	23.8	826.9	73.5	15.5	723.3	28.9	39.9	29.1	23.9
HCM Lane LOS	F	C	C	F	F	N	F	D	E	D	C
HCM 95th-tile Q	5.2	1	1.7	67.5	9.3	0	58.2	3.2	3.2	1.8	1.1

Intersection	
Int Delay, s/veh	149

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	1453	53	41	1091	35	34	4	27	18	4	100
Future Vol, veh/h	166	1453	53	41	1091	35	34	4	27	18	4	100
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	166	1453	53	41	1091	35	34	4	27	18	4	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1126	0	0	1506	0	0	3028	2993	1453	3000	3011	1091
Stage 1	-	-	-	-	-	-	1785	1785	-	1173	1173	-
Stage 2	-	-	-	-	-	-	1243	1208	-	1827	1838	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	624	-	-	442	-	-	~ 8	13	158	~ 8	13	258
Stage 1	-	-	-	-	-	-	103	132	-	231	263	-
Stage 2	-	-	-	-	-	-	212	254	-	97	124	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	624	-	-	442	-	-	~ 2	9	158	~ 3	9	258
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	9	-	~ 3	9	-
Stage 1	-	-	-	-	-	-	76	97	-	170	239	-
Stage 2	-	-	-	-	-	-	116	230	-	57	91	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.5	$ 5581.3	$ 698.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	2	9	158	624	-	-	442	-	-	3	9	258
HCM Lane V/C Ratio	17	0.444	0.171	0.266	-	-	0.093	-	-	6	0.444	0.388
HCM Control Delay (s)	$ 10575.1	$ 589.2	32.4	12.8	-	-	14	-	-	$ 4452.6	$ 589.2	27.5
HCM Lane LOS	F	F	D	B	-	-	B	-	-	F	F	D
HCM 95th %tile Q(veh)	6.1	1	0.6	1.1	-	-	0.3	-	-	3.7	1	1.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	219	228	48	396	470	323	977	88	165	531	165
Future Volume (veh/h)	275	219	228	48	396	470	323	977	88	165	531	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	275	219	228	48	396	470	323	977	43	165	531	165
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	226	107	111	491	215	255	196	660	559	97	401	125
Arrive On Green	0.13	0.13	0.13	0.28	0.28	0.28	0.11	0.36	0.36	0.06	0.30	0.30
Sat Flow, veh/h	1697	799	832	1767	773	917	1767	1856	1572	1739	1336	415
Grp Volume(v), veh/h	275	0	447	48	0	866	323	977	43	165	0	696
Grp Sat Flow(s),veh/h/ln	1697	0	1632	1767	0	1690	1767	1856	1572	1739	0	1751
Q Serve(g_s), s	12.0	0.0	12.0	1.8	0.0	25.0	10.0	32.0	1.6	5.0	0.0	27.0
Cycle Q Clear(g_c), s	12.0	0.0	12.0	1.8	0.0	25.0	10.0	32.0	1.6	5.0	0.0	27.0
Prop In Lane	1.00		0.51	1.00		0.54	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	226	0	218	491	0	470	196	660	559	97	0	525
V/C Ratio(X)	1.22	0.00	2.05	0.10	0.00	1.84	1.64	1.48	0.08	1.71	0.00	1.32
Avail Cap(c_a), veh/h	226	0	218	491	0	470	196	660	559	97	0	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	39.0	24.1	0.0	32.5	40.0	29.0	19.2	42.5	0.0	31.5
Incr Delay (d2), s/veh	130.4	0.0	490.2	0.1	0.0	388.1	312.0	224.5	0.1	358.5	0.0	159.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	34.3	0.8	0.0	60.5	21.3	54.7	0.6	11.7	0.0	34.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	169.4	0.0	529.2	24.2	0.0	420.6	352.0	253.5	19.3	401.0	0.0	190.5
LnGrp LOS	F	A	F	C	A	F	F	F	B	F	A	F
Approach Vol, veh/h		722			914			1343			861	
Approach Delay, s/veh		392.2			399.8			269.7			230.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	36.0		16.0	14.0	31.0		29.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	32.0		12.0	10.0	27.0		25.0				
Max Q Clear Time (g_c+I1), s	7.0	34.0		14.0	12.0	29.0		27.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		315.0
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	112	30	48	73	464	67	1588	84	157	748	49
Future Volume (veh/h)	79	112	30	48	73	464	67	1588	84	157	748	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	79	112	21	48	73	239	67	1588	84	157	748	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	5	5	5
Cap, veh/h	286	343	290	293	348	295	84	1705	90	182	1934	862
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.50	0.50	0.10	0.56	0.56
Sat Flow, veh/h	1051	1841	1560	1257	1870	1585	1767	3407	179	1739	3469	1547
Grp Volume(v), veh/h	79	112	21	48	73	239	67	818	854	157	748	33
Grp Sat Flow(s),veh/h/ln	1051	1841	1560	1257	1870	1585	1767	1763	1823	1739	1735	1547
Q Serve(g_s), s	4.0	3.0	0.6	2.0	1.9	8.3	2.2	24.8	25.3	5.1	7.0	0.6
Cycle Q Clear(g_c), s	5.9	3.0	0.6	5.0	1.9	8.3	2.2	24.8	25.3	5.1	7.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	286	343	290	293	348	295	84	882	913	182	1934	862
V/C Ratio(X)	0.28	0.33	0.07	0.16	0.21	0.81	0.79	0.93	0.94	0.86	0.39	0.04
Avail Cap(c_a), veh/h	328	417	353	343	423	359	185	890	920	182	1934	862
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	20.3	19.3	22.4	19.8	22.4	27.1	13.4	13.5	25.3	7.2	5.8
Incr Delay (d2), s/veh	0.5	0.6	0.1	0.3	0.3	11.0	15.3	15.4	16.3	32.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.3	0.2	0.6	0.8	3.7	1.2	11.5	12.3	3.6	2.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	20.8	19.4	22.7	20.1	33.4	42.4	28.8	29.7	57.8	7.3	5.8
LnGrp LOS	C	C	B	C	C	C	D	C	C	E	A	A
Approach Vol, veh/h		212			360			1739			938	
Approach Delay, s/veh		21.4			29.3			29.8			15.7	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	32.8		14.7	6.7	36.0		14.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	29.0		13.0	6.0	29.0		13.0
Max Q Clear Time (g_c+I1), s	7.1	27.3		7.9	4.2	9.0		10.3
Green Ext Time (p_c), s	0.0	1.5		0.4	0.0	5.3		0.4

Intersection Summary			
HCM 6th Ctrl Delay			25.1
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	316	218	203	696	647	380	1404	77	362	896	408
Future Volume (veh/h)	406	316	218	203	696	647	380	1404	77	362	896	408
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	406	316	100	203	696	473	380	1404	77	362	896	257
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	416	1020	455	239	1069	477	447	1514	83	375	1448	449
Arrive On Green	0.12	0.29	0.29	0.13	0.30	0.30	0.13	0.31	0.31	0.11	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3428	4915	270	3401	5025	1560
Grp Volume(v), veh/h	406	316	100	203	696	473	380	965	516	362	896	257
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1714	1689	1807	1700	1675	1560
Q Serve(g_s), s	11.7	6.9	4.8	11.1	17.0	29.7	10.8	27.6	27.6	10.6	15.4	14.0
Cycle Q Clear(g_c), s	11.7	6.9	4.8	11.1	17.0	29.7	10.8	27.6	27.6	10.6	15.4	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	416	1020	455	239	1069	477	447	1041	557	375	1448	449
V/C Ratio(X)	0.98	0.31	0.22	0.85	0.65	0.99	0.85	0.93	0.93	0.97	0.62	0.57
Avail Cap(c_a), veh/h	416	1020	455	357	1069	477	481	1050	562	375	1448	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	27.8	27.0	42.2	30.3	34.7	42.4	33.4	33.4	44.2	30.8	30.3
Incr Delay (d2), s/veh	37.8	0.2	0.2	11.8	1.4	39.0	12.9	13.6	21.6	37.2	0.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	2.9	1.8	5.6	7.3	16.3	5.3	13.0	15.1	6.3	6.2	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.5	28.0	27.3	54.0	31.7	73.8	55.3	47.0	55.1	81.4	31.6	32.0
LnGrp LOS	F	C	C	D	C	E	E	D	E	F	C	C
Approach Vol, veh/h		822			1372			1861			1515	
Approach Delay, s/veh		54.3			49.5			50.9			43.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	34.7	17.4	32.6	17.0	32.7	16.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	31.0	20.0	22.0	14.0	28.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	12.6	29.6	13.1	8.9	12.8	17.4	13.7	31.7
Green Ext Time (p_c), s	0.0	1.1	0.3	1.9	0.2	5.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	128	355	243	2223	1370	138
Future Volume (veh/h)	128	355	243	2223	1370	138
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1856	1856	1826	1826
Adj Flow Rate, veh/h	128	151	243	2223	1370	138
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	3	3	5	5
Cap, veh/h	245	218	368	3625	2466	248
Arrive On Green	0.14	0.14	0.11	0.72	0.54	0.54
Sat Flow, veh/h	1753	1560	3428	5233	4766	464
Grp Volume(v), veh/h	128	151	243	2223	989	519
Grp Sat Flow(s),veh/h/ln	1753	1560	1714	1689	1662	1742
Q Serve(g_s), s	3.7	5.1	3.8	12.3	10.9	10.9
Cycle Q Clear(g_c), s	3.7	5.1	3.8	12.3	10.9	10.9
Prop In Lane	1.00	1.00	1.00			0.27
Lane Grp Cap(c), veh/h	245	218	368	3625	1781	934
V/C Ratio(X)	0.52	0.69	0.66	0.61	0.56	0.56
Avail Cap(c_a), veh/h	697	621	620	4580	2163	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	22.7	23.7	4.0	8.5	8.5
Incr Delay (d2), s/veh	1.7	3.9	2.0	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.2	1.5	2.0	3.0	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.8	26.6	25.7	4.2	8.8	9.0
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	279			2466	1508	
Approach Delay, s/veh	25.3			6.3	8.8	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		43.6		11.7	9.9	33.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		50.0		22.0	10.0	36.0
Max Q Clear Time (g_c+I1), s		14.3		7.1	5.8	12.9
Green Ext Time (p_c), s		25.3		0.7	0.3	11.8
Intersection Summary						
HCM 6th Ctrl Delay			8.4			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	168	138	145	376	520	303	2262	94	219	1058	178
Future Volume (veh/h)	106	168	138	145	376	520	303	2262	94	219	1058	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	106	168	138	145	376	288	303	2262	67	219	1058	152
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	54	143	111	137	230	195	326	1790	798	162	1453	648
Arrive On Green	0.03	0.08	0.08	0.08	0.12	0.12	0.18	0.51	0.51	0.09	0.42	0.42
Sat Flow, veh/h	1739	1865	1437	1781	1870	1585	1767	3526	1572	1753	3497	1560
Grp Volume(v), veh/h	106	155	151	145	376	288	303	2262	67	219	1058	152
Grp Sat Flow(s),veh/h/ln	1739	1735	1567	1781	1870	1585	1767	1763	1572	1753	1749	1560
Q Serve(g_s), s	2.0	5.0	5.0	5.0	8.0	8.0	11.0	33.0	1.4	6.0	16.5	4.1
Cycle Q Clear(g_c), s	2.0	5.0	5.0	5.0	8.0	8.0	11.0	33.0	1.4	6.0	16.5	4.1
Prop In Lane	1.00		0.92	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	133	121	137	230	195	326	1790	798	162	1453	648
V/C Ratio(X)	1.98	1.17	1.25	1.06	1.63	1.48	0.93	1.26	0.08	1.35	0.73	0.23
Avail Cap(c_a), veh/h	54	133	121	137	230	195	326	1790	798	162	1453	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	30.0	30.0	30.0	28.5	28.5	26.1	16.0	8.2	29.5	15.9	12.3
Incr Delay (d2), s/veh	501.3	129.2	163.2	93.3	303.9	239.9	32.0	123.3	0.0	193.9	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	6.8	7.3	5.6	22.8	15.9	7.2	41.5	0.4	11.1	6.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	532.8	159.2	193.2	123.3	332.4	268.4	58.1	139.3	8.3	223.4	17.8	12.5
LnGrp LOS	F	F	F	F	F	F	E	F	A	F	B	B
Approach Vol, veh/h		412			809			2632			1429	
Approach Delay, s/veh		267.7			272.1			126.6			48.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	37.0	9.0	9.0	16.0	31.0	6.0	12.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	33.0	5.0	5.0	12.0	27.0	2.0	8.0
Max Q Clear Time (g_c+I1), s	8.0	35.0	7.0	7.0	13.0	18.5	4.0	10.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	138.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	337	219	246	386	201	240	2238	79	103	1210	13
Future Volume (veh/h)	42	337	219	246	386	201	240	2238	79	103	1210	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	42	337	219	246	386	201	240	2238	79	103	1210	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	219	643	409	229	712	366	312	1762	62	77	1618	17
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.09	0.51	0.51	0.04	0.46	0.46
Sat Flow, veh/h	822	2066	1316	860	2289	1175	3401	3447	121	1725	3487	37
Grp Volume(v), veh/h	42	287	269	246	301	286	240	1129	1188	103	597	626
Grp Sat Flow(s),veh/h/ln	822	1763	1619	860	1791	1674	1700	1749	1819	1725	1721	1804
Q Serve(g_s), s	4.0	12.0	12.4	15.6	12.5	12.8	6.2	46.0	46.0	4.0	25.6	25.6
Cycle Q Clear(g_c), s	16.8	12.0	12.4	28.0	12.5	12.8	6.2	46.0	46.0	4.0	25.6	25.6
Prop In Lane	1.00		0.81	1.00		0.70	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	219	548	504	229	557	521	312	894	930	77	798	837
V/C Ratio(X)	0.19	0.52	0.54	1.07	0.54	0.55	0.77	1.26	1.28	1.34	0.75	0.75
Avail Cap(c_a), veh/h	219	548	504	229	557	521	340	894	930	77	798	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	25.5	25.6	39.9	25.7	25.8	39.9	22.0	22.0	43.0	19.8	19.8
Incr Delay (d2), s/veh	0.4	0.9	1.1	80.3	1.1	1.2	9.5	127.3	133.5	219.3	3.9	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.0	4.8	10.2	5.3	5.1	3.0	48.7	52.2	6.4	10.5	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	26.4	26.7	120.2	26.7	27.0	49.4	149.3	155.5	262.3	23.7	23.6
LnGrp LOS	C	C	C	F	C	C	D	F	F	F	C	C
Approach Vol, veh/h		598			833			2557			1326	
Approach Delay, s/veh		27.0			54.4			142.8			42.2	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	50.0		32.0	12.3	45.7		32.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	46.0		28.0	9.0	41.0		28.0
Max Q Clear Time (g_c+I1), s	6.0	48.0		18.8	8.2	27.6		30.0
Green Ext Time (p_c), s	0.0	0.0		2.6	0.1	6.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	90.8
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	249	155	130	356	200	221	2229	239	52	1020	4
Future Volume (veh/h)	32	249	155	130	356	200	221	2229	239	52	1020	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	249	155	130	356	93	221	2229	239	52	1020	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	177	300	186	133	528	447	254	1867	197	34	1578	6
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.14	0.58	0.58	0.02	0.46	0.46
Sat Flow, veh/h	934	1070	666	989	1885	1598	1767	3218	339	1697	3458	14
Grp Volume(v), veh/h	32	0	404	130	356	93	221	1202	1266	52	499	525
Grp Sat Flow(s),veh/h/ln	934	0	1736	989	1885	1598	1767	1763	1795	1697	1692	1779
Q Serve(g_s), s	3.1	0.0	21.8	6.2	16.8	4.5	12.2	58.0	58.0	2.0	22.8	22.8
Cycle Q Clear(g_c), s	19.9	0.0	21.8	28.0	16.8	4.5	12.2	58.0	58.0	2.0	22.8	22.8
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.19	1.00		0.01
Lane Grp Cap(c), veh/h	177	0	486	133	528	447	254	1022	1041	34	772	812
V/C Ratio(X)	0.18	0.00	0.83	0.98	0.67	0.21	0.87	1.18	1.22	1.53	0.65	0.65
Avail Cap(c_a), veh/h	177	0	486	133	528	447	300	1022	1041	34	772	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	33.8	48.6	32.0	27.5	41.9	21.0	21.0	49.0	21.0	21.0
Incr Delay (d2), s/veh	0.5	0.0	11.6	71.2	3.4	0.2	20.5	89.6	106.1	345.5	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	10.6	5.9	8.0	1.7	6.7	46.8	52.4	4.1	9.1	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	45.4	119.7	35.3	27.8	62.4	110.6	127.1	394.5	22.8	22.8
LnGrp LOS	D	A	D	F	D	C	E	F	F	F	C	C
Approach Vol, veh/h		436			579			2689			1076	
Approach Delay, s/veh		45.1			53.1			114.4			40.8	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	62.0		32.0	18.4	49.6		32.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	2.0	58.0		28.0	17.0	43.0		28.0
Max Q Clear Time (g_c+I1), s	4.0	60.0		23.8	14.2	24.8		30.0
Green Ext Time (p_c), s	0.0	0.0		1.0	0.2	6.6		0.0

Intersection Summary			
HCM 6th Ctrl Delay			84.1
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	806	334	37	1046	1085	634	1267	26	204	487	4
Future Volume (veh/h)	16	806	334	37	1046	1085	634	1267	26	204	487	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	16	806	212	37	1046	766	634	1267	26	204	487	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	18	1118	499	46	1239	972	733	1410	29	248	913	7
Arrive On Green	0.01	0.33	0.33	0.03	0.35	0.35	0.21	0.40	0.40	0.07	0.26	0.26
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3533	72	3374	3526	29
Grp Volume(v), veh/h	16	806	212	37	1046	766	634	632	661	204	239	252
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1842	1687	1735	1821
Q Serve(g_s), s	0.9	20.0	10.5	2.0	25.8	23.4	17.0	31.9	32.0	5.7	11.3	11.3
Cycle Q Clear(g_c), s	0.9	20.0	10.5	2.0	25.8	23.4	17.0	31.9	32.0	5.7	11.3	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.02
Lane Grp Cap(c), veh/h	18	1118	499	46	1239	972	733	703	735	248	449	471
V/C Ratio(X)	0.90	0.72	0.43	0.80	0.84	0.79	0.86	0.90	0.90	0.82	0.53	0.53
Avail Cap(c_a), veh/h	35	1165	520	75	1308	1027	901	742	775	248	449	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	27.8	24.6	46.1	28.6	27.8	36.0	26.8	26.8	43.4	30.3	30.3
Incr Delay (d2), s/veh	75.3	2.1	0.6	25.9	5.0	4.0	7.5	13.4	13.0	19.3	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	3.7	1.2	11.5	8.1	7.7	15.4	16.0	3.0	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.3	29.9	25.2	72.0	33.6	31.8	43.5	40.2	39.8	62.8	31.5	31.5
LnGrp LOS	F	C	C	E	C	C	D	D	D	E	C	C
Approach Vol, veh/h		1034			1849			1927			695	
Approach Delay, s/veh		30.4			33.6			41.2			40.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	41.9	6.5	35.7	24.3	28.6	5.0	37.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	40.0	4.0	33.0	25.0	22.0	2.0	35.0
Max Q Clear Time (g_c+I1), s	7.7	34.0	4.0	22.0	19.0	13.3	2.9	27.8
Green Ext Time (p_c), s	0.0	4.0	0.0	4.8	1.4	1.9	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	45	70	456	261	89
Future Volume (veh/h)	180	45	70	456	261	89
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1811	1811	1811
Adj Flow Rate, veh/h	180	45	70	456	261	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	6	6	6	6
Cap, veh/h	254	226	760	1199	1199	1016
Arrive On Green	0.14	0.14	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1781	1585	998	1811	1811	1535
Grp Volume(v), veh/h	180	45	70	456	261	89
Grp Sat Flow(s),veh/h/ln	1781	1585	998	1811	1811	1535
Q Serve(g_s), s	4.4	1.2	1.4	5.2	2.6	1.0
Cycle Q Clear(g_c), s	4.4	1.2	4.0	5.2	2.6	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	254	226	760	1199	1199	1016
V/C Ratio(X)	0.71	0.20	0.09	0.38	0.22	0.09
Avail Cap(c_a), veh/h	792	705	760	1199	1199	1016
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	17.4	3.9	3.5	3.1	2.8
Incr Delay (d2), s/veh	3.6	0.4	0.2	0.9	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.4	0.2	1.2	0.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.4	17.8	4.1	4.4	3.5	3.0
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	225			526	350	
Approach Delay, s/veh	21.5			4.4	3.4	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		35.0		11.1		35.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5
Max Q Clear Time (g_c+I1), s		7.2		6.4		4.6
Green Ext Time (p_c), s		3.3		0.5		1.9

Intersection Summary						
HCM 6th Ctrl Delay			7.6			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	130	61	39	259	117	101	586	20	73	282	223
Future Volume (veh/h)	230	130	61	39	259	117	101	586	20	73	282	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1841	1841	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	230	130	38	39	259	76	101	586	16	73	282	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	4	4	6	6	6	6	6	6
Cap, veh/h	278	538	456	46	287	243	128	655	555	90	615	521
Arrive On Green	0.15	0.28	0.28	0.03	0.16	0.16	0.07	0.36	0.36	0.05	0.34	0.34
Sat Flow, veh/h	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Grp Volume(v), veh/h	230	130	38	39	259	76	101	586	16	73	282	86
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1753	1841	1560	1725	1811	1535	1725	1811	1535
Q Serve(g_s), s	7.1	3.0	1.0	1.3	8.0	2.5	3.3	17.6	0.4	2.4	7.0	2.3
Cycle Q Clear(g_c), s	7.1	3.0	1.0	1.3	8.0	2.5	3.3	17.6	0.4	2.4	7.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	538	456	46	287	243	128	655	555	90	615	521
V/C Ratio(X)	0.83	0.24	0.08	0.84	0.90	0.31	0.79	0.89	0.03	0.82	0.46	0.17
Avail Cap(c_a), veh/h	282	538	456	152	287	243	179	721	611	90	627	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	15.9	15.2	28.0	24.0	21.7	26.3	17.4	11.9	27.1	14.9	13.4
Incr Delay (d2), s/veh	17.8	0.2	0.1	30.9	29.6	0.7	14.5	13.0	0.0	41.9	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.2	0.3	0.9	5.6	0.9	1.8	8.7	0.1	2.0	2.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	16.2	15.3	58.9	53.6	22.4	40.8	30.4	11.9	69.0	15.5	13.5
LnGrp LOS	D	B	B	E	D	C	D	C	B	E	B	B
Approach Vol, veh/h		398			374			703			441	
Approach Delay, s/veh		30.7			47.8			31.5			24.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	24.9	5.5	20.4	8.3	23.6	12.9	13.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	23.0	5.0	13.0	6.0	20.0	9.0	9.0
Max Q Clear Time (g_c+I1), s	4.4	19.6	3.3	5.0	5.3	9.0	9.1	10.0
Green Ext Time (p_c), s	0.0	1.2	0.0	0.4	0.0	1.4	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		32.8
HCM 6th LOS		C

Intersection	
Int Delay, s/veh	382.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	85	77	68	179	90	119	786	32	42	434	88
Future Vol, veh/h	115	85	77	68	179	90	119	786	32	42	434	88
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	85	77	68	179	90	119	786	32	42	434	88

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1693	1574	434	1667	1630	786	522	0	0	818	0	0
Stage 1	518	518	-	1024	1024	-	-	-	-	-	-	-
Stage 2	1175	1056	-	643	606	-	-	-	-	-	-	-
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	~ 74	110	622	77	~ 102	392	1044	-	-	810	-	-
Stage 1	541	533	-	284	313	-	-	-	-	-	-	-
Stage 2	233	302	-	462	487	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	92	622	~ 12	~ 86	392	1044	-	-	810	-	-
Mov Cap-2 Maneuver	-	92	-	~ 12	~ 86	-	-	-	-	-	-	-
Stage 1	479	505	-	252	277	-	-	-	-	-	-	-
Stage 2	~ 56	268	-	319	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 2397.6	1.1	0.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1044	-	-	-	622	32	392	810	-	-
HCM Lane V/C Ratio	0.114	-	-	-	0.124	7.719	0.23	0.052	-	-
HCM Control Delay (s)	8.9	-	-	-	11.[illegible]	$ 3265.1	16.9	9.7	-	-
HCM Lane LOS	A	-	-	-	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	30	0.9	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	129	193	819	434	113
Future Volume (veh/h)	115	129	193	819	434	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	115	54	193	819	434	38
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	181	161	256	1168	646	548
Arrive On Green	0.10	0.10	0.15	0.63	0.36	0.36
Sat Flow, veh/h	1767	1572	1753	1841	1811	1535
Grp Volume(v), veh/h	115	54	193	819	434	38
Grp Sat Flow(s),veh/h/ln	1767	1572	1753	1841	1811	1535
Q Serve(g_s), s	1.9	1.0	3.2	8.9	6.2	0.5
Cycle Q Clear(g_c), s	1.9	1.0	3.2	8.9	6.2	0.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	181	161	256	1168	646	548
V/C Ratio(X)	0.64	0.34	0.75	0.70	0.67	0.07
Avail Cap(c_a), veh/h	523	466	750	2605	1549	1313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	12.7	12.5	3.7	8.3	6.4
Incr Delay (d2), s/veh	3.7	1.2	4.5	0.8	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.9	1.3	0.6	1.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.8	13.9	16.9	4.4	9.5	6.5
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	169			1012	472	
Approach Delay, s/veh	15.9			6.8	9.3	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.3		7.1	8.4	14.8
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		9.0	13.0	26.0
Max Q Clear Time (g_c+I1), s		10.9		3.9	5.2	8.2
Green Ext Time (p_c), s		7.2		0.2	0.3	2.7

Intersection Summary		
HCM 6th Ctrl Delay		8.4
HCM 6th LOS		A

Intersection						
Int Delay, s/veh	1.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	68	382	7	24	298
Future Vol, veh/h	19	68	382	7	24	298
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	19	68	382	7	24	298

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	732	386	0	0	389	0
Stage 1	386	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	388	662	-	-	1148	-
Stage 1	687	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	378	662	-	-	1148	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	687	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	569	1148	-
HCM Lane V/C Ratio	-	-	0.153	0.021	-
HCM Control Delay (s)	-	-	12.5	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Intersection Delay, s/veh	282.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	135	562	160	4	799	183	285	158	8	159	47	111
Future Vol, veh/h	135	562	160	4	799	183	285	158	8	159	47	111
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	7	7	7	5	5	5	2	2	2	8	8	8
Mvmt Flow	135	562	160	4	799	183	285	158	8	159	47	111
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	218.2	526.1	52.2	27.7
HCM LOS	F	F	F	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	95%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	5%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	166	135	562	160	4	799	183	159	47	111
LT Vol	285	0	135	0	0	4	0	0	159	0	0
Through Vol	0	158	0	562	0	0	799	0	0	47	0
RT Vol	0	8	0	0	160	0	0	183	0	0	111
Lane Flow Rate	285	166	135	562	160	4	799	183	159	47	111
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.879	0.488	0.406	1.613	0.428	0.012	2.355	0.504	0.526	0.149	0.331
Departure Headway (Hd)	13.417	12.884	12.92	12.393	11.656	12.126	11.604	10.874	14.986	14.456	13.715
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	274	282	281	298	312	297	320	333	243	250	264
Service Time	11.117	10.584	10.62	10.093	9.356	9.826	9.304	8.574	12.686	12.156	11.415
HCM Lane V/C Ratio	1.04	0.589	0.48	1.886	0.513	0.013	2.497	0.55	0.654	0.188	0.42
HCM Control Delay	66.7	27.3	24.2	320.4	22.8	15	643.6	24.1	33.2	19.7	23.1
HCM Lane LOS	F	D	C	F	C	B	F	C	D	C	C
HCM 95th-tile Q	7.6	2.5	1.9	28.4	2.1	0	57.3	2.7	2.8	0.5	1.4

Intersection	
Int Delay, s/veh	58.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	755	10	32	1175	17	45	8	51	39	4	147
Future Vol, veh/h	45	755	10	32	1175	17	45	8	51	39	4	147
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	7	7	5	5	5	5	5	5	2	2	2
Mvmt Flow	45	755	10	32	1175	17	45	8	51	39	4	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1192	0	0	765	0	0	2168	2101	755	2119	2094	1175
Stage 1	-	-	-	-	-	-	845	845	-	1239	1239	-
Stage 2	-	-	-	-	-	-	1323	1256	-	880	855	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	568	-	-	835	-	-	~ 33	51	404	~ 37	52	233
Stage 1	-	-	-	-	-	-	353	375	-	215	247	-
Stage 2	-	-	-	-	-	-	190	240	-	342	375	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	568	-	-	835	-	-	~ 10	45	404	~ 26	46	233
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	45	-	~ 26	46	-
Stage 1	-	-	-	-	-	-	325	345	-	198	238	-
Stage 2	-	-	-	-	-	-	66	231	-	269	345	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.2	$ 1016.5	155
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	10	45	404	568	-	-	835	-	-	26	46	233
HCM Lane V/C Ratio	4.5	0.178	0.126	0.079	-	-	0.038	-	-	1.5	0.087	0.631
HCM Control Delay (s)	$ 2314	101.6	15.2	11.9	-	-	9.5	-	-	$ 581.7	90.6	43.6
HCM Lane LOS	F	F	C	B	-	-	A	-	-	F	F	E
HCM 95th %tile Q(veh)	6.8	0.6	0.4	0.3	-	-	0.1	-	-	4.7	0.3	3.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	402	387	63	167	373	289	914	42	517	1239	254
Future Volume (veh/h)	268	402	387	63	167	373	289	914	42	517	1239	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	268	402	387	63	167	373	289	914	30	517	1239	254
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	359	177	170	199	58	129	158	686	581	259	641	131
Arrive On Green	0.20	0.20	0.20	0.11	0.11	0.11	0.09	0.37	0.37	0.14	0.42	0.42
Sat Flow, veh/h	1795	883	850	1795	519	1158	1781	1870	1585	1795	1518	311
Grp Volume(v), veh/h	268	0	789	63	0	540	289	914	30	517	0	1493
Grp Sat Flow(s),veh/h/ln	1795	0	1732	1795	0	1677	1781	1870	1585	1795	0	1829
Q Serve(g_s), s	12.6	0.0	18.0	2.9	0.0	10.0	8.0	33.0	1.1	13.0	0.0	38.0
Cycle Q Clear(g_c), s	12.6	0.0	18.0	2.9	0.0	10.0	8.0	33.0	1.1	13.0	0.0	38.0
Prop In Lane	1.00		0.49	1.00		0.69	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	359	0	346	199	0	186	158	686	581	259	0	772
V/C Ratio(X)	0.75	0.00	2.28	0.32	0.00	2.90	1.83	1.33	0.05	1.99	0.00	1.93
Avail Cap(c_a), veh/h	359	0	346	199	0	186	158	686	581	259	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	36.0	36.8	0.0	40.0	41.0	28.5	18.4	38.5	0.0	26.0
Incr Delay (d2), s/veh	8.3	0.0	583.9	0.9	0.0	868.8	395.0	159.6	0.0	460.6	0.0	424.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	63.6	1.3	0.0	49.0	20.8	44.4	0.4	38.8	0.0	106.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	0.0	619.9	37.7	0.0	908.8	436.0	188.1	18.4	499.1	0.0	450.7
LnGrp LOS	D	A	F	D	A	F	F	F	B	F	A	F
Approach Vol, veh/h		1057			603			1233			2010	
Approach Delay, s/veh		473.4			817.8			242.1			463.1	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	37.0		22.0	12.0	42.0		14.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	33.0		18.0	8.0	38.0		10.0				
Max Q Clear Time (g_c+I1), s	15.0	35.0		20.0	10.0	40.0		12.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			453.4									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	77	84	58	97	296	49	1395	65	360	1914	147
Future Volume (veh/h)	116	77	84	58	97	296	49	1395	65	360	1914	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	116	77	53	58	97	104	49	1395	65	360	1914	115
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	187	192	162	205	193	164	60	1595	74	411	2351	1049
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.46	0.46	0.23	0.66	0.66
Sat Flow, veh/h	1172	1856	1572	1260	1870	1585	1781	3457	161	1795	3582	1598
Grp Volume(v), veh/h	116	77	53	58	97	104	49	716	744	360	1914	115
Grp Sat Flow(s),veh/h/ln	1172	1856	1572	1260	1870	1585	1781	1777	1841	1795	1791	1598
Q Serve(g_s), s	3.2	2.3	1.8	2.6	2.8	3.7	1.6	21.1	21.2	11.2	22.9	1.5
Cycle Q Clear(g_c), s	6.0	2.3	1.8	4.9	2.8	3.7	1.6	21.1	21.2	11.2	22.9	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	187	192	162	205	193	164	60	820	849	411	2351	1049
V/C Ratio(X)	0.62	0.40	0.33	0.28	0.50	0.64	0.82	0.87	0.88	0.88	0.81	0.11
Avail Cap(c_a), veh/h	187	192	162	205	193	164	92	856	887	433	2404	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	24.4	24.2	26.7	24.6	25.0	27.9	14.1	14.2	21.6	7.4	3.7
Incr Delay (d2), s/veh	6.1	1.4	1.2	0.7	2.0	7.8	26.7	9.6	9.6	17.4	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.0	0.7	0.8	1.3	1.6	1.1	9.2	9.5	6.3	6.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	25.7	25.3	27.4	26.7	32.8	54.6	23.7	23.7	39.0	9.6	3.7
LnGrp LOS	C	C	C	C	C	C	D	C	C	D	A	A
Approach Vol, veh/h		246			259			1509			2389	
Approach Delay, s/veh		29.7			29.3			24.7			13.7	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.3	30.8		10.0	6.0	42.1		10.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	14.0	28.0		6.0	3.0	39.0		6.0				
Max Q Clear Time (g_c+I1), s	13.2	23.2		8.0	3.6	24.9		6.9				
Green Ext Time (p_c), s	0.1	3.6		0.0	0.0	11.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	531	538	311	206	476	445	427	1289	131	804	2021	494
Future Volume (veh/h)	531	538	311	206	476	445	427	1289	131	804	2021	494
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	531	538	173	206	476	346	427	1289	131	804	2021	345
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	558	645	288	216	502	224	453	1423	145	836	2109	655
Arrive On Green	0.16	0.18	0.18	0.12	0.14	0.14	0.13	0.30	0.30	0.24	0.41	0.41
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	4747	482	3483	5147	1598
Grp Volume(v), veh/h	531	538	173	206	476	346	427	932	488	804	2021	345
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1798	1742	1716	1598
Q Serve(g_s), s	15.1	14.5	10.0	11.4	13.2	14.0	12.1	26.1	26.1	22.8	38.1	16.3
Cycle Q Clear(g_c), s	15.1	14.5	10.0	11.4	13.2	14.0	12.1	26.1	26.1	22.8	38.1	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	558	645	288	216	502	224	453	1028	539	836	2109	655
V/C Ratio(X)	0.95	0.83	0.60	0.96	0.95	1.55	0.94	0.91	0.91	0.96	0.96	0.53
Avail Cap(c_a), veh/h	558	645	288	216	502	224	453	1030	540	836	2111	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	39.5	37.7	43.7	42.6	43.0	43.1	33.6	33.6	37.5	28.7	22.2
Incr Delay (d2), s/veh	26.6	9.2	3.5	48.7	27.7	266.8	28.3	11.3	18.9	22.1	11.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	7.1	4.1	7.9	7.7	22.0	7.0	12.2	13.9	12.1	17.2	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	48.8	41.1	92.4	70.4	309.8	71.4	45.0	52.6	59.7	40.1	23.0
LnGrp LOS	E	D	D	F	E	F	E	D	D	E	D	C
Approach Vol, veh/h		1242			1028			1847			3170	
Approach Delay, s/veh		56.0			155.4			53.1			43.2	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	34.0	16.0	22.0	17.0	45.0	20.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	30.0	12.0	18.0	13.0	41.0	16.0	14.0
Max Q Clear Time (g_c+I1), s	24.8	28.1	13.4	16.5	14.1	40.1	17.1	16.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.7	0.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	63.7
HCM 6th LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	187	449	110	2074	2879	181
Future Volume (veh/h)	187	449	110	2074	2879	181
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1885
Adj Flow Rate, veh/h	187	241	110	2074	2879	181
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	1	1	1
Cap, veh/h	331	295	167	3545	2858	176
Arrive On Green	0.18	0.18	0.05	0.69	0.58	0.58
Sat Flow, veh/h	1810	1610	3483	5316	5126	305
Grp Volume(v), veh/h	187	241	110	2074	1975	1085
Grp Sat Flow(s),veh/h/ln	1810	1610	1742	1716	1716	1830
Q Serve(g_s), s	5.9	9.0	1.9	13.1	35.9	36.0
Cycle Q Clear(g_c), s	5.9	9.0	1.9	13.1	35.9	36.0
Prop In Lane	1.00	1.00	1.00			0.17
Lane Grp Cap(c), veh/h	331	295	167	3545	1978	1055
V/C Ratio(X)	0.56	0.82	0.66	0.59	1.00	1.03
Avail Cap(c_a), veh/h	406	361	167	3545	1978	1055
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	24.5	29.2	5.1	13.2	13.2
Incr Delay (d2), s/veh	1.5	11.5	9.0	0.2	19.8	35.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.9	1.0	3.0	15.8	21.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.7	36.0	38.2	5.3	33.0	48.4
LnGrp LOS	C	D	D	A	C	F
Approach Vol, veh/h	428			2184	3060	
Approach Delay, s/veh	31.1			7.0	38.4	
Approach LOS	C			A	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.0		15.4	7.0	40.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		43.0		14.0	3.0	36.0
Max Q Clear Time (g_c+I1), s		15.1		11.0	3.9	38.0
Green Ext Time (p_c), s		19.6		0.5	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			25.8			
HCM 6th LOS			C			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	419	362	138	313	332	239	1740	226	539	2622	177
Future Volume (veh/h)	239	419	362	138	313	332	239	1740	226	539	2622	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	239	419	362	138	313	230	239	1740	134	539	2622	126
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	161	266	228	100	209	178	160	1473	657	376	1895	845
Arrive On Green	0.09	0.14	0.14	0.06	0.11	0.11	0.09	0.41	0.41	0.21	0.53	0.53
Sat Flow, veh/h	1810	1840	1581	1795	1885	1598	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	239	411	370	138	313	230	239	1740	134	539	2622	126
Grp Sat Flow(s),veh/h/ln	1810	1805	1616	1795	1885	1598	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	8.0	13.0	13.0	5.0	10.0	10.0	8.0	37.0	4.9	19.0	48.0	3.6
Cycle Q Clear(g_c), s	8.0	13.0	13.0	5.0	10.0	10.0	8.0	37.0	4.9	19.0	48.0	3.6
Prop In Lane	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	261	233	100	209	178	160	1473	657	376	1895	845
V/C Ratio(X)	1.49	1.58	1.59	1.38	1.49	1.30	1.50	1.18	0.20	1.43	1.38	0.15
Avail Cap(c_a), veh/h	161	261	233	100	209	178	160	1473	657	376	1895	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	38.5	38.5	42.5	40.0	40.0	41.0	26.5	17.0	35.5	21.0	10.6
Incr Delay (d2), s/veh	248.7	277.0	283.0	223.0	245.9	168.2	253.8	89.0	0.2	209.7	175.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.7	23.4	8.4	18.9	12.2	14.7	33.0	1.8	29.9	64.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	289.7	315.5	321.5	265.5	285.9	208.2	294.8	115.5	17.2	245.2	196.9	10.7
LnGrp LOS	F	F	F	F	F	F	F	F	B	F	F	B
Approach Vol, veh/h		1020			681			2113			3287	
Approach Delay, s/veh		311.6			255.5			129.6			197.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	41.0	9.0	17.0	12.0	52.0	12.0	14.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	37.0	5.0	13.0	8.0	48.0	8.0	10.0
Max Q Clear Time (g_c+I1), s	21.0	39.0	7.0	15.0	10.0	50.0	10.0	12.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	199.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	291	430	77	210	193	402	1993	93	224	2767	39
Future Volume (veh/h)	57	291	430	77	210	193	402	1993	93	224	2767	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	57	291	430	77	210	193	402	1993	93	224	2767	39
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	92	222	198	90	225	196	302	2075	96	224	2305	32
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.09	0.60	0.60	0.13	0.64	0.64
Sat Flow, veh/h	982	1777	1585	732	1798	1568	3456	3458	160	1795	3616	51
Grp Volume(v), veh/h	57	291	430	77	207	196	402	1016	1070	224	1367	1439
Grp Sat Flow(s),veh/h/ln	982	1777	1585	732	1777	1588	1728	1777	1842	1795	1791	1876
Q Serve(g_s), s	0.2	10.0	10.0	0.0	9.3	9.8	7.0	42.8	44.4	10.0	51.0	51.0
Cycle Q Clear(g_c), s	10.0	10.0	10.0	10.0	9.3	9.8	7.0	42.8	44.4	10.0	51.0	51.0
Prop In Lane	1.00		1.00	1.00		0.99	1.00		0.09	1.00		0.03
Lane Grp Cap(c), veh/h	92	222	198	90	222	199	302	1066	1105	224	1142	1196
V/C Ratio(X)	0.62	1.31	2.17	0.86	0.93	0.99	1.33	0.95	0.97	1.00	1.20	1.20
Avail Cap(c_a), veh/h	92	222	198	90	222	199	302	1066	1105	224	1142	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	35.0	35.0	40.0	34.7	34.9	36.5	15.0	15.3	35.0	14.5	14.5
Incr Delay (d2), s/veh	11.9	168.0	543.0	51.2	42.4	59.4	169.3	17.4	19.8	59.5	97.5	99.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	14.6	33.6	2.8	6.5	7.0	10.0	19.4	21.4	7.9	47.2	50.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	203.0	578.0	91.2	77.0	94.3	205.8	32.4	35.0	94.5	112.0	114.1
LnGrp LOS	D	F	F	F	E	F	F	C	D	F	F	F
Approach Vol, veh/h		778			480			2488			3030	
Approach Delay, s/veh		399.2			86.3			61.6			111.7	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	52.0		14.0	11.0	55.0		14.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	48.0		10.0	7.0	51.0		10.0				
Max Q Clear Time (g_c+I1), s	12.0	46.4		12.0	9.0	53.0		12.0				
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			124.5									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	265	300	111	255	60	298	1706	135	160	2694	32
Future Volume (veh/h)	8	265	300	111	255	60	298	1706	135	160	2694	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	265	300	111	255	38	298	1706	135	160	2694	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	166	168	190	72	396	335	212	1888	148	178	1978	23
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.12	0.57	0.57	0.10	0.55	0.55
Sat Flow, veh/h	1086	801	906	852	1885	1598	1767	3312	259	1781	3597	43
Grp Volume(v), veh/h	8	0	565	111	255	38	298	899	942	160	1328	1398
Grp Sat Flow(s),veh/h/ln	1086	0	1707	852	1885	1598	1767	1763	1809	1781	1777	1863
Q Serve(g_s), s	0.7	0.0	21.0	0.0	12.4	1.9	12.0	44.8	46.7	8.9	55.0	55.0
Cycle Q Clear(g_c), s	13.0	0.0	21.0	21.0	12.4	1.9	12.0	44.8	46.7	8.9	55.0	55.0
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.14	1.00		0.02
Lane Grp Cap(c), veh/h	166	0	359	72	396	335	212	1005	1031	178	977	1024
V/C Ratio(X)	0.05	0.00	1.58	1.54	0.64	0.11	1.41	0.90	0.91	0.90	1.36	1.36
Avail Cap(c_a), veh/h	166	0	359	72	396	335	212	1005	1031	178	977	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	39.5	50.0	36.1	32.0	44.0	18.9	19.3	44.5	22.5	22.5
Incr Delay (d2), s/veh	0.1	0.0	272.3	301.3	3.6	0.1	208.1	10.5	12.1	40.0	168.2	170.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	35.8	7.8	6.0	0.8	17.5	19.5	21.3	5.9	66.5	70.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	0.0	311.8	351.3	39.6	32.1	252.1	29.3	31.4	84.5	190.7	192.9
LnGrp LOS	D	A	F	F	D	C	F	C	C	F	F	F
Approach Vol, veh/h		573			404			2139			2886	
Approach Delay, s/veh		308.0			124.6			61.3			185.9	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	61.0		25.0	16.0	59.0		25.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	57.0		21.0	12.0	55.0		21.0				
Max Q Clear Time (g_c+I1), s	10.9	48.7		23.0	14.0	57.0		23.0				
Green Ext Time (p_c), s	0.0	6.8		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			149.0									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1754	960	45	1372	328	697	507	69	884	1355	12
Future Volume (veh/h)	12	1754	960	45	1372	328	697	507	69	884	1355	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	1754	674	45	1372	235	697	507	69	884	1355	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	13	1275	569	36	1394	1094	514	561	76	877	1022	9
Arrive On Green	0.01	0.38	0.38	0.02	0.39	0.39	0.15	0.18	0.18	0.26	0.29	0.29
Sat Flow, veh/h	1682	3357	1497	1781	3554	2790	3428	3119	423	3374	3524	31
Grp Volume(v), veh/h	12	1754	674	45	1372	235	697	286	290	884	667	700
Grp Sat Flow(s),veh/h/ln	1682	1678	1497	1781	1777	1395	1714	1763	1779	1687	1735	1820
Q Serve(g_s), s	0.7	38.0	38.0	2.0	38.2	5.6	15.0	15.9	16.0	26.0	29.0	29.0
Cycle Q Clear(g_c), s	0.7	38.0	38.0	2.0	38.2	5.6	15.0	15.9	16.0	26.0	29.0	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.02
Lane Grp Cap(c), veh/h	13	1275	569	36	1394	1094	514	317	320	877	503	528
V/C Ratio(X)	0.93	1.38	1.18	1.26	0.98	0.21	1.36	0.90	0.91	1.01	1.33	1.33
Avail Cap(c_a), veh/h	34	1275	569	36	1394	1094	514	317	320	877	503	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	31.0	31.0	49.0	30.1	20.2	42.5	40.1	40.2	37.0	35.5	35.5
Incr Delay (d2), s/veh	96.9	173.8	100.0	238.7	20.3	0.1	172.3	27.0	27.9	32.3	159.9	159.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	45.5	29.0	3.2	19.6	1.8	18.6	9.2	9.4	14.4	34.3	35.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.5	204.8	131.0	287.7	50.4	20.3	214.8	67.1	68.1	69.3	195.4	195.1
LnGrp LOS	F	F	F	F	D	C	F	E	E	F	F	F
Approach Vol, veh/h		2440			1652			1273			2251	
Approach Delay, s/veh		184.2			52.6			148.2			145.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	22.0	6.0	42.0	19.0	33.0	4.8	43.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	18.0	2.0	38.0	15.0	29.0	2.0	38.0
Max Q Clear Time (g_c+I1), s	28.0	18.0	4.0	40.0	17.0	31.0	2.7	40.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	138.3
HCM 6th LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	146	87	68	363	439	207
Future Volume (veh/h)	146	87	68	363	439	207
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1870	1870
Adj Flow Rate, veh/h	146	87	68	363	439	207
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	3	3	2	2
Cap, veh/h	227	202	605	1250	1260	1068
Arrive On Green	0.13	0.13	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1781	1585	778	1856	1870	1585
Grp Volume(v), veh/h	146	87	68	363	439	207
Grp Sat Flow(s),veh/h/ln	1781	1585	778	1856	1870	1585
Q Serve(g_s), s	3.5	2.3	1.8	3.6	4.5	2.2
Cycle Q Clear(g_c), s	3.5	2.3	6.4	3.6	4.5	2.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	227	202	605	1250	1260	1068
V/C Ratio(X)	0.64	0.43	0.11	0.29	0.35	0.19
Avail Cap(c_a), veh/h	806	718	605	1250	1260	1068
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	18.2	4.5	3.0	3.2	2.8
Incr Delay (d2), s/veh	3.0	1.4	0.4	0.6	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.8	0.2	0.7	1.0	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.8	19.7	4.9	3.6	3.9	3.2
LnGrp LOS	C	B	A	A	A	A
Approach Vol, veh/h	233			431	646	
Approach Delay, s/veh	21.0			3.8	3.7	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		35.0		10.3		35.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5
Max Q Clear Time (g_c+I1), s		8.4		5.5		6.5
Green Ext Time (p_c), s		2.7		0.6		3.6
Intersection Summary						
HCM 6th Ctrl Delay			6.8			
HCM 6th LOS			A			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	277	130	32	209	83	90	377	49	141	580	243
Future Volume (veh/h)	156	277	130	32	209	83	90	377	49	141	580	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	156	277	91	32	209	61	90	377	40	141	580	112
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	201	457	388	38	288	244	115	640	543	183	716	607
Arrive On Green	0.11	0.24	0.24	0.02	0.15	0.15	0.07	0.35	0.35	0.10	0.38	0.38
Sat Flow, veh/h	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Grp Volume(v), veh/h	156	277	91	32	209	61	90	377	40	141	580	112
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1810	1900	1610	1767	1856	1572	1781	1870	1585
Q Serve(g_s), s	4.7	7.2	2.5	1.0	5.8	1.9	2.8	9.3	0.9	4.3	15.4	2.6
Cycle Q Clear(g_c), s	4.7	7.2	2.5	1.0	5.8	1.9	2.8	9.3	0.9	4.3	15.4	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	457	388	38	288	244	115	640	543	183	716	607
V/C Ratio(X)	0.78	0.61	0.23	0.85	0.73	0.25	0.78	0.59	0.07	0.77	0.81	0.18
Avail Cap(c_a), veh/h	356	680	576	131	445	377	223	937	794	385	1113	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	18.6	16.9	27.1	22.4	20.7	25.5	14.9	12.2	24.2	15.3	11.4
Incr Delay (d2), s/veh	6.3	1.3	0.3	36.8	3.5	0.5	10.9	0.9	0.1	6.7	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.0	0.9	0.8	2.7	0.7	1.4	3.6	0.3	2.0	6.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	19.9	17.2	63.8	25.9	21.3	36.4	15.8	12.3	30.9	17.9	11.5
LnGrp LOS	C	B	B	E	C	C	D	B	B	C	B	B
Approach Vol, veh/h		524			302			507			833	
Approach Delay, s/veh		22.5			29.0			19.2			19.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	23.1	5.2	17.5	7.6	25.2	10.2	12.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	28.0	4.0	20.0	7.0	33.0	11.0	13.0
Max Q Clear Time (g_c+I1), s	6.3	11.3	3.0	9.2	4.8	17.4	6.7	7.8
Green Ext Time (p_c), s	0.2	2.2	0.0	1.4	0.0	3.8	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

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	60	206	159	55	144	72	115	426	79	103	754	136
Future Vol, veh/h	60	206	159	55	144	72	115	426	79	103	754	136
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	0	275	-	0	0	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	2	2	2	4	4	2	2	2	2
Mvmt Flow	60	206	159	55	144	72	115	426	79	103	754	136

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1764	1695	754	1867	1752	426	890	0	0	505	0	0
Stage 1	960	960	-	656	656	-	-	-	-	-	-	-
Stage 2	804	735	-	1211	1096	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	66	~ 93	412	55	~ 85	628	753	-	-	1060	-	-
Stage 1	311	335	-	454	462	-	-	-	-	-	-	-
Stage 2	380	425	-	223	289	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 71	412	-	~ 65	628	753	-	-	1060	-	-
Mov Cap-2 Maneuver	-	~ 71	-	-	~ 65	-	-	-	-	-	-	-
Stage 1	263	303	-	385	391	-	-	-	-	-	-	-
Stage 2	180	360	-	~ 40	261	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2	0.9
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	753	-	-	-	412	-	628	1060	-	-
HCM Lane V/C Ratio	0.153	-	-	-	0.386	-	0.115	0.097	-	-
HCM Control Delay (s)	10.6	-	-	-	19.1	-	11.5	8.8	-	-
HCM Lane LOS	B	-	-	-	C	-	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	1.8	-	0.4	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	107	154	135	425	861	117
Future Volume (veh/h)	107	154	135	425	861	117
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	1885	1885
Adj Flow Rate, veh/h	107	92	135	425	861	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	5	5	1	1
Cap, veh/h	168	150	172	1341	1037	879
Arrive On Green	0.09	0.09	0.10	0.73	0.55	0.55
Sat Flow, veh/h	1781	1585	1739	1826	1885	1598
Grp Volume(v), veh/h	107	92	135	425	861	63
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1826	1885	1598
Q Serve(g_s), s	2.7	2.6	3.5	3.8	17.7	0.9
Cycle Q Clear(g_c), s	2.7	2.6	3.5	3.8	17.7	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	168	150	172	1341	1037	879
V/C Ratio(X)	0.64	0.61	0.79	0.32	0.83	0.07
Avail Cap(c_a), veh/h	229	203	260	1797	1411	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	20.3	20.6	2.2	8.7	4.9
Incr Delay (d2), s/veh	3.9	4.0	8.6	0.1	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.4	1.7	0.4	5.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.3	24.4	29.2	2.3	11.9	5.0
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	199			560	924	
Approach Delay, s/veh	24.3			8.8	11.4	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.3		8.4	8.6	29.7
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		46.0		6.0	7.0	35.0
Max Q Clear Time (g_c+I1), s		5.8		4.7	5.5	19.7
Green Ext Time (p_c), s		3.0		0.1	0.0	6.0

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B

Intersection						
Int Delay, s/veh	1.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	46	379	22	79	375
Future Vol, veh/h	13	46	379	22	79	375
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	13	46	379	22	79	375

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	923	390	0	0	401	0
Stage 1	390	-	-	-	-	-
Stage 2	533	-	-	-	-	-
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	299	658	-	-	1158	-
Stage 1	684	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	273	658	-	-	1158	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	537	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	502	1158	-
HCM Lane V/C Ratio	-	-	0.118	0.068	-
HCM Control Delay (s)	-	-	13.1	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Intersection Delay, s/veh	467
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	148	972	356	0	834	200	224	72	12	176	125	103
Future Vol, veh/h	148	972	356	0	834	200	224	72	12	176	125	103
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	2	2	2
Mvmt Flow	148	972	356	0	834	200	224	72	12	176	125	103
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	572.8	609.8	48.8	33.8
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	86%	0%	100%	0%	100%	100%	0%	0%	100%	0%
Vol Right, %	0%	14%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	224	84	148	972	356	0	834	200	176	125	103
LT Vol	224	0	148	0	0	0	0	0	176	0	0
Through Vol	0	72	0	972	0	0	834	0	0	125	0
RT Vol	0	12	0	0	356	0	0	200	0	0	103
Lane Flow Rate	224	84	148	972	356	0	834	200	176	125	103
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.76	0.271	0.445	2.785	0.951	0	2.583	0.581	0.589	0.401	0.311
Departure Headway (Hd)	16.561	15.925	13.243	12.713	11.972	13.017	13.017	12.29	17.033	16.5	15.753
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	222	228	274	301	306	0	292	296	215	220	230
Service Time	14.261	13.625	10.943	10.413	9.672	10.717	10.717	9.99	14.733	14.2	13.453
HCM Lane V/C Ratio	1.009	0.368	0.54	3.229	1.163	0	2.856	0.676	0.819	0.568	0.448
HCM Control Delay	57.9	24.4	26.1	838	76.1	15.7	748.7	30.7	41.6	29.8	25.4
HCM Lane LOS	F	C	D	F	F	N	F	D	E	D	D
HCM 95th-tile Q	5.3	1.1	2.2	67.6	9.5	0	59.2	3.4	3.3	1.8	1.3

Intersection	
Int Delay, s/veh	147.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	1471	53	41	1101	35	34	4	27	18	4	100
Future Vol, veh/h	166	1471	53	41	1101	35	34	4	27	18	4	100
Conflicting Peds, #/hr	0	0	0	0	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	300	-	475	360	-	225	50	-	110	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	3	3	3	4	4	4	5	5	5
Mvmt Flow	166	1471	53	41	1101	35	34	4	27	18	4	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1136	0	0	1524	0	0	3056	3021	1471	3028	3039	1101
Stage 1	-	-	-	-	-	-	1803	1803	-	1183	1183	-
Stage 2	-	-	-	-	-	-	1253	1218	-	1845	1856	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.14	6.54	6.24	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.15	5.55	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.536	4.036	3.336	3.545	4.045	3.345
Pot Cap-1 Maneuver	619	-	-	435	-	-	~ 7	13	154	~ 8	12	254
Stage 1	-	-	-	-	-	-	100	130	-	228	260	-
Stage 2	-	-	-	-	-	-	209	251	-	94	121	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	619	-	-	435	-	-	~ 2	9	154	~ 3	8	254
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	9	-	~ 3	8	-
Stage 1	-	-	-	-	-	-	73	95	-	167	236	-
Stage 2	-	-	-	-	-	-	113	227	-	54	89	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.5	$ 5581.7	$ 702.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	2	9	154	619	-	-	435	-	-	3	8	254
HCM Lane V/C Ratio	17	0.444	0.175	0.268	-	-	0.094	-	-	6	0.5	0.394
HCM Control Delay (s)	$ 10575.1	$ 589.2	33.3	12.9	-	-	14.1	-		$ 4452.6	$ 680	28.1
HCM Lane LOS	F	F	D	B	-	-	B	-	-	F	F	D
HCM 95th %tile Q(veh)	6.1	1	0.6	1.1	-	-	0.3	-	-	3.7	1	1.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	219	228	48	396	470	323	977	88	165	531	165
Future Volume (veh/h)	275	219	228	48	396	470	323	977	88	165	531	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	275	219	228	48	396	470	323	977	43	165	531	165
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	3	3	3	5	5	5
Cap, veh/h	307	568	507	87	359	320	356	1103	49	197	606	188
Arrive On Green	0.18	0.34	0.34	0.05	0.20	0.20	0.20	0.32	0.32	0.11	0.23	0.23
Sat Flow, veh/h	1697	1692	1510	1767	1763	1572	1767	3440	151	1739	2608	807
Grp Volume(v), veh/h	275	219	228	48	396	470	323	501	519	165	352	344
Grp Sat Flow(s),veh/h/ln	1697	1692	1510	1767	1763	1572	1767	1763	1828	1739	1735	1681
Q Serve(g_s), s	14.0	8.7	10.4	2.3	18.0	18.0	15.8	23.8	23.8	8.2	17.3	17.4
Cycle Q Clear(g_c), s	14.0	8.7	10.4	2.3	18.0	18.0	15.8	23.8	23.8	8.2	17.3	17.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.48
Lane Grp Cap(c), veh/h	307	568	507	87	359	320	356	565	586	197	403	391
V/C Ratio(X)	0.90	0.39	0.45	0.55	1.10	1.47	0.91	0.89	0.89	0.84	0.87	0.88
Avail Cap(c_a), veh/h	307	568	507	120	359	320	360	599	621	197	432	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	22.4	23.0	41.0	35.2	35.2	34.5	28.5	28.5	38.4	32.6	32.7
Incr Delay (d2), s/veh	26.7	0.4	0.6	5.3	77.9	226.3	25.7	14.3	13.9	26.0	16.9	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	3.4	3.7	1.1	15.3	26.9	9.1	11.9	12.2	4.9	8.9	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	22.8	23.6	46.4	113.1	261.5	60.1	42.8	42.4	64.4	49.6	50.8
LnGrp LOS	E	C	C	D	F	F	E	D	D	E	D	D
Approach Vol, veh/h		722			914			1343			861	
Approach Delay, s/veh		38.0			185.9			46.8			52.9	
Approach LOS		D			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	32.3	8.4	33.6	21.8	24.5	20.0	22.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	30.0	6.0	28.0	18.0	22.0	16.0	18.0				
Max Q Clear Time (g_c+I1), s	10.2	25.8	4.3	12.4	17.8	19.4	16.0	20.0				
Green Ext Time (p_c), s	0.0	2.4	0.0	2.5	0.0	1.1	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			79.6									
HCM 6th LOS			E									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	168	138	145	376	520	303	2262	94	219	1058	178
Future Volume (veh/h)	106	168	138	145	376	520	303	2262	94	219	1058	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1841	1841	1841
Adj Flow Rate, veh/h	106	168	138	145	376	288	303	2262	67	219	1058	152
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	4	4	4
Cap, veh/h	80	211	163	182	317	268	350	2178	64	189	1512	217
Arrive On Green	0.05	0.11	0.11	0.10	0.17	0.17	0.20	0.43	0.43	0.11	0.34	0.34
Sat Flow, veh/h	1739	1865	1437	1781	1870	1585	1767	5056	149	1753	4439	637
Grp Volume(v), veh/h	106	155	151	145	376	288	303	1508	821	219	798	412
Grp Sat Flow(s),veh/h/ln	1739	1735	1567	1781	1870	1585	1767	1689	1829	1753	1675	1726
Q Serve(g_s), s	3.0	5.7	6.1	5.2	11.0	11.0	10.8	28.0	28.0	7.0	13.4	13.4
Cycle Q Clear(g_c), s	3.0	5.7	6.1	5.2	11.0	11.0	10.8	28.0	28.0	7.0	13.4	13.4
Prop In Lane	1.00		0.92	1.00		1.00	1.00		0.08	1.00		0.37
Lane Grp Cap(c), veh/h	80	196	177	182	317	268	350	1455	788	189	1141	588
V/C Ratio(X)	1.32	0.79	0.85	0.80	1.19	1.07	0.87	1.04	1.04	1.16	0.70	0.70
Avail Cap(c_a), veh/h	80	196	177	192	317	268	381	1455	788	189	1141	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	28.1	28.3	28.5	27.0	27.0	25.2	18.5	18.5	29.0	18.6	18.6
Incr Delay (d2), s/veh	208.3	19.5	30.2	19.6	111.8	75.9	17.6	33.7	43.5	115.2	1.9	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	3.3	3.7	3.1	14.4	9.6	5.9	16.2	19.7	8.8	5.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	239.3	47.6	58.5	48.1	138.8	102.9	42.8	52.2	62.0	144.2	20.5	22.3
LnGrp LOS	F	D	E	D	F	F	D	F	F	F	C	C
Approach Vol, veh/h		412			809			2632			1429	
Approach Delay, s/veh		100.9			109.7			54.2			39.9	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	32.0	10.6	11.4	16.9	26.1	7.0	15.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	28.0	7.0	7.0	14.0	21.0	3.0	11.0
Max Q Clear Time (g_c+I1), s	9.0	30.0	7.2	8.1	12.8	15.4	5.0	13.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	3.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	337	219	246	386	201	240	2238	79	103	1210	13
Future Volume (veh/h)	42	337	219	246	386	201	240	2238	79	103	1210	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1811	1811	1811
Adj Flow Rate, veh/h	42	337	219	246	386	201	240	2238	79	103	1210	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	6	6	6
Cap, veh/h	274	757	482	286	839	431	317	2160	76	115	2051	22
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.09	0.43	0.43	0.07	0.41	0.41
Sat Flow, veh/h	822	2066	1316	860	2289	1175	3401	4984	175	1725	5043	54
Grp Volume(v), veh/h	42	287	269	246	301	286	240	1501	816	103	791	432
Grp Sat Flow(s),veh/h/ln	822	1763	1619	860	1791	1674	1700	1675	1809	1725	1648	1801
Q Serve(g_s), s	3.7	11.1	11.4	21.6	11.5	11.8	6.2	39.0	39.0	5.3	16.9	16.9
Cycle Q Clear(g_c), s	15.5	11.1	11.4	33.0	11.5	11.8	6.2	39.0	39.0	5.3	16.9	16.9
Prop In Lane	1.00		0.81	1.00		0.70	1.00		0.10	1.00		0.03
Lane Grp Cap(c), veh/h	274	646	594	286	657	614	317	1452	784	115	1341	733
V/C Ratio(X)	0.15	0.44	0.45	0.86	0.46	0.47	0.76	1.03	1.04	0.90	0.59	0.59
Avail Cap(c_a), veh/h	274	646	594	286	657	614	416	1452	784	115	1341	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	21.6	21.7	35.9	21.7	21.8	39.8	25.5	25.5	41.7	20.8	20.8
Incr Delay (d2), s/veh	0.3	0.5	0.5	22.1	0.5	0.6	5.7	32.9	43.1	52.9	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.5	4.3	7.2	4.8	4.6	2.8	21.1	25.0	3.9	6.3	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	22.0	22.2	58.0	22.2	22.3	45.5	58.4	68.6	94.6	21.5	22.1
LnGrp LOS	C	C	C	E	C	C	D	F	F	F	C	C
Approach Vol, veh/h		598			833			2557			1326	
Approach Delay, s/veh		22.5			32.8			60.5			27.4	
Approach LOS		C			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	43.0		37.0	12.4	40.6		37.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	39.0		33.0	11.0	34.0		33.0				
Max Q Clear Time (g_c+I1), s	7.3	41.0		17.5	8.2	18.9		35.0				
Green Ext Time (p_c), s	0.0	0.0		3.4	0.2	7.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		43.6
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	249	155	130	356	200	221	2229	239	52	1020	4
Future Volume (veh/h)	32	249	155	130	356	200	221	2229	239	52	1020	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1856	1856	1856	1781	1781	1781
Adj Flow Rate, veh/h	32	249	155	130	356	93	221	2229	239	52	1020	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	3	3	3	8	8	8
Cap, veh/h	73	353	299	136	358	304	257	2124	224	51	1884	7
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.15	0.66	0.66	0.03	0.54	0.54
Sat Flow, veh/h	934	1856	1572	989	1885	1598	1767	3218	339	1697	3458	14
Grp Volume(v), veh/h	32	249	155	130	356	93	221	1202	1266	52	499	525
Grp Sat Flow(s),veh/h/ln	934	1856	1572	989	1885	1598	1767	1763	1795	1697	1692	1779
Q Serve(g_s), s	0.1	12.6	8.9	6.4	18.9	5.0	12.2	66.0	66.0	3.0	19.0	19.0
Cycle Q Clear(g_c), s	19.0	12.6	8.9	19.0	18.9	5.0	12.2	66.0	66.0	3.0	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.01
Lane Grp Cap(c), veh/h	73	353	299	136	358	304	257	1163	1184	51	922	969
V/C Ratio(X)	0.44	0.71	0.52	0.96	0.99	0.31	0.86	1.03	1.07	1.02	0.54	0.54
Avail Cap(c_a), veh/h	73	353	299	136	358	304	371	1163	1184	51	922	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	37.9	36.4	48.4	40.4	34.8	41.7	17.0	17.0	48.5	14.7	14.7
Incr Delay (d2), s/veh	4.0	6.3	1.6	64.2	45.8	0.6	13.1	35.4	46.6	132.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.3	3.5	5.7	13.2	2.0	6.2	33.9	38.2	3.1	7.1	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	44.2	38.0	112.6	86.3	35.4	54.9	52.4	63.6	181.0	15.3	15.3
LnGrp LOS	D	D	D	F	F	D	D	F	F	F	B	B
Approach Vol, veh/h		436			579			2689			1076	
Approach Delay, s/veh		42.7			84.0			57.9			23.3	
Approach LOS		D			F			E			C	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	7.0	70.0	23.0	18.5	58.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	66.0	19.0	21.0	48.0	19.0
Max Q Clear Time (g_c+I1), s	5.0	68.0	21.0	14.2	21.0	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	7.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	85	77	68	179	90	119	786	32	42	434	88
Future Volume (veh/h)	115	85	77	68	179	90	119	786	32	42	434	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	85	77	68	179	90	119	786	32	42	434	88
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	221	200	107	236	119	153	1060	43	78	774	156
Arrive On Green	0.10	0.24	0.24	0.06	0.20	0.20	0.09	0.30	0.30	0.04	0.26	0.26
Sat Flow, veh/h	1781	904	819	1781	1174	590	1781	3480	142	1781	2947	593
Grp Volume(v), veh/h	115	0	162	68	0	269	119	401	417	42	260	262
Grp Sat Flow(s),veh/h/ln	1781	0	1723	1781	0	1764	1781	1777	1845	1781	1777	1764
Q Serve(g_s), s	3.2	0.0	4.1	1.9	0.0	7.5	3.4	10.5	10.5	1.2	6.6	6.7
Cycle Q Clear(g_c), s	3.2	0.0	4.1	1.9	0.0	7.5	3.4	10.5	10.5	1.2	6.6	6.7
Prop In Lane	1.00		0.48	1.00		0.33	1.00		0.08	1.00		0.34
Lane Grp Cap(c), veh/h	185	0	421	107	0	355	153	541	562	78	467	463
V/C Ratio(X)	0.62	0.00	0.38	0.63	0.00	0.76	0.78	0.74	0.74	0.54	0.56	0.57
Avail Cap(c_a), veh/h	618	0	910	295	0	612	237	716	743	175	654	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	16.3	23.8	0.0	19.5	23.2	16.2	16.2	24.3	16.5	16.6
Incr Delay (d2), s/veh	3.4	0.0	0.6	6.1	0.0	3.3	8.4	2.9	2.8	5.7	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.5	0.9	0.0	3.1	1.7	4.1	4.3	0.6	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	0.0	16.9	29.9	0.0	22.9	31.6	19.1	19.0	30.0	17.6	17.7
LnGrp LOS	C	A	B	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		277			337			937			564	
Approach Delay, s/veh		20.6			24.3			20.6			18.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	20.3	7.6	17.2	9.0	18.1	9.9	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	20.9	8.6	27.4	6.9	19.1	18.0	18.0
Max Q Clear Time (g_c+I1), s	3.2	12.5	3.9	6.1	5.4	8.7	5.2	9.5
Green Ext Time (p_c), s	0.0	3.3	0.0	0.9	0.0	2.3	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	562	160	4	799	183	285	158	8	159	47	111
Future Volume (veh/h)	135	562	160	4	799	183	285	158	8	159	47	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1826	1826	1870	1870	1870	1781	1781	1781
Adj Flow Rate, veh/h	135	562	160	4	799	183	285	158	8	159	47	111
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	7	7	7	5	5	5	2	2	2	8	8	8
Cap, veh/h	142	906	768	9	779	660	284	259	13	195	182	154
Arrive On Green	0.08	0.50	0.50	0.01	0.43	0.43	0.16	0.15	0.15	0.11	0.10	0.10
Sat Flow, veh/h	1711	1796	1522	1739	1826	1547	1781	1765	89	1697	1781	1510
Grp Volume(v), veh/h	135	562	160	4	799	183	285	0	166	159	47	111
Grp Sat Flow(s),veh/h/ln	1711	1796	1522	1739	1826	1547	1781	0	1854	1697	1781	1510
Q Serve(g_s), s	6.2	17.7	4.6	0.2	33.5	6.0	12.5	0.0	6.6	7.2	1.9	5.6
Cycle Q Clear(g_c), s	6.2	17.7	4.6	0.2	33.5	6.0	12.5	0.0	6.6	7.2	1.9	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	142	906	768	9	779	660	284	0	272	195	182	154
V/C Ratio(X)	0.95	0.62	0.21	0.43	1.03	0.28	1.00	0.00	0.61	0.82	0.26	0.72
Avail Cap(c_a), veh/h	142	906	768	111	779	660	284	0	470	261	442	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	14.0	10.8	38.9	22.5	14.6	33.0	0.0	31.4	33.9	32.5	34.2
Incr Delay (d2), s/veh	61.3	1.3	0.1	28.8	38.9	0.2	54.7	0.0	2.2	13.6	0.7	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.8	1.4	0.1	21.5	2.0	9.5	0.0	3.0	3.6	0.8	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	15.3	10.9	67.7	61.4	14.9	87.7	0.0	33.6	47.6	33.3	40.4
LnGrp LOS	F	B	B	E	F	B	F	A	C	D	C	D
Approach Vol, veh/h		857			986			451			317	
Approach Delay, s/veh		27.4			52.8			67.8			42.9	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	16.0	4.9	44.1	17.0	12.5	11.0	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.1	19.9	5.0	35.0	12.5	19.5	6.5	33.5
Max Q Clear Time (g_c+I1), s	9.2	8.6	2.2	19.7	14.5	7.6	8.2	35.5
Green Ext Time (p_c), s	0.1	0.6	0.0	3.9	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	755	10	32	1175	17	45	8	51	39	4	147
Future Volume (veh/h)	45	755	10	32	1175	17	45	8	51	39	4	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1826	1826	1826	1826	1826	1870	1870	1870
Adj Flow Rate, veh/h	45	755	10	32	1175	17	45	8	51	39	4	147
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	7	7	7	5	5	5	5	5	5	2	2	2
Cap, veh/h	203	1074	910	61	1074	910	281	238	201	296	243	206
Arrive On Green	0.04	0.60	0.60	0.03	0.59	0.59	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1711	1796	1522	1739	1826	1547	1207	1826	1547	1344	1870	1585
Grp Volume(v), veh/h	45	755	10	32	1175	17	45	8	51	39	4	147
Grp Sat Flow(s),veh/h/ln	1711	1796	1522	1739	1826	1547	1207	1826	1547	1344	1870	1585
Q Serve(g_s), s	0.6	16.6	0.2	1.0	33.5	0.3	1.9	0.2	1.7	1.5	0.1	5.1
Cycle Q Clear(g_c), s	0.6	16.6	0.2	1.0	33.5	0.3	2.0	0.2	1.7	1.7	0.1	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	1074	910	61	1074	910	281	238	201	296	243	206
V/C Ratio(X)	0.22	0.70	0.01	0.53	1.09	0.02	0.16	0.03	0.25	0.13	0.02	0.71
Avail Cap(c_a), veh/h	277	1074	910	153	1074	910	506	577	489	546	591	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	7.9	4.6	27.0	11.7	4.9	22.5	21.6	22.3	22.4	21.6	23.8
Incr Delay (d2), s/veh	0.5	2.1	0.0	6.9	56.9	0.0	0.3	0.1	0.7	0.2	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.1	0.0	0.5	26.4	0.1	0.5	0.1	0.6	0.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	10.0	4.6	34.0	68.6	4.9	22.7	21.7	22.9	22.6	21.6	28.3
LnGrp LOS	B	B	A	C	F	A	C	C	C	C	C	C
Approach Vol, veh/h		810			1224			104			190	
Approach Delay, s/veh		10.2			66.8			22.8			27.0	
Approach LOS		B			E			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.9	6.5	38.6		11.9	7.0	38.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.0	33.5		18.0	5.0	33.5				
Max Q Clear Time (g_c+I1), s		4.0	3.0	18.6		7.1	2.6	35.5				
Green Ext Time (p_c), s		0.2	0.0	4.9		0.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.9									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	402	387	63	167	373	289	914	42	517	1239	254
Future Volume (veh/h)	268	402	387	63	167	373	289	914	42	517	1239	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	268	402	387	63	167	373	289	914	30	517	1239	254
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	259	318	284	80	139	124	297	1053	35	539	1285	261
Arrive On Green	0.14	0.18	0.18	0.04	0.08	0.08	0.17	0.30	0.30	0.30	0.43	0.43
Sat Flow, veh/h	1795	1791	1598	1795	1791	1598	1781	3511	115	1795	2966	602
Grp Volume(v), veh/h	268	402	387	63	167	373	289	463	481	517	743	750
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1781	1777	1850	1795	1791	1777
Q Serve(g_s), s	13.0	16.0	16.0	3.1	7.0	7.0	14.5	22.2	22.2	25.5	36.2	37.2
Cycle Q Clear(g_c), s	13.0	16.0	16.0	3.1	7.0	7.0	14.5	22.2	22.2	25.5	36.2	37.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.34
Lane Grp Cap(c), veh/h	259	318	284	80	139	124	297	533	555	539	776	770
V/C Ratio(X)	1.03	1.26	1.36	0.79	1.20	3.00	0.97	0.87	0.87	0.96	0.96	0.97
Avail Cap(c_a), veh/h	259	318	284	80	139	124	297	533	555	539	776	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	37.0	37.0	42.6	41.5	41.5	37.3	29.8	29.8	31.0	24.7	25.0
Incr Delay (d2), s/veh	64.8	141.0	184.3	39.9	139.5	922.0	44.8	14.2	13.7	28.8	22.5	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	19.3	20.6	2.3	8.4	34.5	9.9	11.2	11.6	14.9	19.2	20.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.3	178.0	221.3	82.5	181.0	963.5	82.1	44.0	43.5	59.8	47.2	51.0
LnGrp LOS	F	F	F	F	F	F	F	D	D	E	D	D
Approach Vol, veh/h		1057			603			1233			2010	
Approach Delay, s/veh		174.9			654.8			52.7			51.8	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	31.0	8.0	20.0	19.0	43.0	17.0	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	27.0	4.0	16.0	15.0	39.0	13.0	7.0
Max Q Clear Time (g_c+I1), s	27.5	24.2	5.1	18.0	16.5	39.2	15.0	9.0
Green Ext Time (p_c), s	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	531	538	311	206	476	445	427	1289	131	804	2021	494
Future Volume (veh/h)	531	538	311	206	476	445	427	1289	131	804	2021	494
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	531	538	173	206	476	346	427	1289	131	804	2021	345
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	558	645	288	216	502	224	453	1542	479	836	2109	655
Arrive On Green	0.16	0.18	0.18	0.12	0.14	0.14	0.13	0.30	0.30	0.24	0.41	0.41
Sat Flow, veh/h	3483	3582	1598	1795	3582	1598	3483	5147	1598	3483	5147	1598
Grp Volume(v), veh/h	531	538	173	206	476	346	427	1289	131	804	2021	345
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1795	1791	1598	1742	1716	1598	1742	1716	1598
Q Serve(g_s), s	15.1	14.5	10.0	11.4	13.2	14.0	12.1	23.4	6.3	22.8	38.1	16.3
Cycle Q Clear(g_c), s	15.1	14.5	10.0	11.4	13.2	14.0	12.1	23.4	6.3	22.8	38.1	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	558	645	288	216	502	224	453	1542	479	836	2109	655
V/C Ratio(X)	0.95	0.83	0.60	0.96	0.95	1.55	0.94	0.84	0.27	0.96	0.96	0.53
Avail Cap(c_a), veh/h	558	645	288	216	502	224	453	1545	479	836	2111	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	39.5	37.7	43.7	42.6	43.0	43.1	32.7	26.7	37.5	28.7	22.2
Incr Delay (d2), s/veh	26.6	9.2	3.5	48.7	27.7	266.8	28.3	4.2	0.3	22.1	11.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	7.1	4.1	7.9	7.7	22.0	7.0	10.1	2.4	12.1	17.2	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	48.8	41.1	92.4	70.4	309.8	71.4	36.9	27.0	59.7	40.1	23.0
LnGrp LOS	E	D	D	F	E	F	E	D	C	E	D	C
Approach Vol, veh/h		1242			1028			1847			3170	
Approach Delay, s/veh		56.0			155.4			44.2			43.2	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	34.0	16.0	22.0	17.0	45.0	20.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	30.0	12.0	18.0	13.0	41.0	16.0	14.0
Max Q Clear Time (g_c+I1), s	24.8	25.4	13.4	16.5	14.1	40.1	17.1	16.0
Green Ext Time (p_c), s	0.0	3.1	0.0	0.7	0.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	419	362	138	313	332	239	1740	226	539	2622	177
Future Volume (veh/h)	239	419	362	138	313	332	239	1740	226	539	2622	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	239	419	362	138	313	230	239	1740	134	539	2622	126
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	181	307	263	120	251	213	180	1679	129	435	2442	116
Arrive On Green	0.10	0.17	0.17	0.07	0.13	0.13	0.10	0.34	0.34	0.24	0.49	0.49
Sat Flow, veh/h	1810	1840	1581	1795	1885	1598	1795	4874	375	1781	4995	237
Grp Volume(v), veh/h	239	411	370	138	313	230	239	1224	650	539	1777	971
Grp Sat Flow(s),veh/h/ln	1810	1805	1616	1795	1885	1598	1795	1716	1818	1781	1702	1828
Q Serve(g_s), s	9.0	15.0	15.0	6.0	12.0	12.0	9.0	31.0	31.0	22.0	44.0	44.0
Cycle Q Clear(g_c), s	9.0	15.0	15.0	6.0	12.0	12.0	9.0	31.0	31.0	22.0	44.0	44.0
Prop In Lane	1.00		0.98	1.00		1.00	1.00		0.21	1.00		0.13
Lane Grp Cap(c), veh/h	181	301	269	120	251	213	180	1182	626	435	1664	894
V/C Ratio(X)	1.32	1.37	1.37	1.15	1.25	1.08	1.33	1.04	1.04	1.24	1.07	1.09
Avail Cap(c_a), veh/h	181	301	269	120	251	213	180	1182	626	435	1664	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	37.5	37.5	42.0	39.0	39.0	40.5	29.5	29.5	34.0	23.0	23.0
Incr Delay (d2), s/veh	177.6	184.7	190.1	129.2	139.2	84.5	182.0	35.8	46.3	125.4	42.6	56.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	21.9	20.0	6.9	15.2	9.6	13.0	18.0	20.9	24.4	25.9	31.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	218.1	222.2	227.6	171.2	178.2	123.5	222.5	65.3	75.8	159.4	65.6	79.6
LnGrp LOS	F	F	F	F	F	F	F	F	F	F	F	F
Approach Vol, veh/h		1020			681			2113			3287	
Approach Delay, s/veh		223.2			158.3			86.3			85.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	35.0	10.0	19.0	13.0	48.0	13.0	16.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	31.0	6.0	15.0	9.0	44.0	9.0	12.0
Max Q Clear Time (g_c+I1), s	24.0	33.0	8.0	17.0	11.0	46.0	11.0	14.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	112.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	291	430	77	210	193	402	1993	93	224	2767	39
Future Volume (veh/h)	57	291	430	77	210	193	402	1993	93	224	2767	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	57	291	430	77	210	193	402	1993	93	224	2767	39
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	1	1	1
Cap, veh/h	148	311	277	90	315	274	432	2641	123	263	2876	40
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.53	0.53	0.15	0.55	0.55
Sat Flow, veh/h	982	1777	1585	732	1798	1568	3456	5000	233	1795	5230	73
Grp Volume(v), veh/h	57	291	430	77	207	196	402	1355	731	224	1812	994
Grp Sat Flow(s),veh/h/ln	982	1777	1585	732	1777	1588	1728	1702	1828	1795	1716	1872
Q Serve(g_s), s	4.6	12.9	14.0	0.0	8.7	9.3	9.2	25.0	25.1	9.7	40.3	40.8
Cycle Q Clear(g_c), s	13.9	12.9	14.0	14.0	8.7	9.3	9.2	25.0	25.1	9.7	40.3	40.8
Prop In Lane	1.00		1.00	1.00		0.99	1.00		0.13	1.00		0.04
Lane Grp Cap(c), veh/h	148	311	277	90	311	278	432	1798	966	263	1887	1029
V/C Ratio(X)	0.38	0.94	1.55	0.86	0.67	0.70	0.93	0.75	0.76	0.85	0.96	0.97
Avail Cap(c_a), veh/h	148	311	277	90	311	278	432	1798	966	292	1888	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	32.5	33.0	40.0	30.8	31.0	34.6	14.8	14.8	33.3	17.2	17.3
Incr Delay (d2), s/veh	1.6	34.5	264.5	51.2	5.3	7.8	26.7	1.8	3.5	19.2	12.7	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.3	25.6	2.8	4.1	4.0	5.4	9.0	10.2	5.5	17.0	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	67.0	297.5	91.1	36.2	38.8	61.4	16.6	18.3	52.5	29.8	37.5
LnGrp LOS	D	E	F	F	D	D	E	B	B	D	C	D
Approach Vol, veh/h		778			480			2488			3030	
Approach Delay, s/veh		192.4			46.1			24.4			34.0	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.7	46.2		18.0	14.0	48.0		18.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	13.0	41.0		14.0	10.0	44.0		14.0				
Max Q Clear Time (g_c+I1), s	11.7	27.1		16.0	11.2	42.8		16.0				
Green Ext Time (p_c), s	0.1	11.1		0.0	0.0	1.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			49.5
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	265	300	111	255	60	298	1706	135	160	2694	32
Future Volume (veh/h)	8	265	300	111	255	60	298	1706	135	160	2694	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	8	265	300	111	255	38	298	1706	135	160	2694	32
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	128	337	285	110	339	288	212	1987	156	178	2086	25
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.12	0.60	0.60	0.10	0.58	0.58
Sat Flow, veh/h	1086	1870	1585	852	1885	1598	1767	3312	259	1781	3597	43
Grp Volume(v), veh/h	8	265	300	111	255	38	298	899	942	160	1328	1398
Grp Sat Flow(s),veh/h/ln	1086	1870	1585	852	1885	1598	1767	1763	1809	1781	1777	1863
Q Serve(g_s), s	0.7	13.5	18.0	4.5	12.8	2.0	12.0	41.7	43.4	8.9	58.0	58.0
Cycle Q Clear(g_c), s	13.5	13.5	18.0	18.0	12.8	2.0	12.0	41.7	43.4	8.9	58.0	58.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.02
Lane Grp Cap(c), veh/h	128	337	285	110	339	288	212	1058	1085	178	1031	1080
V/C Ratio(X)	0.06	0.79	1.05	1.01	0.75	0.13	1.41	0.85	0.87	0.90	1.29	1.29
Avail Cap(c_a), veh/h	128	337	285	110	339	288	212	1058	1085	178	1031	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	39.2	41.0	49.2	38.9	34.4	44.0	16.3	16.7	44.5	21.0	21.0
Incr Delay (d2), s/veh	0.2	11.7	67.4	88.1	9.1	0.2	208.1	6.7	7.6	40.0	137.3	139.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.2	12.3	5.4	6.7	0.8	17.5	17.1	18.4	5.9	60.8	64.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	50.9	108.4	137.3	47.9	34.6	252.1	23.1	24.3	84.5	158.3	160.3
LnGrp LOS	D	D	F	F	D	C	F	C	C	F	F	F
Approach Vol, veh/h		573			404			2139			2886	
Approach Delay, s/veh		81.0			71.3			55.5			155.1	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.0	64.0		22.0	16.0	62.0		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	60.0		18.0	12.0	58.0		18.0
Max Q Clear Time (g_c+I1), s	10.9	45.4		15.5	14.0	60.0		20.0
Green Ext Time (p_c), s	0.0	11.1		0.2	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	106.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1754	960	45	1372	328	697	507	69	884	1355	12
Future Volume (veh/h)	12	1754	960	45	1372	328	697	507	69	884	1355	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	12	1754	674	45	1372	235	697	507	69	884	1355	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	9	9	2	2	2	3	3	3	5	5	5
Cap, veh/h	13	1275	1001	36	1394	1094	514	561	76	877	1022	9
Arrive On Green	0.01	0.38	0.38	0.02	0.39	0.39	0.15	0.18	0.18	0.26	0.29	0.29
Sat Flow, veh/h	1682	3357	2635	1781	3554	2790	3428	3119	423	3374	3524	31
Grp Volume(v), veh/h	12	1754	674	45	1372	235	697	286	290	884	667	700
Grp Sat Flow(s),veh/h/ln	1682	1678	1317	1781	1777	1395	1714	1763	1779	1687	1735	1820
Q Serve(g_s), s	0.7	38.0	21.3	2.0	38.2	5.6	15.0	15.9	16.0	26.0	29.0	29.0
Cycle Q Clear(g_c), s	0.7	38.0	21.3	2.0	38.2	5.6	15.0	15.9	16.0	26.0	29.0	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.02
Lane Grp Cap(c), veh/h	13	1275	1001	36	1394	1094	514	317	320	877	503	528
V/C Ratio(X)	0.93	1.38	0.67	1.26	0.98	0.21	1.36	0.90	0.91	1.01	1.33	1.33
Avail Cap(c_a), veh/h	34	1275	1001	36	1394	1094	514	317	320	877	503	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	31.0	25.8	49.0	30.1	20.2	42.5	40.1	40.2	37.0	35.5	35.5
Incr Delay (d2), s/veh	96.9	173.8	1.8	238.7	20.3	0.1	172.3	27.0	27.9	32.3	159.9	159.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	45.5	6.7	3.2	19.6	1.8	18.6	9.2	9.4	14.4	34.3	35.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.5	204.8	27.6	287.7	50.4	20.3	214.8	67.1	68.1	69.3	195.4	195.1
LnGrp LOS	F	F	C	F	D	C	F	E	E	F	F	F
Approach Vol, veh/h		2440			1652			1273			2251	
Approach Delay, s/veh		155.6			52.6			148.2			145.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	22.0	6.0	42.0	19.0	33.0	4.8	43.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	18.0	2.0	38.0	15.0	29.0	2.0	38.0
Max Q Clear Time (g_c+I1), s	28.0	18.0	4.0	40.0	17.0	31.0	2.7	40.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	129.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	206	159	55	144	72	115	426	79	103	754	136
Future Volume (veh/h)	60	206	159	55	144	72	115	426	79	103	754	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1870	1870	1870	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	60	206	159	55	144	72	115	426	79	103	754	136
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	151	258	199	89	271	135	146	917	169	132	908	164
Arrive On Green	0.08	0.26	0.26	0.05	0.23	0.23	0.08	0.31	0.31	0.07	0.30	0.30
Sat Flow, veh/h	1810	979	756	1781	1176	588	1753	2949	543	1781	3007	542
Grp Volume(v), veh/h	60	0	365	55	0	216	115	251	254	103	445	445
Grp Sat Flow(s),veh/h/ln	1810	0	1734	1781	0	1764	1753	1749	1743	1781	1777	1773
Q Serve(g_s), s	1.9	0.0	11.7	1.8	0.0	6.4	3.9	6.9	7.0	3.4	14.0	14.0
Cycle Q Clear(g_c), s	1.9	0.0	11.7	1.8	0.0	6.4	3.9	6.9	7.0	3.4	14.0	14.0
Prop In Lane	1.00		0.44	1.00		0.33	1.00		0.31	1.00		0.31
Lane Grp Cap(c), veh/h	151	0	457	89	0	406	146	544	542	132	537	535
V/C Ratio(X)	0.40	0.00	0.80	0.62	0.00	0.53	0.79	0.46	0.47	0.78	0.83	0.83
Avail Cap(c_a), veh/h	544	0	849	199	0	531	173	570	568	193	597	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	20.5	27.9	0.0	20.2	26.9	16.6	16.6	27.2	19.5	19.5
Incr Delay (d2), s/veh	1.7	0.0	3.2	6.8	0.0	1.1	18.2	0.6	0.6	11.5	8.8	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	4.7	0.9	0.0	2.6	2.3	2.6	2.6	1.8	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	0.0	23.8	34.6	0.0	21.3	45.1	17.2	17.2	38.7	28.3	28.3
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	C	C
Approach Vol, veh/h		425			271			620			993	
Approach Delay, s/veh		24.3			24.0			22.4			29.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	23.1	7.5	20.3	9.5	22.6	9.5	18.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	19.5	6.7	29.3	5.9	20.1	18.0	18.0				
Max Q Clear Time (g_c+I1), s	5.4	9.0	3.8	13.7	5.9	16.0	3.9	8.4				
Green Ext Time (p_c), s	0.0	2.2	0.0	2.0	0.0	2.1	0.1	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			25.9									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	972	356	0	834	200	224	72	12	176	125	103
Future Volume (veh/h)	148	972	356	0	834	200	224	72	12	176	125	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	148	972	356	0	834	200	224	72	12	176	125	103
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	2	2	2
Cap, veh/h	147	1138	964	2	863	731	213	193	32	170	186	157
Arrive On Green	0.08	0.61	0.61	0.00	0.47	0.47	0.12	0.12	0.12	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1753	1841	1560	1767	1551	258	1781	1870	1585
Grp Volume(v), veh/h	148	972	356	0	834	200	224	0	84	176	125	103
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1753	1841	1560	1767	0	1809	1781	1870	1585
Q Serve(g_s), s	6.5	33.3	8.9	0.0	34.6	6.1	9.5	0.0	3.4	7.5	5.1	4.9
Cycle Q Clear(g_c), s	6.5	33.3	8.9	0.0	34.6	6.1	9.5	0.0	3.4	7.5	5.1	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	147	1138	964	2	863	731	213	0	226	170	186	157
V/C Ratio(X)	1.01	0.85	0.37	0.00	0.97	0.27	1.05	0.00	0.37	1.04	0.67	0.65
Avail Cap(c_a), veh/h	147	1138	964	111	865	733	213	0	483	170	452	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	12.6	7.8	0.0	20.3	12.7	34.6	0.0	31.6	35.6	34.2	34.1
Incr Delay (d2), s/veh	75.8	6.5	0.2	0.0	22.7	0.2	75.4	0.0	1.0	79.1	4.2	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	13.6	2.7	0.0	18.8	2.0	8.4	0.0	1.5	6.9	2.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.9	19.1	8.0	0.0	43.0	12.9	110.0	0.0	32.6	114.7	38.4	38.7
LnGrp LOS	F	B	A	A	D	B	F	A	C	F	D	D
Approach Vol, veh/h		1476			1034			308			404	
Approach Delay, s/veh		25.7			37.2			88.9			71.7	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	14.3	0.0	52.4	14.0	12.3	11.0	41.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	21.0	5.0	38.5	9.5	19.0	6.5	37.0
Max Q Clear Time (g_c+I1), s	9.5	5.4	0.0	35.3	11.5	7.1	8.5	36.6
Green Ext Time (p_c), s	0.0	0.3	0.0	2.3	0.0	0.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

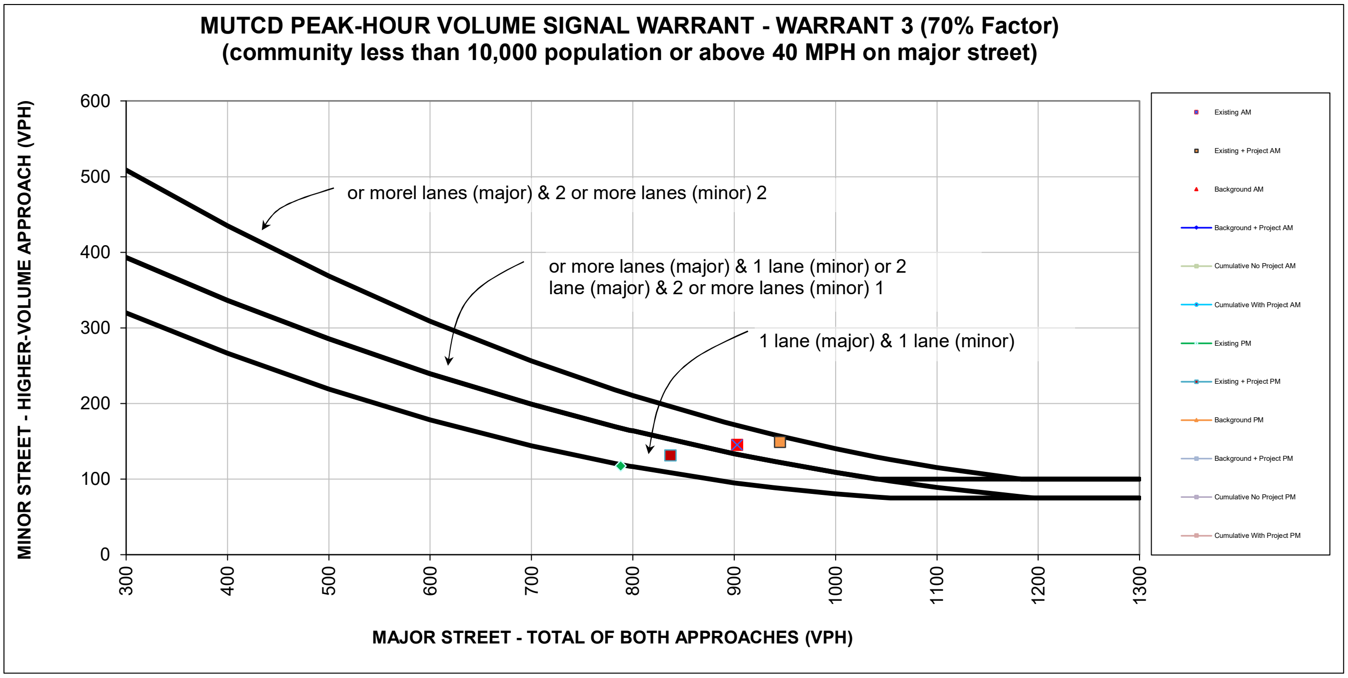
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1471	53	41	1101	35	34	4	27	18	4	100
Future Volume (veh/h)	166	1471	53	41	1101	35	34	4	27	18	4	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	166	1471	53	41	1101	35	34	4	27	18	4	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	3	3	3	4	4	4	5	5	5
Cap, veh/h	210	1134	961	67	1068	905	59	186	158	36	161	137
Arrive On Green	0.06	0.60	0.60	0.04	0.58	0.58	0.03	0.10	0.10	0.02	0.09	0.09
Sat Flow, veh/h	1795	1885	1598	1767	1856	1572	1753	1841	1560	1739	1826	1547
Grp Volume(v), veh/h	166	1471	53	41	1101	35	34	4	27	18	4	100
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1767	1856	1572	1753	1841	1560	1739	1826	1547
Q Serve(g_s), s	2.8	45.5	1.0	1.7	43.5	0.7	1.4	0.1	1.2	0.8	0.2	4.8
Cycle Q Clear(g_c), s	2.8	45.5	1.0	1.7	43.5	0.7	1.4	0.1	1.2	0.8	0.2	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1134	961	67	1068	905	59	186	158	36	161	137
V/C Ratio(X)	0.79	1.30	0.06	0.61	1.03	0.04	0.57	0.02	0.17	0.50	0.02	0.73
Avail Cap(c_a), veh/h	214	1134	961	117	1068	905	116	451	382	115	447	379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	15.1	6.2	35.8	16.0	7.0	36.0	30.6	31.1	36.6	31.5	33.6
Incr Delay (d2), s/veh	17.5	140.3	0.0	8.5	35.8	0.0	8.5	0.0	0.5	10.2	0.1	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	59.8	0.3	0.9	25.8	0.2	0.7	0.1	0.5	0.4	0.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	155.4	6.2	44.3	51.8	7.0	44.5	30.6	31.6	46.8	31.5	40.9
LnGrp LOS	D	F	A	D	F	A	D	C	C	D	C	D
Approach Vol, veh/h		1690			1177			65			122	
Approach Delay, s/veh		138.9			50.2			38.3			41.4	
Approach LOS		F			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	12.2	7.4	50.0	7.1	11.2	9.3	48.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.5	5.0	43.5	5.0	18.5	5.0	43.5				
Max Q Clear Time (g_c+I1), s	2.8	3.2	3.7	47.5	3.4	6.8	4.8	45.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			98.7									
HCM 6th LOS			F									

Appendix C

Peak-Hour Signal Warrant Worksheets

Lee Subdivision

11 . Fairview Road & Hillcrest Road



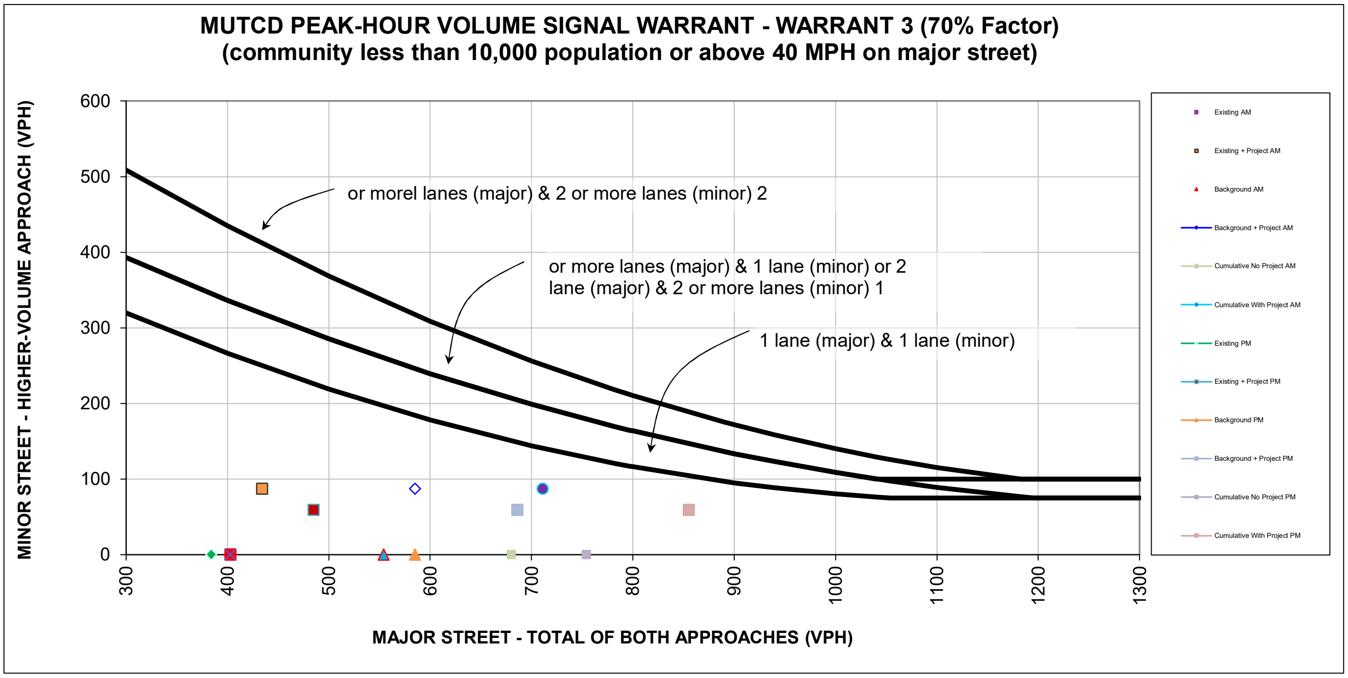
Source: Figure 4C-4 of the Manual on Unifrom Traffic Control and Devices (MUTCD) from California Department of Transportation (Caltrans).
* 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes
and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

		Approach Lanes: One	Approach Lanes: 2 or More	AM Peak Hour: Existing AM	Existing + Project AM	Background AM	Background + Project AM	Cumulative No Project AM	Cumulative With Project AM
Major Street - Both Approaches	Fairview Road	X		903	945	1331	1361	1471	1501
Minor Street - Highest Approach	Hillcrest Road	X		145	149	337	595	337	337
Maximum warrant threshold for minor street volume				94	88	75	75	75	75
Difference between warrant threshold & minor street volume				51	61	262	520	262	262
		Warrant Met?		Yes	Yes	Yes	Yes	Yes	Yes

		Approach Lanes: One	Approach Lanes: 2 or More	PM Peak Hour: Existing PM	Existing + Project PM	Background PM	Background + Project PM	Cumulative No Project PM	Cumulative With Project PM
Major Street - Both Approaches	Fairview Road	X		788	837	1394	1431	1576	1613
Minor Street - Highest Approach	Hillcrest Road	X		117	131	400	679	417	425
Maximum warrant threshold for minor street volume				119	108	75	75	75	75
Difference between warrant threshold & minor street volume				2	23	325	604	342	350
		Warrant Met?		No	Yes	Yes	Yes	Yes	Yes

Lee Subdivision

13 . Fairview Road & Old Ranch Road



Source: Figure 4C-4 of the Manual on Unifrom Traffic Control and Devices (MUTCD) from California Department of Transportation (Caltrans).
* 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.

AM Peak Hour

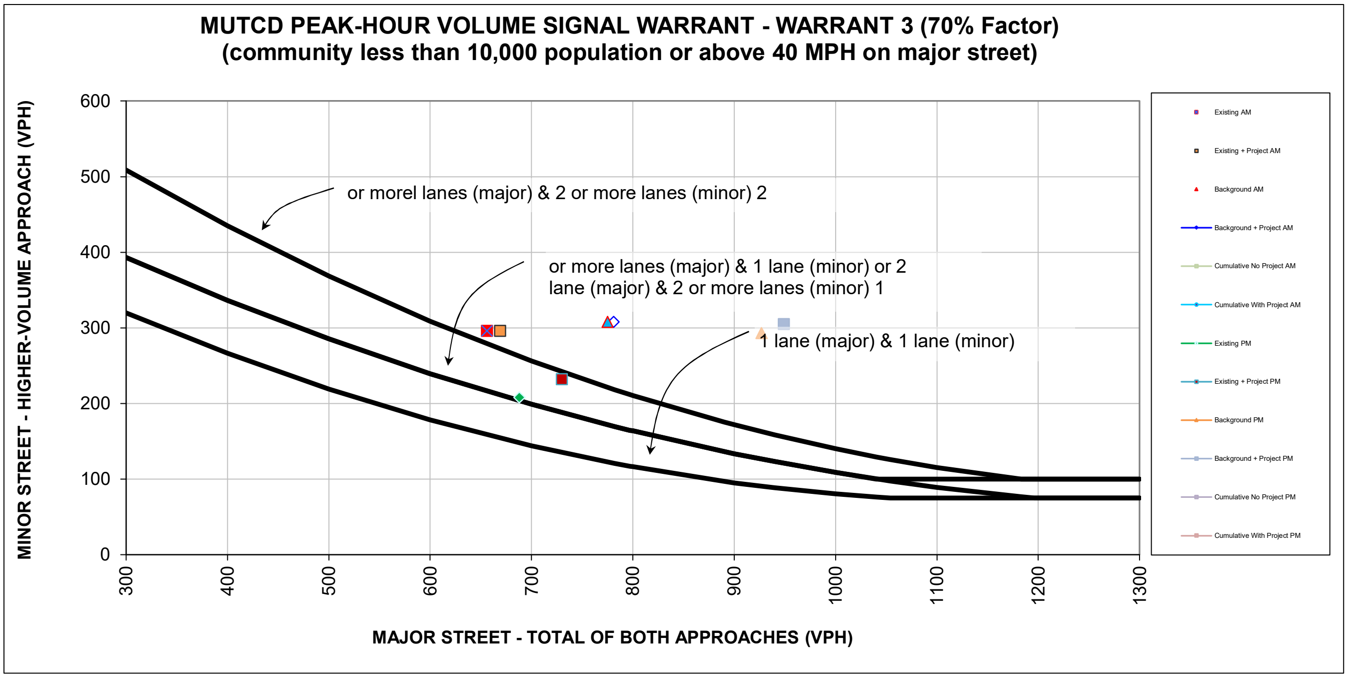
		Approach Lanes: One	Approach Lanes: 2 or More	Existing AM	Existing + Project AM	Background AM	Background + Project AM	Cumulative No Project AM	Cumulative With Project AM
Major Street - Both Approaches	Fairview Road	X		403	434	554	585	680	711
Minor Street - Highest Approach	Old Ranch Road	X		0	87	0	87	0	87
Maximum warrant threshold for minor street volume				265	249	196	184	150	141
Difference between warrant threshold & minor street volume				265	162	196	97	150	54
		Warrant Met?		No	No	No	No	No	No

PM Peak Hour

		Approach Lanes: One	Approach Lanes: 2 or More	Existing PM	Existing + Project PM	Background PM	Background + Project PM	Cumulative No Project PM	Cumulative With Project PM
Major Street - Both Approaches	Fairview Road	X		384	485	585	686	754	855
Minor Street - Highest Approach	Old Ranch Road	X		0	59	0	59	0	59
Maximum warrant threshold for minor street volume				274	226	184	148	128	104
Difference between warrant threshold & minor street volume				274	167	184	89	128	45
		Warrant Met?		No	No	No	No	No	No

Lee Subdivision

14 . Fairview Road/Ridgemark Drive & Airline Highway



Source: Figure 4C-4 of the Manual on Unifrom Traffic Control and Devices (MUTCD) from California Department of Transportation (Caltrans).
* 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.

AM Peak Hour

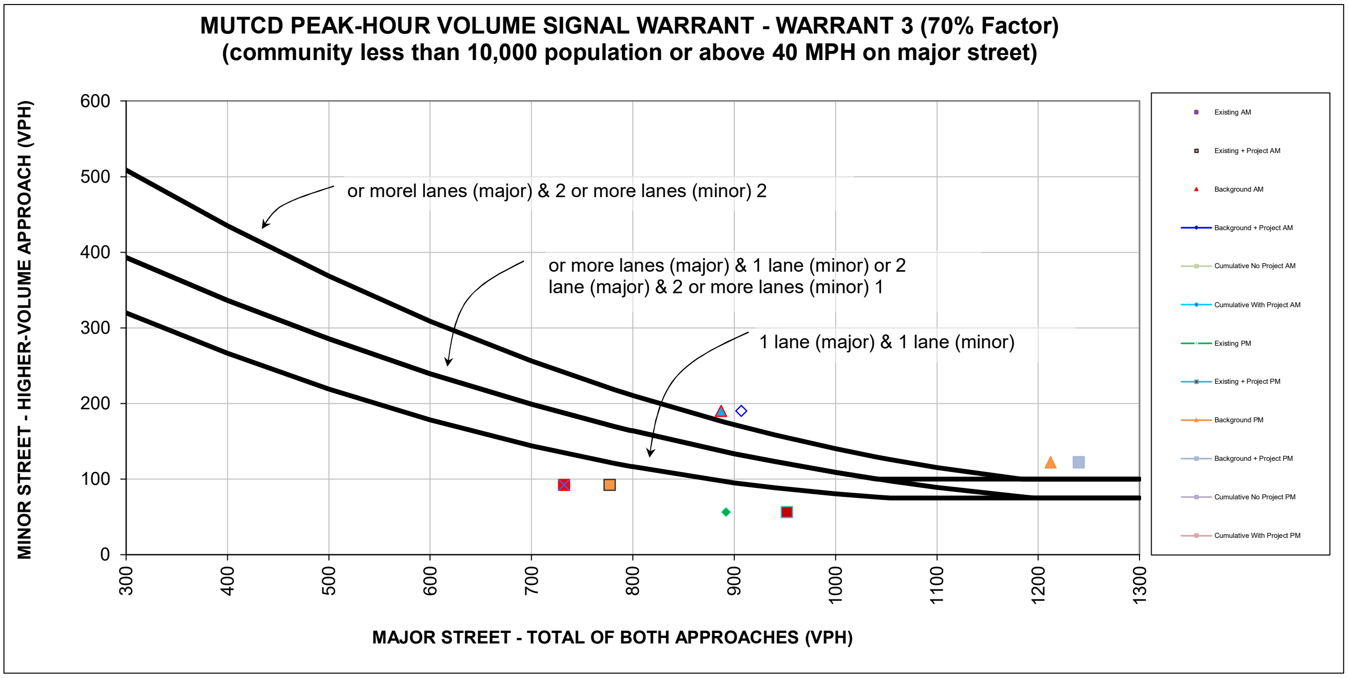
		Approach Lanes: One	Approach Lanes: 2 or More	Existing AM	Existing + Project AM	Background AM	Background + Project AM	Cumulative No Project AM	Cumulative With Project AM
Major Street - Both Approaches	Airline Highway	X		656	669	775	781	1837	1843
Minor Street - Highest Approach	Fairview Road/Ridgemark Drive	X		296	296	308	308	451	451
Maximum warrant threshold for minor street volume				158	154	123	121	75	75
Difference between warrant threshold & minor street volume				138	142	185	187	376	376
		Warrant Met?		Yes	Yes	Yes	Yes	Yes	Yes

PM Peak Hour

		Approach Lanes: One	Approach Lanes: 2 or More	Existing PM	Existing + Project PM	Background PM	Background + Project PM	Cumulative No Project PM	Cumulative With Project PM
Major Street - Both Approaches	Airline Highway	X		688	730	927	949	2488	2510
Minor Street - Highest Approach	Fairview Road/Ridgemark Drive	X		208	232	293	305	392	404
Maximum warrant threshold for minor street volume				148	135	90	87	75	75
Difference between warrant threshold & minor street volume				60	97	203	218	317	329
		Warrant Met?		Yes	Yes	Yes	Yes	Yes	Yes

Lee Subdivision

15 . Enterprise Road & Airline Highway



Source: Figure 4C-4 of the Manual on Unifrom Traffic Control and Devices (MUTCD) from California Department of Transportation (Caltrans).
* 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.

		Approach Lanes One	Approach Lanes 2 or More	AM Peak Hour: Existing AM	Existing + Project AM	Background AM	Background + Project AM	Cumulative No Project AM	Cumulative With Project AM
Major Street - Both Approaches	Airline Highway	X		732	777	887	907	2014	2034
Minor Street - Highest Approach	Enterprise Road	X		92	92	190	190	190	190
Maximum warrant threshold for minor street volume				134	122	97	94	75	75
Difference between warrant threshold & minor street volume				42	30	93	96	115	115
		Warrant Met?		No	No	Yes	Yes	Yes	Yes

		Approach Lanes One	Approach Lanes 2 or More	PM Peak Hour: Existing PM	Existing + Project PM	Background PM	Background + Project PM	Cumulative No Project PM	Cumulative With Project PM
Major Street - Both Approaches	Airline Highway	X		892	952	1212	1240	2839	2867
Minor Street - Highest Approach	Enterprise Road	X		56	56	122	122	122	122
Maximum warrant threshold for minor street volume				96	87	75	75	75	75
Difference between warrant threshold & minor street volume				40	31	47	47	47	47
		Warrant Met?		No	No	Yes	Yes	Yes	Yes

Appendix I

Additional VMT Analysis

Kimley»Horn

Memorandum

To: Bill Lee

From: Ayberk Kocatepe, Ph.D.,
Michael Schmitt, P.E., AICP CTP, PTP, RSP1

Re: ***Contract Amendment No. 2 (Additional VMT Analysis and Mitigations)***
Lee Subdivision Project,
Vehicle Miles Traveled (VMT) Analysis and Mitigations
San Benito County

Date: April 2024

This memorandum documents an alternative Vehicle Miles Traveled (VMT) analysis completed for the proposed Lee Subdivision (the "Project" or "Proposed Project") in San Benito County, California. The Proposed Project is expected to consist of a total of 141 single-family residential units, and 25 accessory dwelling units (ADUs). In the alternative scenarios, the project still has 141 single-family residential units, but the number of ADUs increases to 30. With the passage of Senate Bill 743 (SB 743), VMT has become an important indicator for determining if new development will result in a "significant transportation impact" under the California Environmental Quality Act (CEQA). This memorandum summarizes the additional VMT analysis and resultant findings for the proposed Lee Subdivision project. This analysis, compared to previous analyses of the project, evaluates the impact of affordable housing on transportation impact.

Summary

The analysis focused on the VMT per Capita for different scenarios and compared it to the County threshold. The findings revealed that the Project exceeded the threshold prior to any modifications, indicating a significant transportation impact. To minimize VMT impact, the analysis considered various housing options and income levels, to estimate trip distances accurately. Through the implementation of modifications, two scenarios were identified where the Project's transportation impact was reduced to levels considered less than significant. Scenario B included 30 ADUs deed-restricted for low-income individuals, and Scenario C included 30 ADUs with 15 of them deed-restricted for low-income individuals. The analysis complies with the County's VMT policy, dated May 12, 2022, including screening criteria, significance thresholds, and VMT analysis methodology.

Analysis

VMT was calculated for the Project using three separate steps. First, the travel distance between each pair of TAZs was calculated using the County's travel demand model. The county's travel demand model outputs provide traveled distances for each origin-destination pair by trip purpose and trip mode. The second step calculated the VMT between each TAZ by multiplying the number of trips between each TAZ by the calculated distance between each TAZ. Finally, the VMT was categorized as either home-based or home-based work VMT. The categorization is completed by determining the percentage of vehicle productions and attractions by trip purpose and direction (departures and returns). These percentages are then applied to the total VMT estimates, to determine the VMT by trip purpose and direction. The home-based VMT summarizes VMT by the production TAZ for residential uses. To determine the residential VMT produced by the Project, the Home Based VMT for the Project TAZ was totaled and divided by the total residential population to obtain a VMT per Capita value for the Project.
Table 1 summarizes the total VMT per San Benito County and the Project TAZ.

Table 1 – Vehicle Miles Traveled (VMT) by Land Use and Scenario

Geography	Residential VMT	Population	VMT/Capita
San Benito County	1,420,642	61,501	23.09
Project TAZ	6,256	294	21.26

Following the calculation of VMT per Capita for the proposed Project, and the County, the County thresholds were identified. San Benito County's Draft SB743 Implementation Policy, dated May 12, 2022, page 9, exhibit 5 states that the County threshold for Residential is **19.6** VMT/Capita (Please refer to Appendix A).

Table 2 summarizes the VMT per Capita for the proposed Project and compares it to the County threshold. Per the county's impact thresholds, the project would need to implement VMT reduction measures to achieve an 8.3% percent reduction in its VMT per capita for the proposed residential uses to reduce its impact to less than significant levels.

Table 2 – Vehicle Miles Traveled (VMT) by Land Use and Scenario

Scenario	VMT/Capita (Residential)
Calculated VMT per Capita by Scenario	
County Average	**23.09**
County Threshold	**19.63**
Project	21.26
VMT per Capita as a Percent of Threshold by Scenario	
Project	108.3%
Over Threshold?	
Project	**Yes**

As part of the analysis, various housing options (such as ADUs, deed-restricted units, and local lottery units) and different household income levels were taken into account to minimize the impact on vehicle miles traveled (VMT). In order to assist public agencies in implementing SB 743, the Governor's Office of Planning and Research (OPR) recommends measuring VMT for residential areas on a "per rate" basis. Therefore, to determine the trip generation rates for affordable housing units, the 11th Edition of the ITE Trip Generation manual was used as a point of reference. Table 3 that affordable housing (AH) has a trip reduction rate of 49% based on the ITE manual.

Table 3 – ITE Trip Reduction

ITE Land Use Code	ITE Land Use Description	Daily Trip Generation Rate
210	Single-Family Detached Housing	9.43
223	Affordable Housing	4.81
Affordable Housing Reduction (%)		**49%**

This reduction rate was used to account for the reduction due to affordable housing (AH) housing options. The average trip rate per home-based (HB) trips and home-based work (HBW) trips were calculated based on the county's travel demand model outputs, were determined, and then multiplied by a factor of 49% to estimate the AH trip rates per household.

Table 4 summarizes the total trips, total households, and the trip rates per trip purpose.

Table 4 – Trip Rates by Purpose by Housing Type

Project TAZ	Trips	Households (HH)	Trip Rate per HH	Trip Reduction Rate	AH Trip Rate per HH
Home-based (HB)	324	96	3.38	0.49	1.72
Home-based Work (HBW)	167	96	1.74	0.49	0.87

Trip distances for different purposes, income groups, and housing options were calculated using the county's travel demand model, and Replica data – a data analytics platform. First, average trip distances for all trips, and trips starting and ending in San Benito County were calculated by trip purpose using the county's travel demand model. Next, using Replica data, the ratio of trip distances for low-income households to those of all income groups was determined for each trip purpose for the region and San Benito County. This ratio was then applied to the average trip distances across all income groups to derive the average trip distance for low-income households per trip purpose. Table 5 summarizes the average trip distances by destination, income group, and trip purpose.

Table 5 – Average Trip Distances

Destination	Average Distance for HB Vehicle Trips		Average Distance for HBW Vehicle Trips	
	All Income	Low Income	All Income	Low Income
All	18.63	13.22	23.20	22.74
San Benito County	4.78	4.21	5.08	4.98

Furthermore, the project team concentrated their efforts on four distinct modifications during the VMT analysis, as shown below:

1 – No Analysis Adjustments (This is the base case. This modification considers all home-based trips with no low income or destination distinction)
2 – Low Income (51%-80% AMI) Trip Generation Reduction (Reduced trip generation rates based on ITE data. This modification considers all home-based affordable housing trips with low-income trip distances to all destinations)
3 – Low Income (51%-80% AMI) Trip Generation Effect and Low-Income Trip Distance Reduction (Similar to 2, with the additional aspect of shorter trip distances derived from an analysis of big data. This modification considers low-income home-based trips only in San Benito County)
4 – 3 plus "local lottery" (Option where eligible individuals or families are selected locally through a lottery system to obtain housing units. It's important to note that the effect of the "local lottery" is distinct from the reduction in the low-income trip distance; the latter is assumed to occur regardless of whether the lottery takes place and is calculated separately. This modification considers individuals or families that live and work in San Benito County. As a proxy to this modification, for trip distances, HBW trips from all income groups that take place in San Benito County were considered.)

Based on these definitions for the modifications, associated values were identified through Table 3, Table 4, and Table 5 for each scenario with average household size being 2.96 based on the County's travel demand model. These modifications were implemented for the relevant housing types involved in the project, such as ADUs, single-family units, and deed-restricted units for low-income individuals using the formula below for each scenario, with ***n*** representing the type of modification identified above, ranging from 1 to 4. Various combinations of these adjustments were tested to ascertain the scenarios that effectively mitigate the impact to levels considered less than significant using the formula below.

$$VMT\ per\ capita = \frac{\sum_{n=1}^{4}(Number\ of\ Units_n * Trip\ Rate_n * Average\ Trip\ Distance_n)}{(\sum_{n=1}^{4} Number\ of\ Units_n) * Average\ Household\ Size}$$

Findings

The results presented in **Table 6** indicate the following findings derived from the analysis:

- *The Project (Scenario A) is determined to have a significant transportation impact.*
- *The Project is determined to have a less than significant transportation impact under two scenarios:*
    - *Scenario B:* ***30*** *ADUs deed-restricted for low-income Individuals*
    - *Scenario C:* ***30*** *ADUs with* ***15*** *of them deed-restricted for low-income individuals.*

Table 6 – Scenario Analysis

Scenario	Total Housing	Housing Types (*units*)				Modifications (*units*)				VMT per Capita	County VMT Threshold	VMT needs to be mitigated
		SFU	ADU	ADU-DR for Low Income	SFU-DR for Low Income	1	2	3	4			
A	166	141	25	0	0	166	0	0	0	21.26	19.63	8.3%
B	171	141	0	30	0	141	0	30	0	17.75	19.63	-9.6%
C	171	141	15	15	0	156	0	15	0	19.50	19.63	-0.6%
SF: Single Family Units; ADU: Accessory Dwelling Unit; DR: Deed-Restricted; VMT: Vehicle Miles Traveled												

Appendix J

Supplemental Cultural Resources Analysis

CONFIDENTIAL APPENDIX

**To protect sensitive information about the location and nature of cultural resources, this appendix is not included in the public draft of this document.