DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

CEQA Referral Initial Study And Notice of Intent to Adopt a Mitigated Negative Declaration

Date:	**March 3, 2021**
To:	**Distribution List (See Attachment A)**
From:	**Kristin Doud, Principal Planner, Planning and Community Development**
Subject:	**GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2019-0079 – CAL SIERRA FINANCIAL, INC.**
Comment Period:	**March 3, 2021 – April 5, 2021**
Respond By:	**April 5, 2021**
Public Hearing Date:	**April 15, 2021**

You may have previously received an Early Consultation Notice regarding this project, and your comments, if provided, were incorporated into the Initial Study. Based on all comments received, Stanislaus County anticipates adopting a Mitigated Negative Declaration for this project. This referral provides notice of a 30-day comment period during which Responsible and Trustee Agencies and other interested parties may provide comments to this Department regarding our proposal to adopt the Mitigated Negative Declaration.

All applicable project documents are available for review at: Stanislaus County Department of Planning and Community Development, 1010 10th Street, Suite 3400, Modesto, CA 95354. Please provide any additional comments to the above address or call us at (209) 525-6330 if you have any questions. Thank you.

Applicant:	**Cal Sierra Financial, Inc.**
Project Location:	**Pirrone Road, on the east side of the Pirrone Road and Hammett Road intersection, east of Highway 99, in the Community of Salida.**
APN:	**003-014-007**
Williamson Act Contract:	**N/A**
General Plan:	**Commercial**
Community Plan:	**Commercial**
Current Zoning:	**SCP C-2 (Salida Community Plan – General Commercial)**

Project Description: This is a request to amend the general plan and zoning designation of a 9.6-acre site, from Commercial and Salida Community Plan General Commercial (SCP C-2) to Planned Development, to allow for development of a convenience store/community market, gas station, restaurant, retail building, and mini-storage facility to be developed on approximately four acres of the site.

The project proposes the following uses:

- **2,310 square feet of retail space**
- **3,250 square feet of fast-food restaurant space with drive-thru and outdoor dining area**
- **Service station with six pumps**
- **Two above-ground gasoline storage tanks**
- **4,500 square feet of convenience market space**
- **61,460 square feet of mini storage with 1,400 square feet of office space**

The mini-storage buildings are proposed to be placed along the southeastern, eastern, and northern boundaries of the project site to act as a buffer between the proposed development and the existing residential uses to the south and southeast. Although the use types are specified in this request, no specific users are identified at this time. However, the project estimates 18 employees will be on-site during a maximum shift, 60 customers, and deliveries as needed. Hours of operation for the market are proposed to be 24 hours a day, seven days a week. Delivery cutoff time for the proposed site will be 6 p.m. The remaining acres of the site will remain undeveloped, with the exception of a storm drainage basin, with no public access and will be required to obtain land use entitlements prior to future developments. The site is proposed to be served by the City of Modesto for water and Salida Sanitary for sewer services.

A request to amend the General Plan and Community Plan designation of Commercial to Planned Development is also included in this request to correct a draftsman's error that occurred when the Salida Community Plan map was amended in 2007. The project site was part of the prior Salida Community Plan and, as such, the current designations were established in error with the adoption of the 2007 Salida Initiative. This request will return the property back to its original, pre-2007 Initiative, General Plan and Community Plan designations of Planned Development.

Full document with attachments available for viewing at:
http://www.stancounty.com/planning/pl/act-projects.shtm

I:\Planning\Forms and Templates\Project Forms\Microsoft Word\30-Day Referral\CEQA-30-day-referral.doc

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GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2019-0079 – CAL SIERRA FINANCIAL, INC.
Attachment A

Distribution List

	CA DEPT OF CONSERVATION Land Resources / Mine Reclamation		STAN CO ALUC
X	CA DEPT OF FISH & WILDLIFE		STAN CO ANIMAL SERVICES
	CA DEPT OF FORESTRY (CAL FIRE)	X	STAN CO BUILDING PERMITS DIVISION
X	CA DEPT OF TRANSPORTATION DIST 10	X	STAN CO CEO
X	CA OPR STATE CLEARINGHOUSE		STAN CO CSA
X	CA RWQCB CENTRAL VALLEY REGION	X	STAN CO DER
	CA STATE LANDS COMMISSION	X	STAN CO ERC
	CEMETERY DISTRICT		STAN CO FARM BUREAU
	CENTRAL VALLEY FLOOD PROTECTION	X	STAN CO HAZARDOUS MATERIALS
X	CITY OF: MODESTO		STAN CO PARKS & RECREATION
X	SANITARY DISTRICT: SALIDA	X	STAN CO PUBLIC WORKS
X	COOPERATIVE EXTENSION		STAN CO RISK MANAGEMENT
X	COUNTY OF: SAN JOAQUIN	X	STAN CO SHERIFF
X	FIRE PROTECTION DIST: SALIDA FIRE	X	STAN CO SUPERVISOR DIST #3: WITHROW
	HOSPITAL DIST:	X	STAN COUNTY COUNSEL
X	IRRIGATION DIST: MODESTO	X	StanCOG
X	MOSQUITO DIST: EAST SIDE MOSQUITO	X	STANISLAUS FIRE PREVENTION BUREAU
X	MOUNTAIN VALLEY EMERGENCY MEDICAL SERVICES	X	STANISLAUS LAFCO
X	MUNICIPAL ADVISORY COUNCIL: SALIDA	X	SURROUNDING LAND OWNERS
X	PACIFIC GAS & ELECTRIC	X	TELEPHONE COMPANY: AT&T
	U.S. POSTMASTER:	X	TRIBAL CONTACTS (CA Government Code §65352.3)
X	RAILROAD: UNION PACIFIC RAILROAD		US ARMY CORPS OF ENGINEERS
X	SAN JOAQUIN VALLEY APCD		US FISH & WILDLIFE
X	SCHOOL DIST 1: SALIDA UNION		US MILITARY (SB 1462) (7 agencies)
X	SCHOOL DIST 2: MODESTO UNION		USDA NRCS
	STAN ALLIANCE		WATER DIST:
X	STAN CO AG COMMISSIONER		
	TUOLUMNE RIVER TRUST		

STANISLAUS COUNTY
CEQA REFERRAL RESPONSE FORM

TO: **Stanislaus County Planning & Community Development**
1010 10th Street, Suite 3400
Modesto, CA 95354

FROM: ____

SUBJECT: **GENERAL PLAN AMENDMENT AND REZONE APPLICATION NO. PLN2019-0079 – CAL SIERRA FINANCIAL, INC.**

Based on this agency's particular field(s) of expertise, it is our position the above described project:

______ Will not have a significant effect on the environment.
______ May have a significant effect on the environment.
______ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) – (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts: *PLEASE BE SURE TO INCLUDE WHEN THE MITIGATION OR CONDITION NEEDS TO BE IMPLEMENTED (PRIOR TO RECORDING A MAP, PRIOR TO ISSUANCE OF A BUILDING PERMIT, ETC.):*

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

____

____

Response prepared by:

____

Name Title Date

Stanislaus County

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CEQA INITIAL STUDY

Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

1.	**Project title:**	General Plan Amendment and Rezone Application No. PLN2019-0079 – Cal Sierra Financial, Inc. SCH No. 2019090255
2.	**Lead agency name and address:**	Stanislaus County 1010 10th Street, Suite 3400 Modesto, CA 95354
3.	**Contact person and phone number:**	Kristin Doud, Principal Planner (209) 525-6330
4.	**Project location:**	Pirrone Road, on the east side of the Pirrone Road and Hammett Road intersection, east of Highway 99, in the Community of Salida. (APN: 003-014-007).
5.	**Project sponsor's name and address:**	Baldev Grewal, dba Cal Sierra Financial Inc; 2807 G St., Merced, CA, 95340
6.	**General Plan designation:**	Commercial (General Plan and Salida Community Plan designation)
7.	**Zoning:**	SCP C-2 (Salida Community Plan – General Commercial)

8. Description of project:

This is a request to amend the general plan and zoning designation of a 9.6-acre site, from Commercial and Salida Community Plan General Commercial (SCP C-2) to Planned Development, to allow for development of a convenience store/community market, gas station, restaurant, retail building, and mini-storage facility to be developed on approximately four acres of the site. The project proposes the following uses:

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The mini-storage buildings are proposed to be placed along the southeastern, eastern, and northern boundaries of the project site to act as a buffer between the proposed development and the existing residential uses to the south and southeast. Although the use types are specified in this request, no specific users are identified at this time. However, the project estimates 18 employees will be on-site during a maximum shift, 60 customers, and deliveries as needed. Hours of operation for the market are proposed to be 24 hours a day, seven days a week. Delivery cutoff time for the proposed site will be 6 p.m. The remaining acres of the site will remain undeveloped, with the exception of a storm drainage basin, with no public access and will be required to obtain land use entitlements prior to future developments. The site is proposed to be served by the City of Modesto for water and Salida Sanitary for sewer services.

A request to amend the General Plan and Community Plan designation of Commercial to Planned Development is also included in this request to correct a draftsman's error that occurred when the Salida Community Plan map was amended in 2007. The project site was part of the prior Salida Community Plan and, as such, the current designations were established in error with the adoption of the 2007 Salida Initiative. This request will return the property back to its original, pre-2007 Initiative, General Plan and Community Plan designations of Planned Development.

9. Surrounding land uses and setting:

Single-family residences, light industrial uses, and agricultural land to the east and southeast; Vacant land and California State Highway 99 to the west and south; and vacant land to the north.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

CalTrans
San Joaquin Valley Air Pollution Control District
Stanislaus County Department of Public Works
Stanislaus County Department of Environmental Resources
City of Modesto Community and Economic Development Department

11. Attachments:

1. Air Quality and Health Risk Assessment, conducted by Illingworth and Rodkin, Inc., dated February 5, 2021
2. Central California Information Center records search
3. Noise Study, conducted by Acoustics Group, Inc., dated February 15, 2021
4. Traffic Impact Analysis, conducted by Pinnacle Traffic Engineering, dated March 9, 2020
5. Supplemental Traffic Generation Analysis, conducted by Pinnacle Traffic Engineering, dated January 22, 2021
6. Project Memo, received from the Department of Public Works, dated February 25, 2021 and September 11, 2020.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

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

☒ **I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.**

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

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

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

Signature on file.	**February 26, 2021**
Prepared by Kristin Doud, Principal Planner	Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, than the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration.

Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). References to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significant criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significant.

ISSUES

I. AESTHETICS – Except as provided in Public Resources Code Section 21099, could the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		

Discussion: The site itself is not considered to be a scenic resource or unique scenic vista. The site is currently vacant and is surrounded by single-family residences, light industrial uses, and agricultural land to the east and southeast, vacant land and California State Highway 99 to the west and south, and vacant land to the north. The buildings for this site are proposed to be single story with modern farm style architecture, which is consistent with the area and other development along the Highway 99 corridor. The project proposes to include a monument sign, which will be approximately six feet in height and 12 feet wide, which will not include any animated messaging, and will act as the signage for the multiple tenants occupying site. The project also proposes a six-foot-tall CMU masonry wall to be installed along the northern and eastern perimeter behind the proposed ministorage buildings. Additional wrought iron fencing is proposed to be installed along the southeastern corner of the property which is proposed to remain vacant due to required roadway dedication. Evergreen trees will be planted along the northern and eastern property lines to provide a visual buffer for the adjacent land uses. The southern and western property lines will include a landscape strip planted along the road frontage which is proposed to include a mixture of decorative trees and low growing drought tolerant grasses. The project site will be required to annex into the existing Salida Lighting District to provide funding for maintenance of lighting, which will be incorporated into the project as a development standard.

A referral response was received from the Stanislaus County Environmental Review Committee indicating that potential light impacts should be considered in the project review. 19.5-foot-tall light poles, to include dark sky lighting, are proposed to be installed throughout the parking lot. To prevent the potential for the creation of a new source of substantial light or glare affecting the day or nighttime views in the area, a mitigation measure has been applied to the project requiring that a photometric lighting plan be submitted for review and approval to the Planning Department. With the inclusion of this mitigation measure, aesthetic impacts from the project are considered to be less-than significant with mitigation included.

Mitigation:

1. Prior to issuance of any building permit, a photometric lighting plan shall be submitted for review and approval by the Planning Department. All exterior lighting shall be designed (aimed down and toward the site) to provide adequate illumination without a glare effect. This shall include, but not be limited to, the use of shielded light fixtures to prevent skyglow (light spilling into the night sky) and the installation of shielded fixtures to prevent light trespass (glare and spill light that shines onto neighboring properties). The height of the lighting fixtures shall not exceed 20 feet above grade.

References: Application materials; Referral response received from the Stanislaus County Environmental Review Committee, dated September 30, 2019 and February 11, 2020; Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Stanislaus County Zoning Ordinance; the Stanislaus County General Plan; and Support Documentation[1].

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Discussion: The USDA Natural Resources Conservation Service's Eastern Stanislaus County Soil Survey indicates that the property is made up of Dinuba fine sandy loam (DmA), Hanford sandy loam (HdA), and Oakdale sandy loam (OaA) soils. Theses soils are considered to be prime soils based on their Storie Index Ratings (which range between 81-95) and their Grade of 1 and are designated as prime soils on the California Department of Conservation's Important Farmland Maps.

The site is vacant and not actively farmed. Single-family residences, light industrial uses, and agricultural land surround the site to the east and southeast; vacant land and California State Highway 99 to the west and south; and vacant land to the north. On August 7, 2007, the Stanislaus County Board of Supervisors passed an ordinance to implement the Salida Area Planning "Roadway Improvement, Economic Development and Salida Area Farmland Protection and Planning Initiative," also known as the Salida Initiative, which amended the Salida Community Plan. The amended Salida Community Plan provides land use planning and guidance for development of approximately 4,600 acres of land in the Salida area. The Community Plan encompasses the existing community of Salida, which was part of the previously approved Salida Community Plan (Existing Plan Area), and an amendment area encompassing approximately 3,383 acres (Amendment Area). Property within the Salida Community Plan Amendment area may be treated under the A-2 (General Agriculture) zoning district regulations if restricted by a Williamson Act Contract. Otherwise, no property within the Salida Community Plan zoning (which includes the amendment area) may develop until a programmatic-level Environmental Impact Report (EIR) evaluating the environmental impacts associated with the build out of the entire Salida Community Plan Amendment area is prepared. With the passage of the Salida Initiative, the subject site and a few other properties were erroneously included in the Amendment Area of the Salida Community Plan. This inclusion was a draftsperson's error, as the subject site was actually part of the Existing Plan Area. As part of the Existing Salida Community Plan, the proposed project is not subject to the EIR requirement for the entire Salida Community Plan Amendment area. If approved, this community plan boundary line will be amended to correctly show the subject property as part of the Existing Plan Area of the Salida Community Plan. The same situation is applicable to the parcel to the south. Other than the subject property and the property to the north, all other property in the surrounding area would be subject to completing an EIR for the entire Salida Community Plan Amendment area prior to development. The closest actively farmed parcel is approximately 450 feet east of the project site and the nearest parcel under Williamson Act Contract is over 9,000 feet to the west, divided by California Highway 99. Accordingly, there is no indication that this project will result in the removal of adjacent contracted land from agricultural use.

A referral response received from the Agricultural Commissioner's Office requested that a 150-foot setback, in line with the Agricultural Buffer requirement of the General Plan, be maintained between the proposed use and the adjacent parcels under agricultural production. The County's Buffer and Setback Guidelines apply to all new or expanding uses approved by discretionary permit in the A-2 zoning district or on a parcel adjoining the A-2 zoning district; of which there are no such parcels surrounding the site. However, the proposed development is located 420 feet from the nearest actively farmed parcel.

A referral response from the Modesto Irrigation District (MID) indicated that there is a 36-inch cast-in-place concrete pipeline that exists along the eastern property line of the project site called the McCarthy Pipeline. MID requested that the location of the McCarthy pipeline be field verified and shown on the building site plans, and that a 30-foot-wide easement be recorded, centered on the McCarthy Pipeline. Further, MID is requiring that if the area of the McCarthy pipeline were ever to be developed, that the pipeline must be replaced with rubber gasketed reinforced concrete pipeline, with appropriate wall thickness for the pressure and traffic loads and manholes installed per MID standards located no more than 500 feet apart. In the case that the McCarthy Pipeline needs to be replaced, draft improvement plans must be submitted and approved by MID and all work must be completed during the non-irrigation seasons, which typically runs from March 1st to November 1st. Additionally, if the site does not plan to continue to use irrigation water from the District, a Sign-Off of Irrigation Facilities form for the parcel is required. These comments will be applied as development standards.

Mitigation: None.

References: Application materials; Referral response from Modesto Irrigation District (MID), dated September 25, 2019 and February 18, 2020; Referral response received from the Agricultural Commissioner's Office, dated January 29, 2020; United States Department of Agriculture NRCS Web Soil Survey; California State Department of Conservation Farmland Mapping and Monitoring Program - Stanislaus County Farmland 2018; Stanislaus County General Plan and Support Documentation[1].

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?		X		
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those odors adversely affecting a substantial number of people)?			X	

Discussion: The proposed project is located within the San Joaquin Valley Air Basin (SJVAB) and, therefore, falls under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In conjunction with the Stanislaus Council of Governments (StanCOG), the SJVAPCD is responsible for formulating and implementing air pollution control strategies.

The SJVAPCD’s most recent air quality plans are the 2007 PM10 (respirable particulate matter) Maintenance Plan, the 2008 PM2.5 (fine particulate matter) Plan, and the 2007 Ozone Plan. These plans establish a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the SJVAB, which has been classified as “extreme non-attainment” for ozone, “attainment” for respirable particulate matter (PM-10), and “non-attainment” for PM 2.5, as defined by the Federal Clean Air Act. Mobile emission sources are generally regulated by the Air Resources Board of the California EPA which sets emissions for vehicles and acts on issues regarding cleaner burning fuels and alternative fuel technologies. As such, the District has addressed most criteria air pollutants through basin wide programs and policies to prevent cumulative deterioration of air quality within the Basin.

A referral response was received from the San Joaquin Valley Air Pollution Control District indicating that emissions resulting from construction and/or operation of the Project may exceed the District’s thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (Sox), and particulate matter (PM) and recommended a more detailed review of the project be conducted. Further, the Air District recommended that the more detailed review of potential air impacts consider criteria pollutants for both construction and operational emissions, with a recommendation of utilizing the California Emissions Estimator Model (CalEEMod) for the basis of project analysis, health risk screening/assessment, PM impacts from under-fired char broilers, and an ambient air quality analysis (AAQA). The response indicated that if mitigation measures were to be applied to reduce the project to a less-than significant level, that the effectiveness of each mitigation measure should be discussed within the environmental review for the project as well as how the project would impact the District’s attainment status. The Air District response also indicated that the project is subject to District Rule 9510, which requires the development of an Air Impact Assessment (AIA), District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Regulation VIII (Fugitive PM10 Prohibitions), District Rule 9410 (Employer Based Trip Reduction), and other applicable District permits and rules, which must be met as part of the District’s Authority to Construct (ATC) permitting process. A referral response was also received from the Stanislaus County Environmental Review Committee (ERC) indicating that potential air impacts, including odor, should be further evaluated.

In response to the Air District and ERC comment letters an Air Quality and Health Risk Assessment (AQA/HRA) was prepared by Illingworth and Rodkin, Inc., dated February 5, 2021. The AQA/HRA analyzed potential project impacts to air quality associated with emissions generated during construction, emissions generated from the operation of the proposed gasoline dispensing facility (GDF), as well as indirect impacts that may also occur from vehicle emissions associated with travel to and from the site during construction and operation. This AQA/HRA considered existing air quality conditions, construction period air quality impacts, operational air quality impacts (at both a local and regional scale) and identified any necessary mitigation measures to reduce or eliminate air quality impacts identified as significant. The project’s potential impacts on air quality during construction and operation were assessed per the San Joaquin Valley Air Pollution Control District’s *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The AQA/HRA considered the nearest receptors to be the Vizcaya Subdivision, made up of residences, located across Arborwood Drive from the site, to the southeast, and the closest sensitive receptors to be the Modesto Christian School and Little Hearts Preschool and Childcare, both located approximately one mile to the east of the project site.

The Project construction activities are anticipated to take place over an approximate 13-month period beginning in Fall 2021 and concluding in Fall 2022. Site preparation and disturbance (e.g., vehicle travel on exposed areas) would likely result in the greatest emissions of dust and PM10/PM2.5. Windy conditions during construction could cause substantial emissions of PM10/PM2.5. Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to the proposed project operation. During construction, the proposed project would affect local particulate concentrations primarily due to fugitive dust sources and contribute to ozone and PM10/PM2.5 levels due to exhaust emissions. Over the long-term, the proposed project would result in an increase in emissions of particulate matter from commercial cooking operations and an increase in ozone precursors such as total organic gases (TOG), reactive organic gases (ROG), and NOx, primarily due to increased motor vehicle trips (employee trips, site deliveries, and onsite maintenance activities). Construction activities would temporarily affect local air quality, causing a temporary increase in particulate dust and other pollutants. Dust emission during periods of construction would increase particulate concentrations at neighboring properties. However, the AQA/HRA found construction activity emissions to be less-than significant with implementation of Regulation VIII, compliance with which is required during the construction phase of the proposed project. Regulation VIII essentially prohibits the emissions of visible dust (limited to 20-percent opacity) and requires that disturbed areas or soils be stabilized. Prior to construction of each project phase, the applicant would be required to submit a dust control plan that meets the regulation requirements. These plans are reviewed by SJVAPCD and construction cannot begin until District approval is obtained. The provisions of Regulation VIII and its constituent rules pertaining to construction activities generally require effective dust suppression, stabilization of all disturbed areas of a construction site, control of fugitive dust and the tracking of mud or dirt off-site, ceasing outdoor construction and grading activities that disturb soils during periods with high winds, erosion control measures, and record keeping. Anyone who prepares or implements a Dust Control Plan must attend a training course conducted by the District. Construction sites are subject to SJVAPCD inspections under this regulation. Compliance with Regulation VIII, including the effective implementation of a Dust Control Plan that has been reviewed and approved by the SJVAPCD, would reduce dust and PM10 emissions to a less-than significant level.

Both criteria air pollutant exhaust and fugitive dust (i.e., PM10 and PM2.5) impacts from construction equipment were computed by CalEEMod, which considered the use of construction equipment, worker vehicle travel, onsite vehicle and truck use, and off-site truck travel by vendors or equipment/material deliveries. Construction traffic information from CalEEMod was combined with the California Air Resources Board's 2017 Emission Factor inventory (EMFAC2017) motor vehicle emissions factors to estimate construction site-trip emissions. The analysis found that unmitigated construction emissions would not exceed the applicable SJVAPCD thresholds for total PM10 emissions.

The CalEEMod model was also used to estimate annual emissions from operation of the Project, including emissions from transportation sources and from area sources, such as natural gas usage, consumer products, landscape equipment, and ROG emissions from use of consumer products, architectural coatings, parking lot markings, GDF operations, and charbroiling from the fast-food restaurant. Inputs to the CalEEMod model for air pollutant modeling are based on EMFAC2017 default conditions for Stanislaus County and adjusted trip generation rates to match the Institute of Transportation Engineers (ITE) rates used in the project's traffic impact analysis. The first full year that the project could be operational was assumed to be 2023 and was used as the analysis year. Emissions were modeled and evaluated two ways: (1) emissions from land use (e.g., project traffic generation), and (2) emissions from sources subject to SJVAPCD permitting for stationary sources.

Both chain-driven (CD) and underfired (UF) char broilers are regulated by the SJVAPCD through Rule 4692 (Commercial Char broilers). The project will include a 3,250-square-foot fast-food restaurant with a drive-thru window that will utilize either a char broiler or flat griddle to cook meat. Emissions from the restaurant were estimated using the district default activity values provided in Section 2.3.4.2 of SJVAPCD's *Guidance for Air Dispersion Modeling*. Facility Type 2 (Flat Griddle) was selected given a specific restaurant has not been identified for the project location and Facility Type 2 provides the most flexibility. It assumes the restaurant will cook hamburger, poultry without skin, and pork. Criteria pollutant emissions factors in pounds of pollutant per ton of meat cooked and were obtained from the SJVAPCD's *2006 Area Source Emissions Inventory Methodology: 690 – Commercial Cooking Operations*, which used the emissions factors from the U.S. EPA's 2002 National Emissions Inventory (NEI). Emissions factors were provided for PM10, PM2.5, and VOCs for cooking of hamburger, poultry, and pork. Emissions from meat cooking at the proposed fast-food restaurant would not exceed the SJVAPCD's applicable significance thresholds for permitted stationary sources.

Gasoline dispensing facilities (GDFs) are regulated by the SJVAPCD. The project includes one 12-position GDF and will require a permit from the Air District. Emissions attributed to operation of the GDF were estimated based on annual throughput (i.e., fuel received and dispensed) anticipated for the facility. The project estimates a daily throughput of approximately 4,340 gallons, which equates to 1.58 million gallons per-year. GDFs are a source of evaporative ROG emissions and with sources that include storage-tank loading, storage-tank venting, refueling of vehicles, and fuel spillage. ROG emissions from the proposed GDF would not exceed the SJVAPCD's applicable significance thresholds for permitted stationary sources.

Operational emissions from stationary equipment, such as a small standby power generator operated by diesel or natural gas, were also evaluated and were determined to be less-than significant as they will be required to comply with all applicable SJVAPCD regulations.

Project traffic would slightly increase concentrations of CO along roadways providing access to the project. Carbon monoxide is a localized air pollutant, where highest concentrations are found very near sources. The major source of CO is vehicle traffic. Elevated concentrations, therefore, are usually found near areas of high traffic volume and congestion. Emissions and ambient concentrations of CO have decreased greatly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and reformulated motor vehicle fuels. No exceedances of the State or federal CO standards have been recorded at any of San Joaquin Valley's monitoring stations in the past 15 years. The San Joaquin Valley Air Basin has attained the State and National CO standards. Localized CO concentrations are addressed through the SJVAPCD screening method that can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. A project can be said to have no potential to create a CO violation or create a localized hotspot if either of the following conditions are not met: level of service (LOS) on one or more streets or intersections would be reduced to LOS E or F; or the project would substantially worsen an already LOS F street or intersection within the project vicinity. As the proposed project will not do either of these, the potential impact on CO would be considered less-than significant.

To evaluate the exposure of sensitive receptors to emissions of Toxic Air Contaminants (TACs) from the project, a health risk assessment of both project construction activities and emissions from project operation was conducted. The health risk assessment predicts lifetime cancer risk and non-cancer risks. The health risk assessment involves prediction of emissions from the various sources of TACs, dispersion modeling using historical meteorological data and calculation of health risks using SJVAPCD recommended risk assessment methods for infant, child, and adult exposures for residential receptors, and for off-site worker exposure. Construction activity is anticipated to include site preparation and grading, trenching/excavation, building construction, paving and some application of architectural coatings. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a TAC. Results of this assessment indicate that, with project construction, the maximum increased infant cancer risk at the maximally exposed residential individual location would be 40.7 in one million and the maximum residential adult incremental cancer risk would be 1.0 in one million. The predicted increased cancer risk for a residential exposure (assuming infants are present) would be greater than the SJVAPCD significance threshold of 20 in one million. However, with Mitigation Measure 2 applied to the project the mitigated increased project residential cancer risk would not exceed the cancer risk significance threshold. Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. The chronic inhalation reference exposure level (REL) for DPM is 5 µg/m3. The Hazard Index (HI), which is the ratio of the annual DPM concentration to the REL, is less than 0.1 at all receptor locations. This HI is much lower than the SJVAPCD significance criterion of a HI greater than 1. Local traffic generated by the project along with emissions from the gasoline dispensing facility and the fast-food restaurant could lead to operational health risk impacts. Emissions from diesel fuel are expected to be minimal, as the GDF will not serve heavy-duty diesel vehicles. Specific sources of emissions from the GDF include customer traffic traveling to and from the project site, fuel delivery-truck traffic traveling to and from the site, fuel delivery-truck idling while at the site, and evaporative emissions of fuel from transfer and storage of gasoline (i.e., above-ground tank filling, tank breathing and vehicle fueling and spillage). Emission sources from the fast-food restaurant include vehicle emissions from operation of the drive-thru window and emissions from meat cooking. Impacts from each of these sources are addressed. These sources are assumed to be operational well into the future (i.e., 70 years). The year 2022 was used as the year of analysis for generating vehicle emission rates. Vehicle emission rates are considered to be less-than significant as they are anticipated to decrease in the future due to improvements in exhaust systems and turnover of the fleet from older, more polluting vehicles to newer cleaner vehicles.

On-site emission sources include customer vehicles, fuel delivery trucks, fuel delivery-truck idling, gas pump fueling and spillage, the vent stack for fuel storage tank emissions, and operation of the fast-food restaurant (meat cooking and drive-thru queue). Off-site emission sources include customer and fuel delivery vehicle travel routes. The maximum excess cancer risk associated with mitigated project construction and operation would be 9.5 chances per-million. The predicted Hazard Index is well below the significance threshold.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and not likely to be noticeable for extended periods of time much beyond the project's site boundaries. The potential for diesel odor impacts is, therefore, less-than significant. During project operations, the project is expected to generate odors that may or may not be noticeable. The odors produced would be related to the cooking of food, in particular meat, from its fast-food restaurant component. Operations from these types of restaurants have not been identified by the SJVAPCD as significant odor sources and do not often generate complaints. Additionally, the nearest receptor to the restaurant is approximately 598 feet to the southeast. Therefore, the odor impacts associated with restaurant operations would be less-than significant. However, the restaurant would be subject to the air district's rules governing odors and odor complaints.

Mitigation requiring construction equipment meet U.S. EPA Tier 3 engine standards has been applied to the project to ensure construction related air impacts are less-than significant. From a CEQA perspective, mitigation is not required for this impact, but it will be required in accordance with SJVAPCD's Indirect Source Review Rule (Rule 9510) and this measure would reduce emissions from construction. Implementation of Mitigation Measure AQ-1 would reduce NOX emissions by 30 percent and PM10 emissions by over 70 percent. It was previously noted that under Rule 9510 (ISR), the project would be responsible for reducing construction PM10 emissions by 45 percent, and NOX emissions by 20 percent. These reductions are required regardless of whether the project emissions exceed the CEQA significance thresholds. This CEQA analysis does not account for ISR reductions, as they are treated separately by the SJVAPCD. However, it appears that the reductions in emissions that would result from implementation of this mitigation measure would meet the ISR emissions reduction requirements. The final emissions calculations for the project will be performed in an Air Impact Assessment (AIA), as required under ISR to determine the specific ISR reductions (i.e., in tons) that will be required for the project. In addition, application of the required PM10 fugitive dust rules (i.e., District Regulation VIII) would reduce fugitive dust emissions from construction substantially. CalEEMod modeling indicates that implementation of Mitigation Measure 2 would reduce exhaust PM10 emissions, considered to be equivalent to DPM emissions, by 86 percent. The reductions in construction period emissions would reduce the construction period cancer risk for residents to 6.4 chances per-million. This level is below the significance threshold of 20 chances per-million. When construction risks are considered with operational emissions, the overall 70-year project cancer risk would be 9.5 chances per-million. Additionally, the project is still subject to meeting the requirements of District Rule 9510, which requires that the project reduce uncontrolled construction exhaust and annual NOx and PM10 emissions in accordance with District standards.

The project land uses would not alter population or vehicle-related emissions projections contained in regional clean air planning efforts in any measurable way and would not conflict with achievement of the control plans aimed at reducing these projected emissions. Therefore, the project would not conflict with or obstruct implementation of efforts outlined in the region’s air pollution control plans to attain or maintain ambient air quality standards. This would be a less-than significant impact. Since the project would be required to implement the emissions reductions under the Indirect Source Rule (ISR), it would fulfill its share of achieving the District’s emission reduction commitments in the PM10 and Ozone attainment plans. Therefore, the project would result in a less-than significant impact since it would not conflict with or obstruct implementation of the ISR Rule.

Air impacts associated with the project are considered to be less-than significant with mitigation included.

Mitigation:

2. All off-road diesel construction equipment greater than 25 horsepower and operating at the site for more than 20 hours shall, at a minimum, meet U.S. EPA Tier 3 engine standards with Level 3 particulate filtration. Use of equipment with U.S. EPA Tier 4 engine standards would meet this requirement. Optionally, the applicant could develop and implement a plan that would achieve a 44-percent reduction in on and near-site DPM emissions.

References: Application materials; Referral response received from the San Joaquin Air Pollution Control District, dated September 25, 2019 and February 25, 2020; Referral response received from the Stanislaus County Environmental Review Committee, dated September 30, 2019 and February 11, 2020; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Air Quality and Health Risk Assessment, conducted by Illingworth and Rodkin, Inc., dated February 5, 2021; Traffic Impact Analysis, conducted by Pinnacle Traffic Engineering, dated March 9, 2020; Supplemental Traffic Generation Analysis, conducted by Pinnacle Traffic Engineering, dated January 22, 2021; and the Stanislaus County General Plan and Support Documentation[1].

IV. BIOLOGICAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			**X**	
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?			**X**	

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	

Discussion: The project is located within the Salida Quad of the California Natural Diversity Database (CNDDB). There are six species which are state or federally listed, threatened, or identified as species of special concern within the Salida California Natural Diversity Database Quad. These species include the California tiger salamander, Swainson's hawk, tricolored blackbird, steelhead, Crotch bumble bee, and valley elderberry longhorn beetle. There is a low likelihood that these species are present on the project site as the land is vacant/disturbed and near California State Highway 99.

The project will not conflict with a Habitat Conservation Plan, a Natural Community Conservation Plan, or other locally approved conservation plans. Impacts to endangered species or habitats, locally designated species, or wildlife dispersal or mitigation corridors are considered to be less-than significant.

An early consultation was referred to the California Department of Fish and Wildlife (formerly the Department of Fish and Game) and no response was received.

Mitigation: None.

References: Application materials; California Department of Fish and Wildlife's Natural Diversity Database Quad Species List; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: As this project is a General Plan Amendment it was referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18. No tribes responded with a request for consultation or with any project comments. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. A records search conducted by the Central California Information Center (CCIC) found a previous archaeological field survey and an architectural survey for cultural resources that included most of the subject property, except the SE corner, or approximately the eastern half of Parcel 3, as part of a Caltrans District 10 project. The study indicated that there are no historical, cultural, or archeological resources recorded on-site and that the site has a low sensitivity for the discovery of such resources. However, the CCIC Report also stated that the project area is less than ½-mile from the southern terraces of the Stanislaus River, and there is at least one recorded Native American occupation site known to be within one mile of this property, in association with the river and advised that, in accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. This requirement has been incorporated into the project as a mitigation measure. Cultural Impacts are considered to be less-than significant with mitigation included.

Mitigation:

3. Should any archeological or human remains be discovered during development, work shall be immediately halted within 150 feet of the find until it can be evaluated by a qualified archaeologist. If the find is determined to be historically or culturally significant, appropriate measures to protect and preserve the resource shall be formulated and implemented. The Central California Information Center shall be notified if the find is deemed historically or culturally significant.

References: Application materials; Historic Property Survey Report for the Hammett Road/State Route 99 Interchange Reconstruction Project, Blind, H., 2010; Tribal consultation letters for proposed project, dated September 10, 2019; Central California Information Center Report for the project site, dated June 11, 2019; Stanislaus County General Plan and Support Documentation[1].

VI. ENERGY. -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Discussion: The CEQA Guidelines Appendix F states that energy consuming equipment and processes, which will be used during construction or operation such as: energy requirements of the project by fuel type and end use, energy conservation equipment and design features, energy supplies that would serve the project, total estimated daily vehicle trips to be generated by the project, and the additional energy consumed per-trip by mode, shall be taken into consideration when evaluating energy impacts. Additionally, the project's compliance with applicable state or local energy legislation, policies, and standards must be considered.

A referral response was received from the San Joaquin Valley Air Pollution Control District (SJVAPCD) and from the Stanislaus County Environmental Review Committee (ERC) requesting that air impacts from the project be further evaluated. In response to the SJVAPCD and ERC comment letters an Air Quality and Health Risk Assessment (AQA/HRA) was prepared by Illingworth and Rodkin, Inc., dated February 5, 2021, which included an analysis of the proposed project energy usage. CalEEMod was used to quantify greenhouse gas (GHG) emissions from project operations-related activities assuming full build-out of the project in 2023. The project land use types and size and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by the Air District. GHG emissions modeling includes those indirect emissions from electricity consumption. The business as usual (BAU) emissions estimate included the CalEEMod default emission factor of 641.3 pounds of CO2 per-megawatt of electricity produced. However, the electricity-produced emission rate was modified for the analysis of 2023 operations emissions, to 210 pounds CO2 per-megawatt of electricity delivered. The CalEEMod default is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, in 2019 PG&E published emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO2 per-megawatt of electricity delivered.

The 2016 California Green Building Standards Code (CALGreen Code) went into effect on January 1, 2017, and includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The Code includes provisions to reduce water use, wastewater generation, and solid waste generation, as well as requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. The code requires mandatory inspections of building energy systems for non-residential buildings over

10,000 square-feet to ensure that they are operating at their design efficiencies. It is the intent of the CALGreen Code that buildings constructed pursuant to the Code achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards contained in Title 24. The Code also sets limits on VOCs (volatile organic compounds) and formaldehyde content of various building materials, architectural coatings, and adhesives. With the requirements of meeting the Title 24, Green Building Code energy impacts from the project are considered to be less-than significant. A development standard will be added to this project to address compliance with Title 24, Green Building Code, which includes energy efficiency requirements.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. A Project Memo, received from the Department of Public Works, indicated that the project's proposal preceded the implementation of SB743 on July 1, 2020. Further, the memo stated that Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The proposed project fits this description of locally-serving retail and therefore is presumed to create a less-than significant transportation impact related to VMT.

Impacts related to Energy are considered to be less-than significant.

Mitigation: None.

References: Application materials; Project Memo, received from the Department of Public Works, dated February 25, 2021 and September 11, 2020; Referral response received from the San Joaquin Air Pollution Control District, dated September 25, 2019 and February 25, 2020; 2016 California Green Building Standards Code Title 24, Part 11(Cal Green); 2016 California Energy Code Title 24, Part 6; State of California - Office of Planning and Research (OPR) guidelines regarding VMT significance under CEQA; Air Quality and Health Risk Assessment, conducted by Illingworth and Rodkin, Inc., dated February 5, 2021; Traffic Impact Analysis, conducted by Pinnacle Traffic Engineering, dated March 9, 2020; Supplemental Traffic Generation Analysis, conducted by Pinnacle Traffic Engineering, dated January 22, 2021; Stanislaus County General Plan and Support Documentation[1].

VII. GEOLOGY AND SOILS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			**X**	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			**X**	
ii) Strong seismic ground shaking?			**X**	
iii) Seismic-related ground failure, including liquefaction?			**X**	
iv) Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			**X**	

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Discussion: The project site is not located near an active fault or within a high earthquake zone. Landslides are not likely due to the flat terrain of the area. The USDA Natural Resources Conservation Service's Eastern Stanislaus County Soil Survey indicates that the property is made up of Dinuba fine sandy loam (DmA), Hanford sandy loam (HdA), and Oakdale sandy loam (OaA) soils. As contained in Chapter 5 of the General Plan Support Documentation, the areas of the County subject to significant geologic hazard are located in the Diablo Range, west of Interstate 5; however, as per the California Building Code, all of Stanislaus County is located within a geologic hazard zone (Seismic Design Category D, E, or F) and a soils test may be required at building permit application. Results from the soils test will determine if unstable or expansive soils are present. If such soils are present, special engineering of the structure will be required to compensate for the soil deficiency. Any structures resulting from this project will be designed and built according to building standards appropriate to withstand shaking for the area in which they are constructed. An early consultation referral response received from the Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project will be required, subject to Public Works review and Standards and Specifications. Likewise, any addition or expansion of a septic tank or alternative waste water disposal system would require the approval of the Department of Environmental Resources (DER) through the building permit process, which also takes soil type into consideration within the specific design requirements. Development standards regarding these standards will be applied to the project and will be triggered when a building permit is requested.

Impacts to Geology and Soils are considered to be less-than significant.

Mitigation: None.

References: Application materials; Referral response received from the Department of Environmental Resources, dated September 24, 2019 and February 12, 2020; Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Title 24 California Code of Regulations; Stanislaus County General Plan and Support Documentation[1].

VIII. GREENHOUSE GAS EMISSIONS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Discussion: The principal Greenhouse Gasses (GHGs) are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H2O). CO2 is the reference gas for climate change because it is the predominant greenhouse gas emitted. To account for the varying warming potential of different GHGs, GHG emissions are often quantified and reported as CO2 equivalents (CO2e). In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] No. 32), which requires the California Air Resources Board (ARB) design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020. Two additional bills, SB 350 and SB32, were passed in 2015 further amending the states Renewables Portfolio Standard (RPS) for electrical generation and amending the reduction targets to 40% of 1990 levels by 2030.

Under its mandate to provide local agencies with assistance in complying with CEQA in climate change matters, the SJVAPCD developed its *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects* *under CEQA.* As a general principal to be applied in determining whether a proposed project would be deemed to have a less-than significant impact on global climate change, a project must be in compliance with an approved GHG emission reduction plan that is supported by a CEQA-compliant environmental document or be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions, consistent with GHG emission reduction targets established in ARB's Scoping Plan for AB 32 implementation. The SJVAPCD guidance is intended to streamline the process of determining if project specific GHG emissions would have a significant effect. The proposed approach relies on the use of performance-based standards and their associated pre-quantified GHG emission reduction effectiveness (Best Performance Standards, or BPS). Establishing BPS is intended to help project proponents, lead agencies, and the public by proactively identifying effective, feasible mitigation measures. Emission reductions achieved through implementation of BPS would be pre-quantified, thus reducing the need for project specific quantification of GHG emissions. For land use development projects, BPS would include emissions reduction credits for such project features as bicycle racks, pedestrian access to public transit, and so forth.

A referral response was received from the San Joaquin Valley Air Pollution Control District (SJVAPCD) and from the Stanislaus County Environmental Review Committee (ERC) requested that air impacts from the project be further evaluated. In response to the SJVAPCD and ERC comment letters an Air Quality and Health Risk Assessment (AQA/HRA) was prepared by Illingworth and Rodkin, Inc., dated February 5, 2021, which included an analysis of the greenhouse gas impacts from the proposed project. CalEEMod was used to quantify GHG emissions from project operations-related activities assuming full build-out of the project in 2023. The project land use types and size and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by the Air District. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. Annual GHG emissions associated with construction were computed at 605 metric tons (MT) of CO2e. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the County nor SJVAPCD have an adopted threshold of significance for construction related GHG emissions. However, other air districts, account for construction GHG emissions by amortizing them over a 30-year period (i.e., adding 1/30th of construction emissions to annual operational emissions). This amortization method was applied in the calculation of project GHG emissions. The CalEEMod model predicted annual emissions associated with operation of the fully developed project. In 2023, annual emissions are calculated to be 1,822 MT of CO2e, 2023 project emissions are approximately four percent less (92 MT CO2e more) than the 29 percent reduction target before the implementation of BPS. Additionally, mobile source emissions will be reducing over time as older, less efficient vehicles are replaced by newer, more efficient ones.

The 2016 California Green Building Standards Code (CALGreen Code) went into effect on January 1, 2017, and includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The Code includes provisions to reduce water use, wastewater generation, and solid waste generation, as well as requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. The code also requires mandatory inspections of building energy systems for non-residential buildings over 10,000 square-feet to ensure that they are operating at their design efficiencies. It is the intent of the CALGreen Code that buildings constructed pursuant to the Code achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards contained in Title 24. The Code also sets limits on VOCs (volatile organic compounds) and formaldehyde content of various building materials, architectural coatings, and adhesives. With the requirements of meeting the Title 24, Green Building Code energy impacts from the project are considered to be less-than significant. A development standard will be added to this project to address compliance with Title 24, Green Building Code, which includes energy efficiency requirements.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. A Project Memo, received from the Department of Public Works, indicated that the project's proposal preceded the implementation of SB743 on July 1, 2020. Further, the memo stated that Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The proposed project fits this description of locally-serving retail and therefore is presumed to create a less-than significant transportation impact related to VMT.

Impacts associated with Greenhouse Gas Emissions are expected to have a less-than significant impact.

Mitigation: None.

References: Application materials; Project Memo, received from the Department of Public Works, dated February 25, 2021 and September 11, 2020; Referral response received from the San Joaquin Air Pollution Control District, dated September 25, 2019 and February 25, 2020; 2016 California Green Building Standards Code Title 24, Part 11(Cal Green); 2016 California Energy Code Title 24, Part 6; State of California - Office of Planning and Research (OPR) guidelines regarding VMT significance under CEQA; Air Quality and Health Risk Assessment, conducted by Illingworth and Rodkin, Inc., dated February 5, 2021; Traffic Impact Analysis, conducted by Pinnacle Traffic Engineering, dated March 9, 2020; Supplemental Traffic Generation Analysis, conducted by Pinnacle Traffic Engineering, dated January 22, 2021; Stanislaus County General Plan and Support Documentation[1].

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

Discussion: The project was referred to the DER Hazardous Materials (Haz Mat) Division who responded that the project applicant is required to obtain all applicable permits through Haz Mat and must submit hazardous materials Business information into the California Electronic Reporting System (CERS) by handlers of materials for the storage of 55 gallons, 500 pounds of a hazardous material, or of 200 cubic feet of compressed gas or more. Additionally, the Haz Mat Division response indicated that the handling of acutely hazardous materials may require the preparation of a Risk Management Prevention Program which must be implemented prior to operation of the facility and that any discovery of underground storage tanks, former underground storage tank locations, buried chemicals, buried refuse, or contaminated soil shall be brought to the immediate attention of the Haz Mat Division. As the lead entity for the Underground Storage Tank (UST) and Above Storage Tank (AST) Programs, Haz Mat reviews, approves, and monitors the construction, operation, repair and removals of UST or AST systems in Stanislaus County. The UST and AST programs are in place in order to protect the environment and groundwater from contamination resulting from UST/ASTs. Each UST/AST site is inspected annually as mandated by State law. Permitting and compliance with Haz Mat's UST/AST Programs will be added to the project as a condition of approval. These requirements will be applied as development standards for the project.

A referral response was received from the Department of Environmental Resources stating that the project is subject to submitting food facility plans to the Department for review and approval, which would require conformance with any local or State requirements for grease interceptors or char broilers. The food facility will also need to meet the Air District's standards for chain-driven (CD) and underfired (UF) char broilers and for Gasoline dispensing facilities (GDFs). These requirements will be applied as development standards for the project.

The project does not interfere with the Stanislaus County Local Hazard Mitigation Plan, which identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The site is located in a Local Responsibility Area (LRA) for fire protection and is served by Salida Fire Protection District. The project was referred to the District who responded with comments indicating that the development must annex into the District and that all construction must comply with current adopted fire code, including the payment of fire service impact mitigation fees, on-site water supply and infrastructure for fire protection, and emergency vehicle access. These comments will be applied as development standards for the project. The project site is not listed on the California Department of Toxic Substance Control's EnviroStor database as a hazardous waste facility and is not located within the vicinity of any public use airport.

As a result of the development standards required for this project, impacts associated with Hazards and Hazardous Materials are expected to have a less-than significant impact.

Mitigation: None.

References: Application materials; Referral response received from the San Joaquin Air Pollution Control District, dated September 25, 2019 and February 25, 2020; Referral response received from the Department of Environmental Resources, dated September 24, 2019 and February 12, 2020; California Department of Toxic Substance Control's EnviroStor database; Referral response received from the Department of Environmental Resources, Hazardous Materials Division, dated September 30, 2019; Referral response from Salida fire Protection District, dated September 17, 2019 and February 12, 2020; Stanislaus County General Plan and Support Documentation[1].

X. HYDROLOGY AND WATER QUALITY -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
(i) result in substantial erosion or siltation on – or off-site;			X	
(ii) substantially increase the rate of amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			**X**	

Discussion: Areas subject to flooding have been identified in accordance with the Federal Emergency Management Act (FEMA). The project site is located in FEMA Flood Zone X, which includes areas determined to be outside the 0.2% annual chance floodplains. All flood zone requirements will be addressed by the Building Permits Division during the building permit process. On-site areas subject to flooding have not been identified by the Federal Emergency Management Agency and/or County designated flood areas.

Development of the project sites will include paving for the building pads, driveways, parking lot, curb, gutter and sidewalks. This type of development will alter the existing drainage pattern of the sites. The site is currently in CSA 10, which covers parks, public works storm drain, and street sweepings. However, because this CSA is insufficient to pay for the expenses to provide those special benefit services, all property currently in CSA 10 will be annexed into CSA 4, specifically to sufficiently cover maintenance of these services. The Board of Supervisors approved this Public Works action and has applied to LAFCO to expand the boundary of CSA 4 to cover all of Salida's benefiting parcels. On May 18, 2000, the Planning Commission approved Tentative Subdivision Map No. 99-11 – Salida Gateway Commons (Vizcaya Subdivision No. 1), which created 137 single-family residential lots out of the 28.3 acres located east of the project site, and a temporary off-site storm drainage basin located on the northern part of the project site; which were both part of the original 1997 project. A permanent storm drainage basin was envisioned to handle the storm drainage requirements of the entire 1997 project site, as well as the commercial lands located at the Hammett Road Interchange, as a part of the master storm drainage system for the north-east Salida Community Plan area covered by the Salida Mello-Roos, but one was never developed. The "temporary" basin still exists on the project site and serves the existing Vizcaya Subdivision to the east. There currently are limitations on finding land to re-locate the storm drain basin due to the surrounding area being zoned Salida Community Plan (SCP). With the exception of the project site and the property to the south, which currently contains the temporary storm drainage basin, no development may occur on SCP zoned property until an Environmental Impact Report (EIR) for the entire Salida Community Plan amendment area is completed. The applicant has agreed to locate the drainage basin on the northern-most portion of the project site within the roadway dedication area reserved for the future Hammett Road Interchange improvement project, as the Hammett Road Interchange improvement project will not occur until the Salida Community Plan Amendment area is able to develop. A grading, drainage, and erosion/sediment control plan for the project site shall be submitted for review and approval to the Department of Public Works that includes drainage calculations and enough information to verify that runoff from project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. Development standards will be added to the project to reflect these requirements.

The project proposes to connect to the City of Modesto for public water service and Salida Sanitary for public sewer service (see discussion on Salida Sanitary in the XIX. Utilities and Service Systems Section of this document). A referral response received from the City of Modesto Utilities Department indicated that the City can serve the proposed development, provided the City Council approves the Will-Serve request. Further, the City of Modesto indicated that the water demand shall be memorialized by Salida Fire, per County building and fire code requirements, as no more than 2,000 gallons per-minute (GPM), and requires that the design of the water utilities be reviewed and approved by the City of Modesto Utilities Department to ensure that the project connects with appropriate sized utilities and meter locations to receive the necessary fire flow. A referral response received from the Stanislaus Local Area Formation Commission (LAFCO) indicated that LAFCO approval of an out-of-boundary service extension must be obtained prior to connecting to the City of Modesto's water system.

The project site is located within the San Joaquin Valley – Modesto groundwater sub-basin which is managed by the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA). The Modesto basin isn't considered to be critically over drafted, but since most of the cities within the basin rely solely on groundwater, it is considered a high-priority basin. Due to that designation, the Sustainable Groundwater Management Act (SGMA) requires that the STRGBA GSA adopt and begin implementation of a Groundwater Sustainability Plan (GSP) by January 31, 2022. The City of Modesto is required to maintain consistency with any applicable GSP. Additionally, the City of Modesto and Modesto Irrigation District jointly adopted the Joint 2010 Urban Water Management Plan, which addresses groundwater sustainability.

A referral response received from the Central Valley Regional Water Quality Control District provided a list of the Board's permits and programs that may be applicable to the proposed project. The developer will be required to contact Regional Water to determine which permits/standards must be met prior to construction as a condition of approval.

A referral response from the Modesto Irrigation District (MID) indicated that there is a 36-inch cast-in-place concrete pipeline that exists along the eastern property line of the project site called the McCarthy Pipeline. MID requested that the location of the McCarthy pipeline be field verified and shown on the building site plans and that a 30-foot-wide easement be recorded, centered on the McCarthy Pipeline. Further, MID is requiring that if the area of the McCarthy pipeline were ever to be developed, that the pipeline must be replaced with rubber gasketed reinforced concrete pipeline, with appropriate wall thickness for the pressure and traffic loads and manholes installed per MID standards located no more than 500 feet apart. In the case that the McCarthy Pipeline needs to be replaced, draft improvement plans must be submitted and approved by MID and all work must be completed during the non-irrigation seasons, which typically runs from March 1st to November 1st. Additionally, if the site does not plan to continue to use irrigation water from the District, a Sign-Off of Irrigation Facilities form for the parcel is required.

As a result of the development standards required for this project, impacts associated with drainage, water quality, and runoff are expected to have a less-than significant impact.

Mitigation: None.

References: Application materials; Referral response received from LAFCO, dated February 7, 2020; Referral response from Modesto Irrigation District (MID), dated September 25, 2019 and February 18, 2020; Referral response from the City of Modesto, dated February 17, 2021; Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Referral response received from the Regional Water Quality Control District, dated September 17, 2019; Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency website (About STRGBA - Stanislaus and Tuolumne Rivers Groundwater Basin Association); City of Modesto and Modesto Irrigation District jointly adopted the Joint 2010 Urban Water Management Plan; Stanislaus County General Plan and Support Documentation[1].

XI. LAND USE AND PLANNING -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?			**X**	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			**X**	

Discussion: As stated by the Introduction to the General Plan, General Plan Amendments affect the entire County and any evaluation must give primary concern to the County as a whole; therefore, a fundamental question must be asked in each case: "Will this amendment, if adopted, generally improve the economic, physical and social well-being of the County in general?" Additionally, the County in reviewing General Plan amendments shall consider how the levels of public and private service might be affected; as well as how the proposal would advance the long-term goals of the County. In each case, in order to take affirmative action regarding a General Plan Amendment application, it must be found that the General Plan Amendment will maintain a logical land use pattern without detriment to existing and planned land uses and that the County and other affected government agencies will be able to maintain levels of service consistent with the ability of the government agencies to provide a reasonable level of service. In the case of a proposed amendment to the Land Use diagrams of the Land Use Element, an additional finding that the amendment is consistent with the goals and policies of the General Plan must also be made. Additionally, Goal 2 of the Land Use Element aims to ensure compatibility between land uses.

The site is vacant and not actively farmed. Single-family residences, light industrial uses, and agricultural land surround the site to the east and southeast; vacant land and California State Highway 99 to the west and south; and vacant land to the north. On August 7, 2007, the Stanislaus County Board of Supervisors passed an ordinance to implement the Salida Area Planning "Roadway Improvement, Economic Development and Salida Area Farmland Protection and Planning

Initiative", also known as the Salida Initiative, which amended the Salida Community Plan. The amended Salida Community Plan provides land use planning and guidance for development of approximately 4,600 acres of land in the Salida area. The Community Plan encompasses the existing community of Salida, which was part of the previously approved Salida Community Plan (Existing Plan Area), and an amendment area encompassing approximately 3,383 acres (Amendment Area). Property within the Salida Community Plan Amendment area may be treated under the A-2 (General Agriculture) zoning district regulations if restricted by a Williamson Act Contract. Otherwise, no property within the Salida Community Plan zoning (which includes the amendment area) may develop until a programmatic-level Environmental Impact Report (EIR) evaluating the environmental impacts associated with the build out of the entire Salida Community Plan Amendment area is prepared. With the passage of the Salida Initiative, the subject site and a few other properties were erroneously included in the Amendment Area of the Salida Community Plan. This inclusion was a draftsperson's error, as the subject site was actually part of the Existing Plan Area. As part of the Existing Salida Community Plan, the proposed project is not subject to the EIR requirement for the entire Salida Community Plan Amendment area. If approved, this community plan boundary line will be amended to correctly show the subject property as part of the Existing Plan Area of the Salida Community Plan. The same situation is applicable to the parcel to the south. Other than the subject property and the property to the north, all other property in the surrounding area would be subject to completing an EIR for the entire Salida Community Plan Amendment area prior to development.

The Land Use Element describes the Planned Development designation as a designation intended for land which, because of demonstrably unique characteristics, may be suitable for a variety of uses without detrimental effects on other property. To approve a Rezone, the Planning Commission must find that it is consistent with the General Plan.

Per the County's General Plan Land Use Element policy regarding Municipal Advisory Councils (MAC), the project was referred to the Salida MAC during each project referral. The Salida MAC did provide some environmental comments regarding evaluating the project's potential noise, hazardous materials, and traffic impacts and potential light pollution that may occur as a result of the proposed project. Each of these environmental issues have been evaluated within this environmental document and no significant impacts were identified. In the case of light pollution and noise mitigation measures have been incorporated into the project to reduce potential impacts to a less-than significant level.

The project will not physically divide an established community nor conflict with any habitat conservation plans.

No significant impacts related to Land Use and Planning have been identified.

Mitigation: None.

References: Application materials; Referral response received from the Salida MAC, dated October 10, 2019; Stanislaus County General Plan and Support Documentation[1].

XII. MINERAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			**X**	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			**X**	

Discussion: The location of all commercially viable mineral resources in Stanislaus County has been mapped by the State Division of Mines and Geology in Special Report 173. There are no known significant resources on the site, nor is the project site located in a geological area known to produce resources.

No significant impacts related to Mineral Resources have been identified.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

XIII. NOISE -- Would the project result in:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		**X**		
b) Generation of excessive groundborne vibration or groundborne noise levels?			**X**	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				**X**

Discussion: A referral response was received from the Stanislaus County Environmental Review Committee indicating that potential noise impacts should be further evaluated. Accordingly, a noise study was conducted, by Acoustics Group, Inc., dated February 15, 2021, to evaluate potential noise impacts that may occur from the project.

Stanislaus County's Chapter 10.46 Noise Control Ordinance limits the maximum noise level at the nearest residential property line to 50 dBA during the daytime (7 a.m. to 9:59 p.m.) and 45 dBA during the nighttime (10 p.m. to 6:59 a.m.), respectively. The Stanislaus County General Plan Noise Element (Chapter 4) establishes noise and land use compatibility guidelines for land uses. For residential land uses, the threshold separating conditionally acceptable compatibility with design and insulation and incompatibility noise exposure is 70 dB CNEL.

The noise study considered the neighboring residential properties to the southeast and east as the most sensitive receptors to potential project related noise impacts. A significant impact would be identified if traffic generated by the project or project improvements/operations would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA CNEL or greater where the future noise level is compatible in terms of noise and land use compatibility, or b) the noise level increase is 3 dBA CNEL or greater where the future noise level exceeds the compatibility threshold. AGI conducted a site visit on March 2 through 3, 2020 to observe the project site and to conduct one long term ambient noise measurement. The ambient noise measurement was conducted along the east project site boundaries to document baseline noise levels. The hourly Leq measured ranged from 58.6 to 61.0 dBA. The noise sources contributing to the ambient measurement data was from vehicular traffic.

In terms of on-site noise generated from operations, the noise study found the following noise levels would occur at the identified sensitive receptors: Lmax from the rooftop condenser units would be as high as 34.7, 31.9 and 24.3 dBA; Lmax from the air compressor would be as high as 26.0, 26.9, and 11.5 dBA; noise level generated by future on-site operational traffic movements would result in a noise level of 41.5, 38.0, and 29.5 dBA; cars starting would result in maximum noise levels as high as 33.3, 30.2, and 14.2 dBA; car door slams would result in maximum noise levels as high as 32.8, 29.5, and 14.7 dBA; and the drive-thru menu board would result in a noise level of 29.0, 21.8 and 13.8 dBA. All operational noise levels were found to comply with the daytime and nighttime standards of 50 and 45 dBA, respectively. Additionally, the operational noise was found to be significantly below the measured range in hourly ambient Leq of 54.7 to 62.0 dBA at NM1.

In terms of on-site noise generated from traffic, the noise study found that the project would generate CNEL traffic noise levels at the identified sensitive receptors well below the 70 dB CNEL Guidelines for traffic noise. The Project's CNEL incremental increase in traffic noise will range from 0.2 to 1.9 dBA. The Project's greatest increase above Existing is not expected to generate an incremental increase of 3 dBA or greater. Therefore, the Project traffic would not result in a significant traffic noise impact. The Existing plus Project 24-hour CNEL would be as high as 47.2, 47.7, and 39.4 dB at the identified sensitive receptor locations. Existing plus Project generated traffic noise levels would not exceed the County's CNEL Exterior Noise Guideline of 70 dB CNEL. The Cumulative plus Project 24-hour CNEL would be as high as 47.3, 47.7, and 39.4 dB, at the same sensitive receptor locations. The Noise Study found that on-site noise generated from project traffic would comply with the County's Noise Guideline of 70 dBA CNEL for Residential Land Uses.

Further, the study recommended that the final engineering design should be reviewed by a qualified acoustical consultant to ensure compliance with the noise standards. This has been incorporated into the project as a mitigation measure. The site is not located within an airport land use plan. Noise impacts are considered to be less-than significant with mitigation included.

Mitigation:

4. Prior to issuance of a building permit, the final engineering design should be reviewed by a qualified acoustical consultant and evidence of compliance with the County's noise standards shall be provided.

References: Application materials; Referral response received from the Stanislaus County Environmental Review Committee, dated September 30, 2019 and February 11, 2020; Noise Study, conducted by Acoustics Group, Inc., dated February 15, 2021; Stanislaus County Noise Control Ordinance, General Plan, and Support Documentation[1].

XIV. POPULATION AND HOUSING -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			**X**	

Discussion: The site is not included in the vacant sites inventory for the 2016 Stanislaus County Housing Element, which covers the 5th cycle Regional Housing Needs Allocation (RHNA) for the county, and will therefore not impact the County's ability to meet their RHNA. No population growth will be induced nor will any existing housing be displaced as a result of this project.

Impacts related to Population and Housing are considered to be less-than significant.

Mitigation: None.

References: Application materials; Stanislaus County General Plan and Support Documentation[1].

XV. PUBLIC SERVICES --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Would the project result in the 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:			X	
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

Discussion: The County has adopted Public Facilities Fees, as well as Fire Facility Fees on behalf of the appropriate fire district, to address impacts to public services. The project will be required to pay all applicable Public Facility Fees and Salida Planned Development Fees, based on the trip ends generated per the respective implementation guidelines.

This project was circulated to all applicable: school, fire, police, irrigation, public works departments, and districts during the Early Consultation referral period, and no concerns were identified with regard to public services.

A referral response was received from Salida Fire indicating that all construction must comply with current adopted Fire Code, including the payment of fire service impact mitigation fees, on-site water supply and infrastructure for fire protection, and emergency vehicle access. Additionally, the applicant is required to form or annex into a Community Services District to provide for operational services.

A referral response from the Modesto Irrigation District (MID) indicated that there is a 36-inch cast-in-place concrete pipeline that exists along the eastern property line of the project site called the McCarthy Pipeline. MID requested that the location of the McCarthy pipeline be field verified and shown on the building site plans and that a 30-foot-wide easement be recorded, centered on the McCarthy Pipeline. Further, MID is requiring that if the area of the McCarthy pipeline were ever to be developed, that the pipeline must be replaced with rubber gasketed reinforced concrete pipeline, with appropriate wall thickness for the pressure and traffic loads and manholes installed per MID standards located no more than 500 feet apart. In the case that the McCarthy Pipeline needs to be replaced, draft improvement plans must be submitted and approved by MID and all work must be completed during the non-irrigation seasons, which typically runs from March 1st to November 1st. Additionally, if the site does not plan to continue to use irrigation water from the District, a Sign-Off of Irrigation Facilities form for the parcel is required. These comments will be applied as conditions of approval.

No significant impacts related to Public Services were identified.

Mitigation: None.

References: Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Referral response from Modesto Irrigation District (MID), dated September 25, 2019 and February 18, 2020; Referral response from Salida fire Protection District, dated September 17, 2019 and February 12, 2020; Stanislaus County General Plan and Support Documentation[1].

XVI. RECREATION --	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			**X**	

Discussion: This project does not include any recreational facilities and is not anticipated to increase demands for recreational facilities, as such impacts typically are associated with residential development.

No significant impacts related to Recreation were identified.

Mitigation: None.

References: Application materials; Stanislaus County General Plan and Support Documentation[1].

XVII. TRANSPORTATION-- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			**X**	
d) Result in inadequate emergency access?			**X**	

Discussion: A referral response was received from the Stanislaus County Environmental Review Committee (ERC) and the California Department of Transportation (Caltrans) indicating that potential traffic and transportation impacts should be further evaluated. Accordingly, a Traffic Impact Analysis (TIA) was prepared by Pinnacle Traffic Engineering, dated March 9, 2020. The TIA was referred to the Department of Public Works and Caltrans both of which provided comments on the TIA. The TIA was then amended to address these comments. A Supplemental Traffic Generation Analysis was conducted by Pinnacle Traffic Engineering on January 22, 2021 to incorporate the project changes that had occurred since the Traffic Analysis was first conducted.

The Traffic Impact Analysis (TIA) evaluated the potential project impacts associated with the proposed Project. Project access will be provided via a full access driveway on Arborwood Drive (east of existing Pirrone Road) and a secondary right-turn only driveway on the existing Pirrone Road (between Hammett Road and Arborwood Drive). Eventually, the existing Pirrone Road on the west side of these parcels will be vacated and the New Pirrone Road will be improved and extended along the east side of these parcels to intersect a short extension of Hammett Road (east of SR 99). The project trips were also assigned to the study network assuming the future improvement of the New Pirrone Road alignment.

The TIA estimated that the Project would generate a total of approximately 4,612 daily trips, with 291 trips during the AM peak hour and 325 trips during the PM peak hour. However, a portion of the project trips will be internal “captured” trips (5%) which will not exit and re-enter the site. A significant portion of the trips will be “pass-by” and/or “diverted-link” trips coming from traffic already on the adjacent street system (e.g. 80-85% of gas station trips). The total trip generation estimates were adjusted to reflect the “pass-by” trips (Caltrans limits pass-by trip reduction to 15%). Based on the project location (unincorporated County), it's anticipated that very few of the project trips will be new "single purpose" trips attracted from other local communities (e.g. Ceres, Modesto, Ripon or Manteca). A majority (if not all) of the project trips to and from SR 99 will already be on the freeway. Though pass-by trips will come from SR 99 and Pirrone Road, the SR 99 ramp intersections will experience 100% of the project external demands (the project trips still need to exit and re-enter the freeway). The actual number of pass-by trips is anticipated to be much higher than 15%. Therefore, the number of single purpose primary trips represents a worse-case scenario. The evaluation of potential project impacts focuses on an evaluation of peak hour operations at the SR 99/Hammett Road interchange ramp and Pirrone Road/Arborwood Drive intersections. New traffic count data was collected to document existing conditions during the morning and afternoon commuter periods.

The evaluation of existing conditions indicates average vehicle delays are currently within acceptable limits as defined by the County (LOS C or better), except at the SR 99 Northbound Ramps intersection during the AM peak hour (LOS D). Caltrans endeavors to maintain a target LOS at the transition between LOS C and D. Therefore, average delays in the LOS D range may be considered acceptable during short peak demand periods (e.g. 15-30 minutes within the peak hour). The existing conditions analysis identified significant queuing during the AM peak hour on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps. Observations of actual traffic operations did notice the eastbound queuing issue during the AM peak hour. Peak hour volumes at the SR 99 Northbound Ramps intersection are below the minimum 70% "peak hour" volume traffic signal warrant criteria in the 2014 California Manual on Uniform Traffic Control Devices (2014 CA MUTCD). Peak hour volumes at the SR 99 Southbound Ramps intersection exceed the minimum 70% "peak hour" volume signal warrant criteria, but are below the 100% signal warrant criteria. Therefore, the installation of traffic signal control is not recommended under existing conditions since average vehicle delays are in the LOS B-C range with the existing all-way stop control. The Project TIA analysis includes an evaluation of access on the existing Pirrone Road. The average southbound speed on Pirrone Road near Arborwood Drive was recorded at +/-40 mph (85th percentile speed of 45 mph). The average northbound speed was recorded at +/44 mph (85th percentile speed of 48 mph). Pirrone Road south of Hammett Road has a relatively level vertical alignment. There is a horizontal curve to the west on Pirrone Road south of Hammett Road followed by a short tangent section and a horizontal curve to the east. The area along Pirrone Road north of Arborwood Drive (both sides) is relatively free of fixed objects that obstruct the visibility of vehicles on Pirrone Road (southbound) or vehicles exiting Arborwood Drive (westbound). Southbound stopping sight distance on Pirrone Road is acceptable for the 85th percentile speed (45 mph) near Arborwood Drive. Corner sight distance looking north is acceptable for vehicles exiting Arborwood Drive (westbound left turn).

A review of the existing plus project volumes at the Pirrone Road/Arborwood Drive intersection was conducted to determine the appropriate traffic control and required improvements. The existing plus project peak hour volumes will not exceed the minimum MUTCD signal warrant criteria. However, the AM and PM peak hour volumes will warrant the installation of an exclusive left turn only lane on the southbound approach of Pirrone Road at Arborwood Drive. An evaluation of existing plus project conditions demonstrates average vehicle delays at the Pirrone Road/Arborwood Drive intersection will be within acceptable limits (LOS C or better). However, delays on the Arborwood Drive (stop sign controlled) will be in the LOS D range during the AM peak hour. The provision of a southbound acceleration lane on Pirrone Road for the westbound left turn from Arborwood Drive would only slightly reduce delays to the LOS C range. Therefore, the installation of a southbound acceleration lane on Pirrone Road is not recommended. Similar to the existing conditions analysis, average delays under the existing plus project scenario will remain within acceptable limits at the SR 99 Southbound Ramps intersection. However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour, increasing congestion at the SR 99 Northbound Ramps intersection during the AM peak hour. Vehicle queues (95th percentile) on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps intersection will also exceed the distance between the ramps during the AM peak hour. The existing plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria but only marginally satisfy the minimum 100% criteria. Therefore, the installation of signal control at the ramp intersections is not recommended under the existing plus project conditions (delays will remain in the LOS B-C range with the existing all-way stop control).

The Project TIA presents an evaluation of future cumulative conditions. Cumulative conditions are typically comprised of existing traffic plus traffic generated by other known future developments. It's noted that long range infrastructure improvements in this portion of the County initially included a reconstruction of the SR 99/Hammett Road interchange. However, Caltrans staff has indicated that the SR 99/Hammett Road interchange improvements will not be constructed in the foreseeable future. Therefore, cumulative analysis does not assume that any major improvements will be constructed by Caltrans or the County at the SR 99/Hammett Road interchange. Due to the location of the Lark Landing parcel(s) and development potential, it was deemed reasonable to analyze the cumulative conditions "without" and "with" the possible future development of the Lark Landing parcel(s). The cumulative conditions analysis (without the Lark Landing development) indicates average delays at the Pirrone Road/Arborwood Drive intersection will be within acceptable limits (LOS C or better). With the Lark Landing development, additional traffic of up to 16% more AM peak hour trips and 65% more PM peak hour trips could be generated. Under both scenarios, average delays at the SR 99 Southbound Ramps intersection will remain with acceptable limits. However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour. Under both scenarios, the project will impact traffic flow at the SR 99 Northbound Ramps intersection during the AM peak hour. Vehicle queues (95th percentile) on the eastbound Hammett Road approach at the SR 99 Northbound Ramps intersection will also exceed the distance between the ramps during the AM peak hour. The cumulative plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria (MUTCD). However, the AM peak hour volumes will only marginally satisfy the minimum 100% signal warrant criteria. Therefore, the installation of signal control at the SR 99 Southbound Ramps intersection is not recommended under the both cumulative plus project condition scenarios (average delays will remain in the LOS B-C range with the existing all-way stop control).

A Supplemental Traffic Generation Analysis was completed after the project was amended to reflect the proposed project changes, which consisted of a drive-thru restaurant, less gas pump stations, and a mini-storage facility. The Supplemental analysis indicated that the revised (current) project uses will generate fewer peak hour and daily trips than analyzed in the March 2020 TIA. The number of AM peak hour trips is essentially the same, with a reduction of about 9% during the PM peak hour and on a daily basis. The March 2020 TIA and Supplemental analysis identified the potentially significant impacts based on peak AM LOS and proposed the appropriate mitigation measures, including intersection restriping, and widening to improve vision clearance, and payment of the applicable Regional Traffic Impact Fee (RTIF), to pay a fair-share contribution towards the costs associated with the future regional and local infrastructure improvements, to reduce the impacts to a level of less-than significant. However, these recommended mitigation measures were based on Level of Service (LOS), which is no longer a threshold of significance under CEQA. Accordingly, the recommended mitigation measures included in the March 2020 TIA and Supplemental analysis has been incorporated into the requirements provided by the Department of Public Works and will be applied to the project as development standards.

The development standards required by Public Work's include: the payment of all applicable Public Facility Fees (including RTIF) and Salida Planned Development Fees, based on the trip ends generated per the respective implementation guidelines; establishment of a 10-foot wide public utility easement adjacent to all road right-of-ways; annexation into the Salida Lighting District and annexation approval from the Stanislaus Local Area Formation Commission (LAFCO); a limitation of parking, loading, or the unloading of vehicles within the County right-of-way; installation of any signs and/or marking, if determined to be needed by the Department of Public Works; obtainment of encroachment permits; and installation of road improvements. The required road improvements will consist of road frontage improvements along the entire parcel frontage of the parcel on Arborwood Drive, including, but not be limited to, driveway locations, street lights, curb, gutter, and sidewalk, storm drainage, and matching pavement. Installation of a southbound left turn lane at the existing Pirrone Road and Arborwood Drive intersection and improvement of the intersection of Arborwood Drive and Old Pirrone Road are also required to be improved to County standards, as well as widening of the southwest corner of the intersection of Pirrone Road and Hammett Road to accommodate an inside radius with a STAA Standard. Upon the written request of the Stanislaus County Road Commissioner, the applicant shall restripe the Hammett Road at SR 99 Northbound Ramp intersection with one (1) eastbound through lane and one (1) left turn lane, resulting in one (1) westbound through lane west of the intersection and an exclusive westbound right turn only lane on Hammett Road at the SR 99 Northbound Ramps intersection shall be installed. Additionally, prior to the issuance of any building or grading permit associated with this project, all driveway locations shall be approved by Public Works Department, and dedication along the frontages of Arborwood Drive and Pirrone Road shall be provided. A plan check and inspection agreement, Engineer's Estimate, and financial guarantee are also required to be submitted to the Department of Public Works for the improvements. A grading, drainage, and erosion/sediment control plan for the project site shall be submitted that includes drainage calculations and enough information to verify that runoff from project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. All of these requirements will be applied to the project as development standards.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. A Project Memo, received from the Department of Public Works, indicated that the project's proposal preceded the implementation of SB743 on July 1, 2020. Further, the memo stated that Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The proposed project fits this description of locally-serving retail and therefore is presumed to create a less-than significant transportation impact related to VMT.

Impacts associated with Transportation are expected to have a less-than significant impact.

Mitigation: None.

References: Application materials; Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Referral response received from CalTrans, dated September 30, 2019, June 10, 2020, and July 15, 2020; Referral response received from the Stanislaus County Environmental Review Committee, dated September 30, 2019 and February 11, 2020; Project Memo, received from the Department of Public Works, dated February 25, 2021 and September 11, 2020; Traffic Impact Analysis, conducted by Pinnacle Traffic Engineering, dated March 9, 2020; Supplemental Traffic Generation Analysis, conducted by Pinnacle Traffic Engineering, dated January 22, 2021; Stanislaus County General Plan and Support Documentation[1].

XVIII. TRIBAL CULTURAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California native American tribe, and that is:		X		
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set for the in subdivision (c) of Public Resource 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.		X		

Discussion: As this project is a General Plan Amendment it was referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18. No tribes responded with a request for consultation or with any project comments. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC.

A records search conducted by the Central California Information Center (CCIC) found a previous archaeological field survey and an architectural survey for cultural resources that included most of the subject property, except the SE corner, or approximately the eastern half of Parcel 3, as part of a Caltrans District 10 project. The study indicated that there are no historical, cultural, or archeological resources recorded on-site and that the site has a low sensitivity for the discovery of such resources. However, the CCIC Report also stated that the project area is less than ½-mile from the southern terraces of the Stanislaus River, and there is at least one recorded Native American occupation site known to be within one mile of this property, in association with the river and advised that, in accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. This requirement has been incorporated into the project as a mitigation measure. Accordingly, impacts to Tribal Cultural Resources is considered to be less-than significant with mitigation included.

Mitigation: See Mitigation Measure No. 3, listed under Section V. Cultural Resources.

References: Application materials; Historic Property Survey Report for the Hammett Road/State Route 99 Interchange Reconstruction Project, Blind, H., 2010; Tribal consultation letters for proposed project, dated September 10, 2019; Central California Information Center Report for the project site, dated June 11, 2019; County General Plan and Support Documentation[1].

XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			**X**	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			**X**	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			**X**	

Discussion: Limitations on providing services have not been identified. The project proposes to connect to the City of Modesto for public water service and Salida Sanitary for public sewer service. A referral response received from the City of Modesto Utilities Department indicated that the City can serve the proposed development, provided the City Council approves the Will-Serve request. Further, the City of Modesto indicated that the water demand shall be memorialized by Salida Fire, per County building and fire code requirements, as no more than 2,000 gallons per-minute (GPM), and requires that the design of the water utilities be reviewed and approved by the City of Modesto Utilities Department to ensure that the project connects with appropriate sized utilities and meter locations to receive the necessary fire flow. A referral response received from the Stanislaus Local Area Formation Commission (LAFCO) indicated that LAFCO approval of an out-of-boundary service extension must be obtained prior to connecting to the City of Modesto's water system. Salida Sanitary provided a Will-Serve letter indicating that: an eight-inch sewer main shall be extended west along future Arborwood Drive from the intersection of Arborwood Drive and Vistara Way to the westerly property boundary of the project site and terminated with a maintenance hole; a new maintenance hole shall be installed at the intersection of Arborwood Drive and the future extension of Pirrone Road, and shall include a five-foot eight-inch stub in the northern direction; each individual commercial business shall have a separate sewer lateral connection to the sewer main; public sewer ownership will start and stop within the sewer easement on the future Arborwood Drive; an alternative all-weather access roadway, acceptable to the District, to be installed if any construction work on the 30-foot road easement impedes access to District facilities; a 15-foot sewer easement for exclusive purposes of maintaining and repairing the eight-inch sewer extension from Vistara Way to the terminus of the sewer main on future Arborwood Drive be centered over the existing road easement; all work be done in compliance with Salida Sanitary District requirements, and improvements plans be reviewed and approved by the District prior to commencement of construction; all costs associated with sewer service, design and installation of all sewer mains, maintenance holes and laterals to serve the project are to be paid by the property owner; prior to connecting to the sanitary sewer line that a sewer connection permit for each connection be obtained from the District and all applicable District fees paid; that the owner/developer not construct any permanent facilities on the existing roadway easement or on in any way obstruct the passage of vehicles on existing roadway easement; the installation of FOG interceptor(s) be included on building plans and meet District and Stanislaus County requirements for Fats, Oils, and Grease (FOG); and that an encroachment permit be obtained through Stanislaus County Public Works prior to construction of the improvements. These requirements will be incorporated into the development standards applied to the project. Salida Sanitary provided two referral responses which re-stated the above sewer connection requirements and requested that potential traffic and storm water runoff related impacts associated with the project be evaluated. A discussion on the potential for traffic related impacts can be found in the XVII. Transportation Section of this document and a discussion on the storm water related aspects of the project can be found in the X. Hydrology and Water Quality Section of this document.

The site is currently in CSA 10, which covers parks, public works storm drain, and street sweepings. However, because this CSA is insufficient to pay for the expenses to provide those special benefit services, all property currently in CSA 10 will be annexed into CSA 4, specifically to sufficiently cover maintenance of these services. The Board of Supervisors approved this Public Works action and has applied to LAFCO to expand the boundary of CSA 4 to cover all of Salida's benefiting parcels. On May 18, 2000, the Planning Commission approved Tentative Subdivision Map No. 99-11 – Salida Gateway Commons (Vizcaya Subdivision No. 1), which created 137 single-family residential lots out of the 28.3 acres located east of the project site, and a temporary off-site storm drainage basin located on the northern part of the project site; which were both part of the original 1997 project. A permanent storm drainage basin was envisioned to handle the storm drainage requirements of the entire 1997 project site, as well as the commercial lands located at the Hammett Road Interchange, as a part of the master storm drainage system for the north-east Salida Community Plan area covered by the Salida Mello-Roos, but one was never developed. The "temporary" basin still exists on the project site and serves the existing Vizcaya Subdivision to the east. There currently are limitations on finding land to re-locate the storm drain basin due to the surrounding area being zoned Salida Community Plan (SCP). With the exception of the project site and the property to the south, which currently contains the temporary storm drainage basin, no development may occur on SCP zoned property until an Environmental Impact Report (EIR) for the entire Salida Community Plan amendment area is completed. The applicant has agreed to locate the drainage basin on the northern-most portion of the project site within the roadway dedication area reserved for the future Hammett Road Interchange improvement project, as the Hammett Road Interchange improvement project will not occur until the Salida Community Plan Amendment area is able to develop. A grading, drainage, and erosion/sediment control plan for the project site shall be submitted for review and approval to the Department of Public Works that includes drainage calculations and enough information to verify that runoff from project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. Development standards will be added to the project to reflect these requirements.

A referral response from the Modesto Irrigation District (MID) indicated that there is a 36-inch cast-in-place concrete pipeline that exists along the eastern property line of the project site called the McCarthy Pipeline. MID requested that the location of the McCarthy pipeline be field verified and shown on the building site plans and that a 30-foot-wide easement be recorded, centered on the McCarthy Pipeline. Further, MID is requiring that if the area of the McCarthy pipeline were ever to be developed, that the pipeline must be replaced with rubber gasketed reinforced concrete pipeline, with appropriate wall thickness for the pressure and traffic loads and manholes installed per MID standards located no more than 500 feet apart. In the case that the McCarthy Pipeline needs to be replaced, draft improvement plans must be submitted and approved by MID and all work must be completed during the non-irrigation seasons, which typically runs from March 1st to November 1st. Additionally, if the site does not plan to continue to use irrigation water from the District, a Sign-Off of Irrigation Facilities form for the parcel is required. MID also provided general requirements regarding electrical services. These comments will be applied as conditions of approval.

No significant impacts related to Utilities and Services Systems have been identified.

Mitigation: None.

References: Application materials; Referral response received from the Department of Public Works, dated July 7, 2020 and February 26, 2021; Referral response from Modesto Irrigation District (MID), dated September 25, 2019 and February 18, 2020; Referral response from the City of Modesto, dated February 17, 2021; Referral response received from LAFCO, dated February 7, 2020; Referral response received from Salida Sanitary, dated September 27, 2019 and February 20, 2020; Will-Serve Letter from Salida Sanitary, dated September 17, 2019; Stanislaus County General Plan and Support Documentation[1].

XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation of 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?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

Discussion: The Stanislaus County Local Hazard Mitigation Plan identifies risks posed by disasters and identifies ways to minimize damage from those disasters. With the Wildfire Hazard Mitigation Activities of this plan in place, impacts to an adopted emergency response plan or emergency evacuation plan are anticipated to be less-than significant. The terrain of the site is relatively flat, and the site has access to a County-maintained road. The site is located in a Local Responsibility Area (LRA) for fire protection and is served by Salida Fire Protection District. The project was referred to the District who responded with comments indicating that the development must annex into the District, and that all construction must comply with current adopted fire code, including the payment of fire service impact mitigation fees, on-site water supply and infrastructure for fire protection, and emergency vehicle access. These comments will be applied as conditions of approval. California Building Code establishes minimum standards for the protection of life and property by increasing the ability of a building to resist intrusion of flame and embers. Accordingly, wildfire risk and risks associated with postfire land changes are considered to be less-than significant.

Mitigation: None.

References: Application materials; Referral response from Salida fire Protection District, dated September 17, 2019 and February 12, 2020; California Building Code Title 24, Part 2, Chapter 7; Stanislaus County Local Hazard Mitigation Plan; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: Review of this project has not indicated any potential for cumulative impacts which might significantly impact the environmental quality of the site and/or the surrounding area. On August 7, 2007, the Stanislaus County Board of Supervisors passed an ordinance to implement the Salida Area Planning "Roadway Improvement, Economic Development and Salida Area Farmland Protection and Planning Initiative", also known as the Salida Initiative, which amended the Salida Community Plan. The amended Salida Community Plan provides land use planning and guidance for development of approximately 4,600 acres of land in the Salida area. The Community Plan encompasses the existing community of Salida, which was part of the previously approved Salida Community Plan (Existing Plan Area), and an amendment area encompassing approximately 3,383 acres (Amendment Area). The Salida Initiative requires that prior to new development in the Salida Community Plan (SCP) Amendment Area, that the County prepare, at the landowner's expense, a programmatic-level Environmental Impact Report (EIR) evaluating the environmental impacts associated with the build out of the entire Salida Community Plan Amendment area. With the passage of the Salida Initiative, the subject site and a few other properties were erroneously included in the Amendment Area of the Salida Community Plan. This inclusion was a draftsperson's error, as the subject site was actually part of the Existing Plan Area. As part of the Existing Salida Community Plan, the proposed project is not subject to the EIR requirement for the entire Salida Community Plan Amendment area. If approved, this community plan boundary line will be amended to correctly show the subject property as part of the Existing Plan Area of the Salida Community Plan. The same situation is applicable to the parcel to the south. Other than the subject property and the property to the north, all other property in the surrounding area would be subject to completing an EIR for the entire Salida Community Plan Amendment area prior to development. Accordingly, development of the subject parcel would not set a precedent for further development of the surrounding area.

Mitigation: None.

References: Application materials; Initial Study; Stanislaus County General Plan and Support Documentation[1].

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[1]<u>Stanislaus County General Plan and Support Documentation</u> adopted in August 23, 2016, as amended. ***Housing Element*** adopted on April 5, 2016.

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
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Stanislaus County
Planning and Community Development

Mitigation Monitoring and Reporting Program
Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

February 26, 2021

1. Project title and location:	General Plan Amendment and Rezone Application No. PLN2019-0079 – Cal Sierra Financial, Inc. Pirrone Road, on the east side of the Pirrone Road and Hammett Road intersection, east of Highway 99, in the Community of Salida. APN: 003-014-007
2. Project Applicant name and address:	Baldev Grewal, dba Cal Sierra Financial, Inc. 2807 G St. Merced, CA 95340
3. Person Responsible for Implementing Mitigation Program (Applicant Representative):	Baldev Grewal, dba Cal Sierra Financial, Inc.
4. Contact person at County:	Kristin Doud, Principal Planner (209) 525-6330

MITIGATION MEASURES AND MONITORING PROGRAM:

List all Mitigation Measures by topic as identified in the Mitigated Negative Declaration and complete the form for each measure.

I. AESTHETICS

No.1. Prior to issuance of any building permit, a photometric lighting plan shall be submitted for review and approval by the Planning Department. All exterior lighting shall be designed (aimed down and toward the site) to provide adequate illumination without a glare effect. This shall include, but not be limited to, the use of shielded light fixtures to prevent skyglow (light spilling into the night sky) and the installation of shielded fixtures to prevent light trespass (glare and spill light that shines onto neighboring properties). The height of the lighting fixtures shall not exceed 20 feet above grade.

Who Implements the Measure:	Applicant
When should the measure be implemented:	Prior to issuance of a building permit
When should it be completed:	Prior to issuance of a building permit
Who verifies compliance:	Stanislaus County Planning and Community Development Department
Other Responsible Agencies:	None

III. AIR QUALITY

No.2. All off-road diesel construction equipment greater than 25 horsepower and operating at the site for more than 20 hours shall, at a minimum, meet U.S. EPA Tier 3 engine standards with Level 3 particulate filtration. Use of equipment with U.S. EPA Tier 4 engine standards would meet this requirement. Optionally, the applicant could develop and implement a plan that would achieve a 44-percent reduction in on and near-site DPM emissions.

Who Implements the Measure:	Applicant
When should the measure be implemented:	Prior to construction
When should it be completed:	End of construction
Who verifies compliance:	San Joaquin Valley Air Pollution Control District
Other Responsible Agencies:	Stanislaus County Planning and Community Development Department

V. CULTURAL RESOURCES AND XVIII. TRIBAL CULTURAL RESOURCES

No.3. Should any archeological or human remains be discovered during development, work shall be immediately halted within 150 feet of the find until it can be evaluated by a qualified archaeologist. If the find is determined to be historically or culturally significant, appropriate measures to protect and preserve the resource shall be formulated and implemented. The Central California Information Center shall be notified if the find is deemed historically or culturally significant.

Who Implements the Measure:	Applicant
When should the measure be implemented:	During construction
When should it be completed:	End of construction
Who verifies compliance:	Stanislaus County Planning and Community Development Department
Other Responsible Agencies:	Qualified Archeologist, if applicable

XIII. NOISE

No.4. Prior to issuance of a building permit, the final engineering design should be reviewed by a qualified acoustical consultant and evidence of compliance with the County's noise standards shall be provided.

Who Implements the Measure:	Applicant
When should the measure be implemented:	Prior to issuance of a building permit
When should it be completed:	Prior to issuance of a building permit
Who verifies compliance:	Qualified Acoustical Consultant
Other Responsible Agencies:	Stanislaus County Planning and Community Development Department

I, the undersigned, do hereby certify that I understand and agree to be responsible for implementing the Mitigation Program for the above listed project.

Signature on file.	February 26, 2021
Person Responsible for Implementing Mitigation Program	Date

CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

AREA MAP

LEGEND

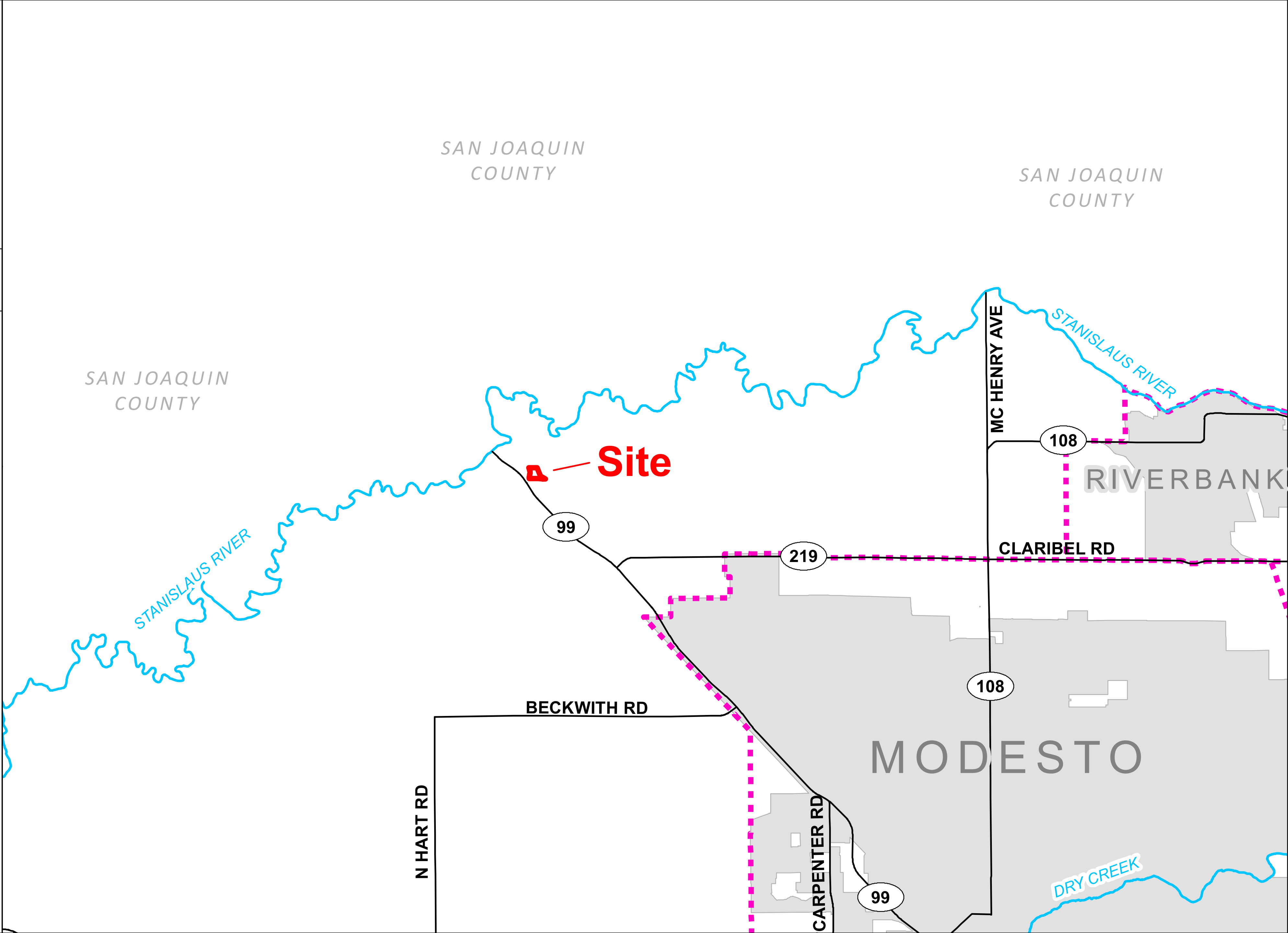
Project Site

Parcel

Road

River

Canal



N

0 2 Miles

0 2 Kilometers

Source: Planning Department GIS

Date: 9/3/2019

CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

GENERAL PLAN MAP

LEGEND

Project Site

Parcel

River

Road

Canal

General Plan

AG	General Agriculture 40 Acre
PD	Planned Development
PI	Planned Industrial
SCP	Salida Community Plan - A2
SCP	Salida Community Plan - C2
SCP	Salida Community Plan - R1
SCP	Salida Community Plan - IBP
SCP	Salida Community Plan - R3

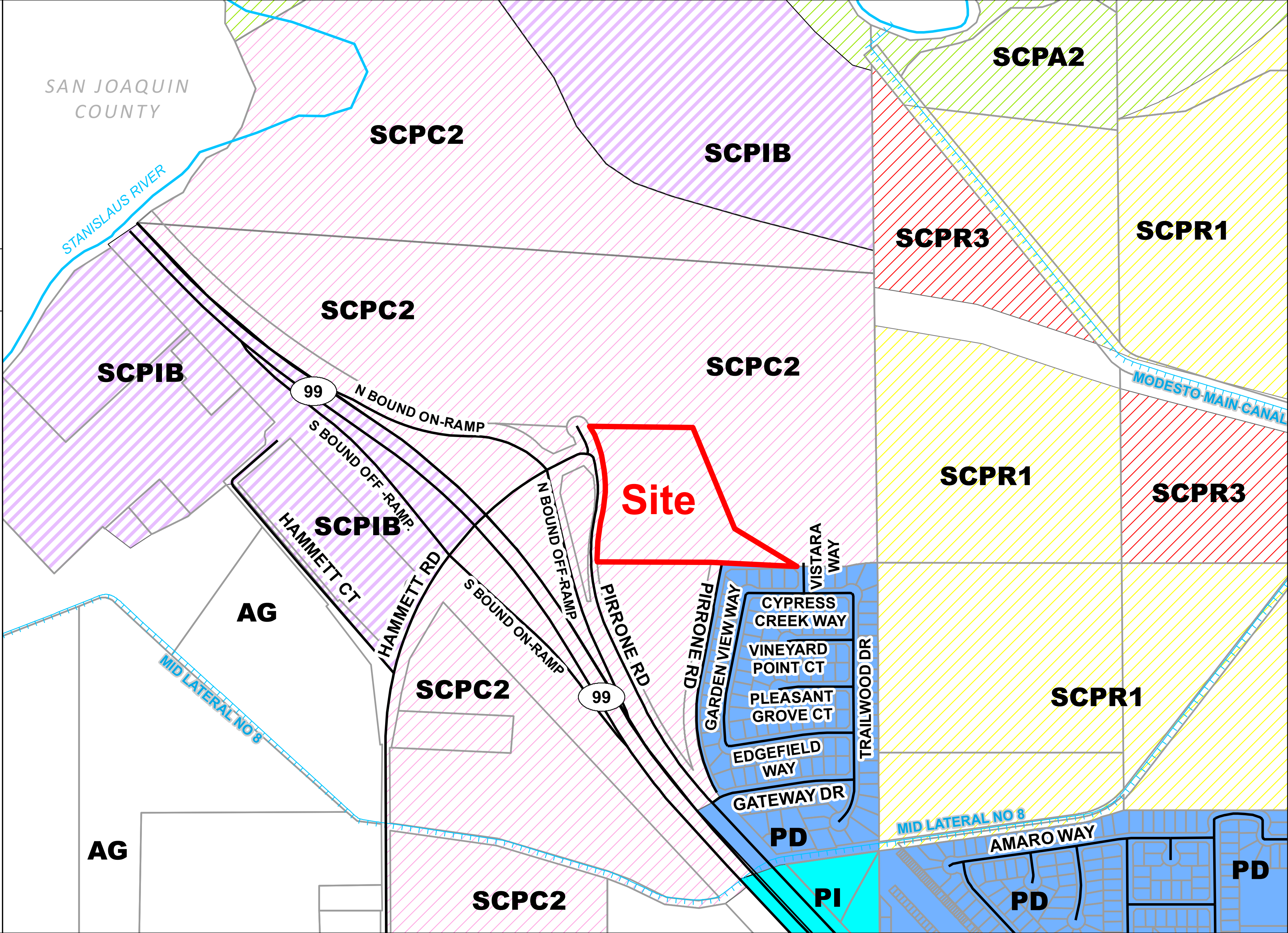
N

0 1,200 ft

0 300 m

Source: Planning Department GIS

Date: 9/3/2019



CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

COMMUNITY PLAN MAP

LEGEND

Project Site

Parcel

Road

River

Canal

Community Plan

AG Agriculture

BP Business Park

COM Commercial

PI Planned Industrial

LDR Residential - Low Density

LDR* Residential - Low (Within Project Boundary)

MDR Residential - Medium

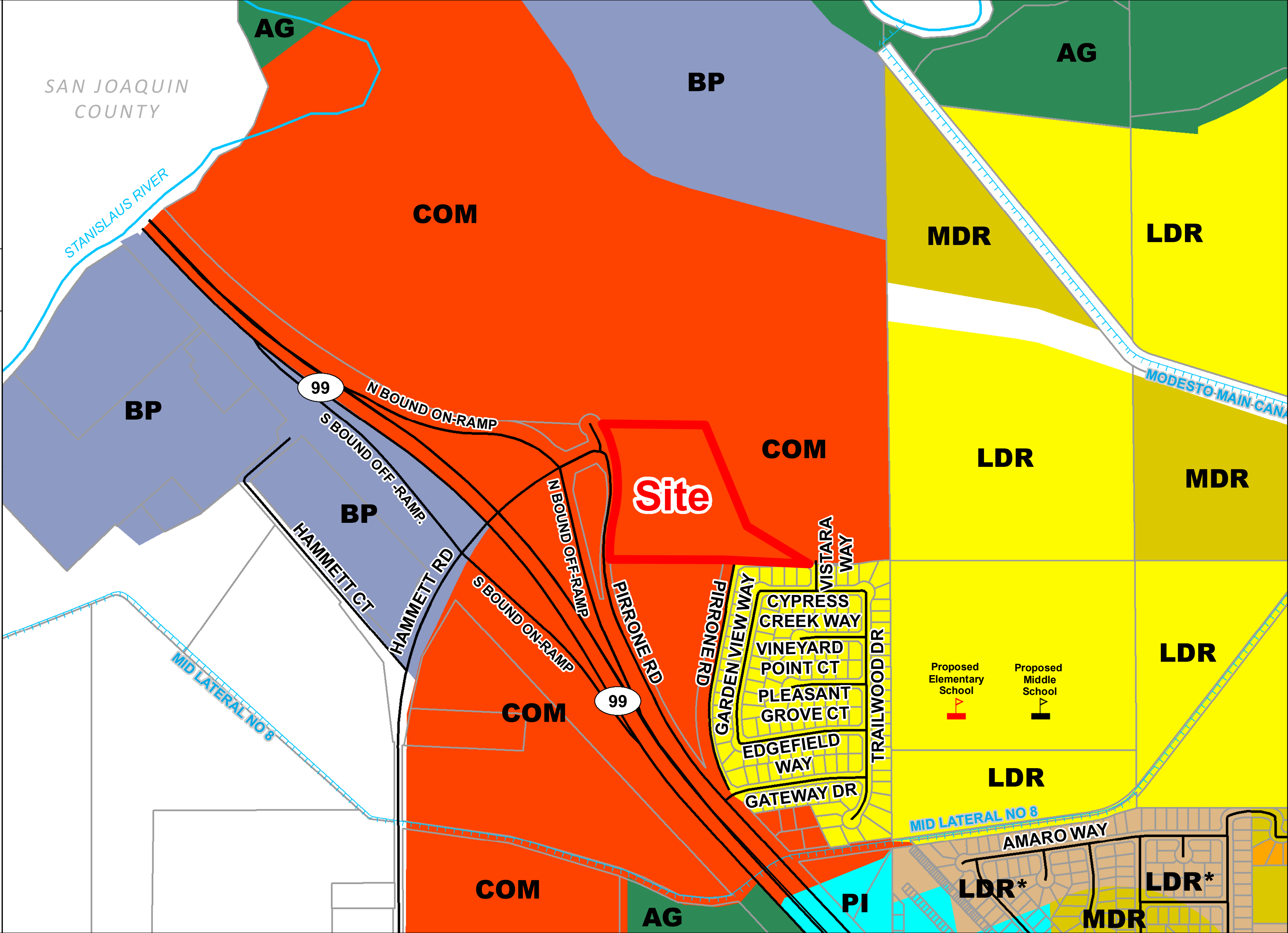
MHDR Residential - Medium High

N

0 1,200 ft

0 300 m

Source: Planning Department GIS Date: 9/5/2019



CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

ZONING MAP

LEGEND

- Project Site
- Parcel
- River
- Road
- Canal

Zoning Designation

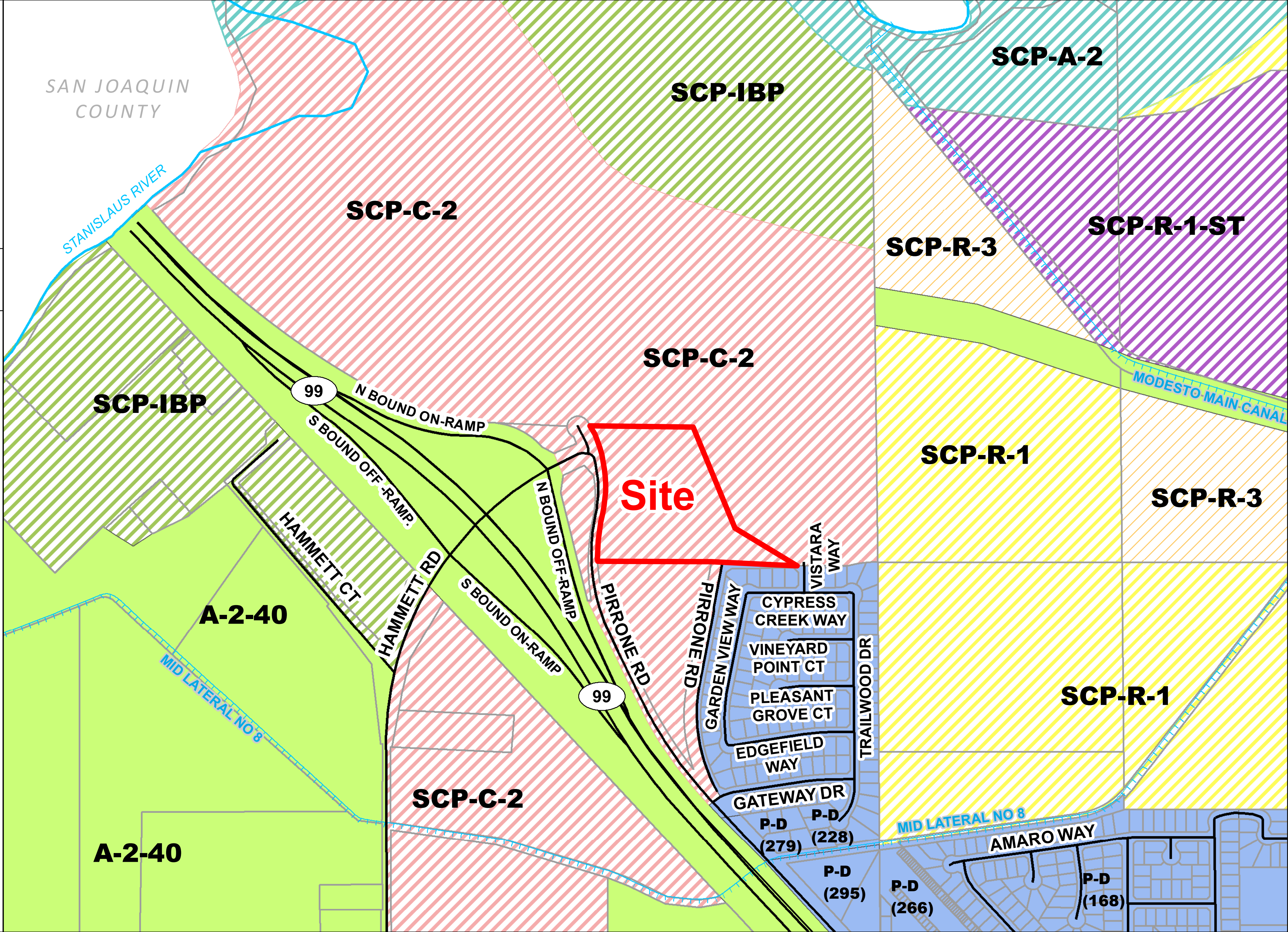
A-2-40	General Agriculture 40 Acre
P-D	Planned Development
SCP	Salida Community Plan - A-2
SCP	Salida Community Plan - IBP
SCP	Salida Community Plan - C-2
SCP	Salida Community Plan - R-1
SCP	Salida Community Plan - R-1ST
SCP	Salida Community Plan - R-3

N

0 1,200 ft

0 300 m

Source: Planning Department GIS Date: 9/3/2019



CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

2017 AERIAL AREA MAP

LEGEND

Project Site

Parcel

Road

River

Canal

N

0 1,200 ft

0 300 m

Source: Planning Department GIS

Date: 9/3/2019

CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

2017 AERIAL SITE MAP

LEGEND

- Project Site
- Parcel
- Road
- River
- Canal

N

0 200 ft

0 40 m

Source: Planning Department GIS

Date: 9/3/2019

CAL SIERRA FINANCIAL INC.

GPA REZ PLN2019-0079

ACREAGE MAP

LEGEND

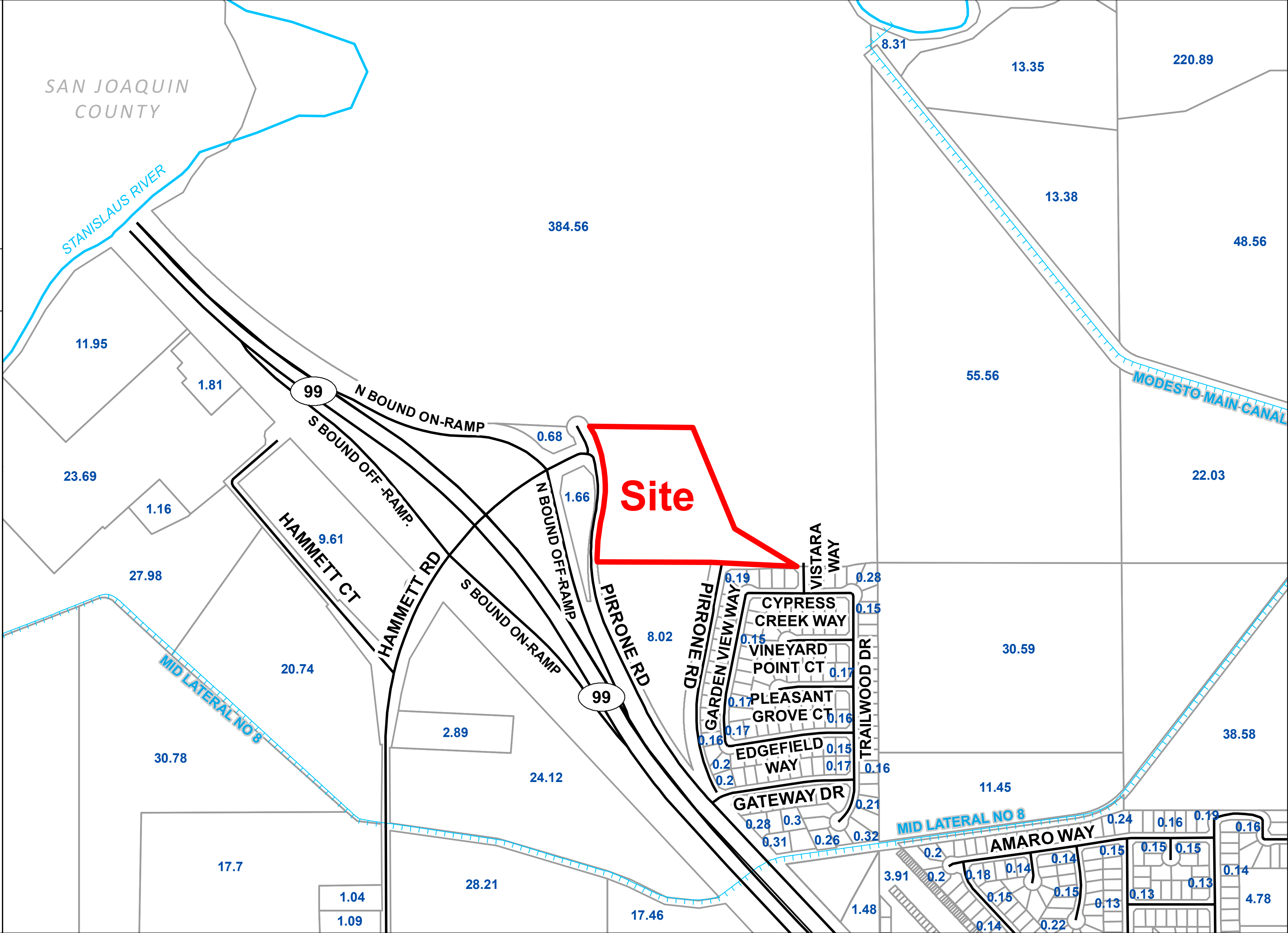
Project Site

Parcel

River

Road

Canal



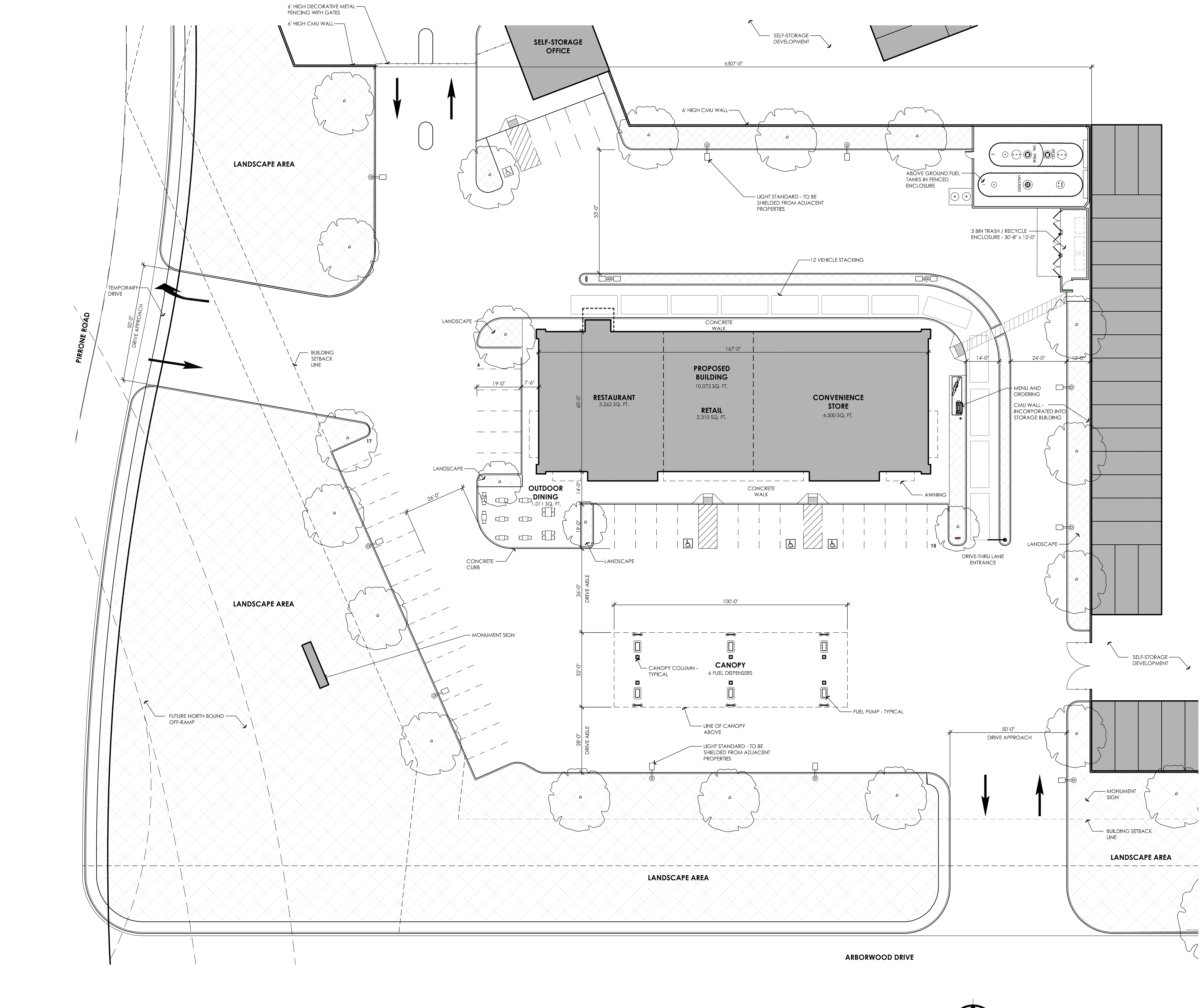
N

0 1,200 ft

0 300 m

Source: Planning Department GIS

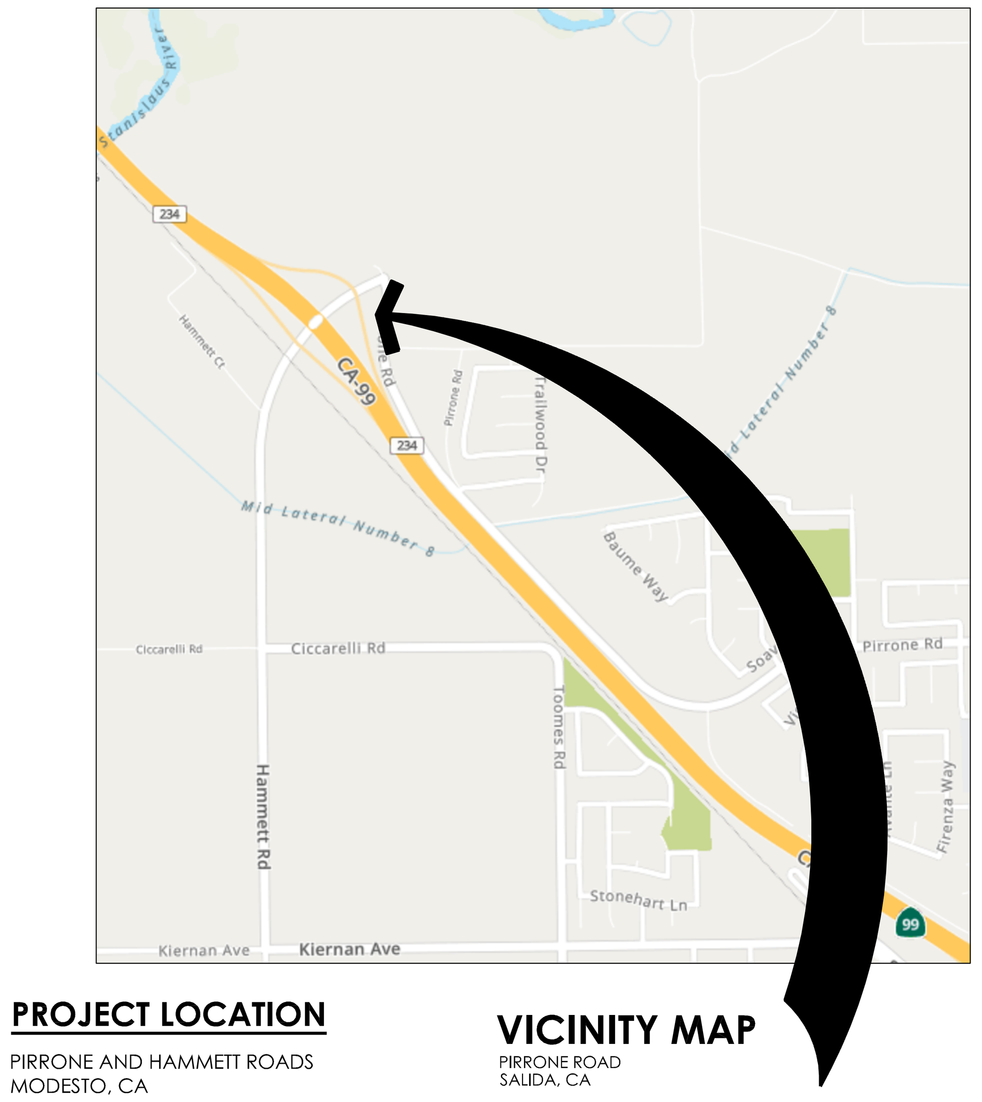
Date: 9/3/2019



SITE PLAN - PROJECT AREA

02-17-21

SCALE: 1" = 20'-0"



PROJECT LOCATION

PIRRONE AND HAMMETT ROADS
MODESTO, CA

VICINITY MAP

PIRRONE ROAD
SALIDA, CA

PROJECT TEAM

PROJECT CONTACT:	ARCHITECT:
BALDEV GREWAL (209) 658-7987 CONTACT: BALDEV GREWAL	API 4335-B NORTH STAR WAY MODESTO, CA 95356 (209) 577-4661 CONTACT: RODNEY ALONZO rod@apiarc.com

PROJECT DESCRIPTION

RETAIL DEVELOPMENT:	NEW 10,072 SQ. FT. CONVENIENCE STORE / RESTAURANT BUILDING WITH SITE DEVELOPMENT
STORAGE DEVELOPMENT:	9 SELF-STORAGE UNIT BUILDINGS, 61,460 SQ. FT. TOTAL, AND 1,400 SQ. FT. OFFICE BUILDING, AND SITE DEVELOPMENT

SITE DATA

JURISDICTION:	COUNTY OF STANISLAUS
ADDRESS:	PIRRONE AND HAMMETT ROADS
ASSESSORS PARCEL NUMBER:	003-014-007
PROPERTY AREA:	418,176 SQ. FT. / 9.60 AC
DEVELOPMENT AREA:	RETAIL - 144,154 SQ. FT. / 3.3 AC STORAGE - 182,531 SQ. FT. / 4.19 AC
BUILDING COVERAGE:	RETAIL - 10,072 SQ. FT. (.069% OF RETAIL DEVELOPMENT AREA) STORAGE - 62,820 SQ. FT. (.34% OF STORAGE DEVELOPMENT AREA)
CURRENT ZONE:	SALIDA COMMUNITY PLAN C-2
GENERAL PLAN:	SALIDA COMMUNITY PLAN C-2

BUILDING DATA

RETAIL DEVELOPMENT AREA:	
BUILDING AREA:	10,072 SQ. FT.
BUILDING USE:	CONVENIENCE STORE / RESTAURANT / RETAIL
STORIES:	1
SELF-STORAGE DEVELOPMENT:	62,820 SQ. FT.
BUILDING USE:	RENTED STORAGE UNITS
STORIES:	1

PARKING DATA

RETAIL DEVELOPMENT

PARKING REQUIRED	
CONVENIENCE STORE - 1 STALL/300 SQ. FT.:	15 STALLS
RETAIL - 1 STALL/300 SQ. FT.:	8 STALLS
RESTAURANT - 1 STALL/4 SEATS:	15 STALLS
TOTAL PARKING REQUIRED:	38 STALLS

PARKING PROVIDED	
STANDARD:	35 STALLS
ACCESSIBLE:	3 STALL
TOTAL PARKING PROVIDED:	38 STALLS

STORAGE DEVELOPMENT

PARKING PROVIDED	
OFFICE - 1 STALL/300 SQ. FT.:	5 STALLS
TOTAL PARKING REQUIRED:	5 STALLS

PARKING PROVIDED	
STANDARD:	4 STALLS
ACCESSIBLE:	1 STALL
TOTAL PARKING PROVIDED:	5 STALLS

PROPOSED NEW DEVELOPMENT:

PIRRONE RETAIL

PIRRONE ROAD AND HAMMETT ROAD SALIDA, CA.

PLANNING ARCHITECTURE
api
ARCHITECTURE PLUS INC.
4335-B NORTH STAR WAY
MODESTO, CA 95356

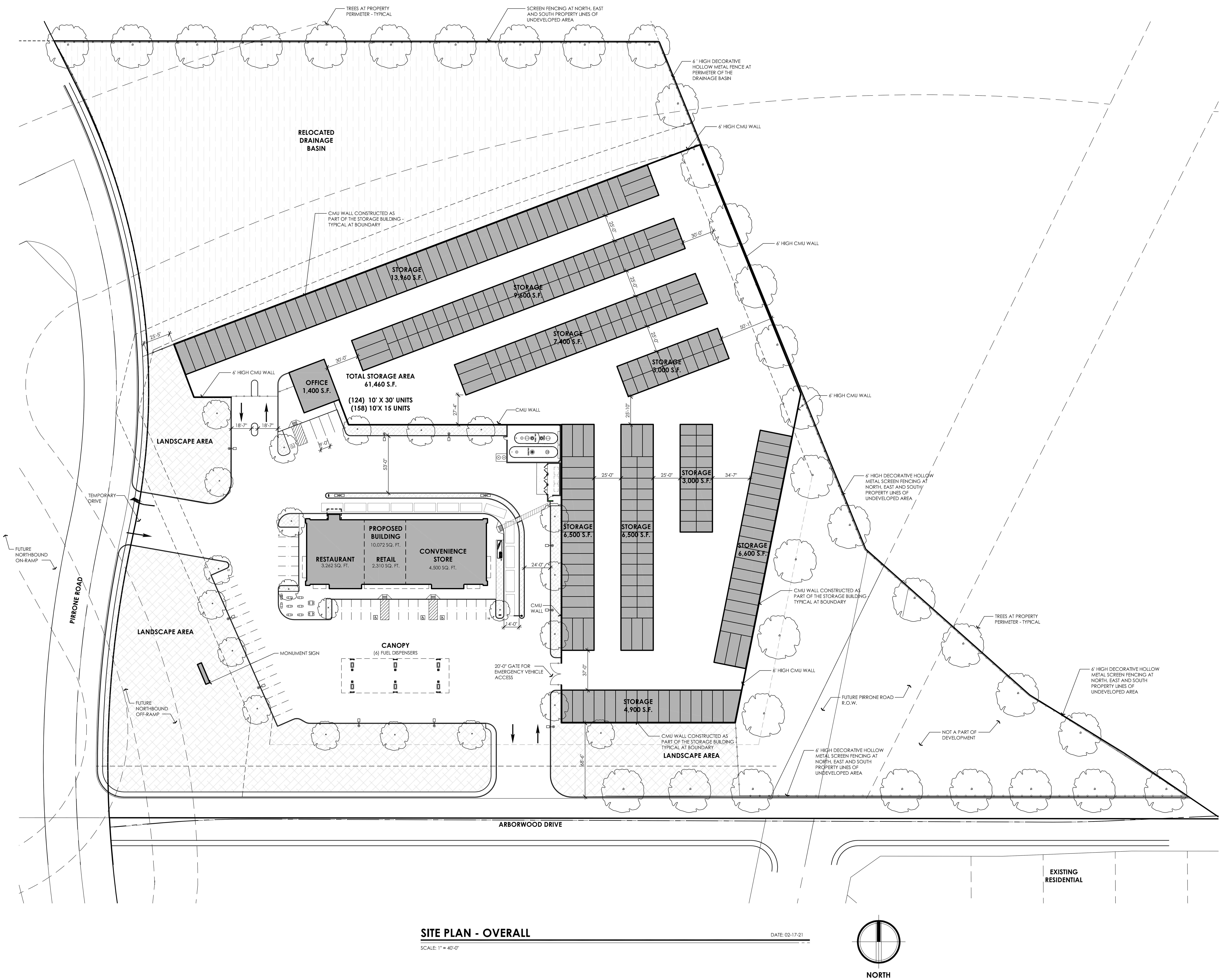
ph. 209.577.4661
fx. 209.577.0213

www.apiarc.com

SHEET:

A1

OF 2



SITE CONCEPT NARRATIVE

THE SITE LANDSCAPE FOR THIS PROJECT WILL BE DESIGNED TO PROVIDE AN AESTHETIC LANDSCAPE DESIGN THAT MEETS THE PROJECT GOALS AND CONFORMS WITH THE COUNTY'S LANDSCAPE GUIDELINES. THE PLANTING DESIGN WILL PROVIDE CLEAN AND OPEN LANDSCAPE TO COMPLIMENT THE BUILDING ARCHITECTURE, PROVIDE CLEAR VIEWS THROUGH THE PARKING LOT, COORDINATE WITH THE NEARBY EXISTING LANDSCAPE AND ENHANCE THE STREET EDGE.

PLANT SPECIES WILL BE SELECTED TO PERFORM WELL IN THIS REGION. PLANTS SELECTED FOR THIS PROJECT WILL HAVE LOW OR MEDIUM WATER USE CLASSIFICATION, ARE DURABLE AND REQUIRE LOW MAINTENANCE. THE PLANTING DESIGN WILL CONFORM WITH THE COUNTY'S MWELO ORDINANCE AND BE DROUGHT TOLERANT.

IRRIGATION DESIGN

THE LANDSCAPE ON THIS SITE WILL USE DRIP IRRIGATION, WILL MEET THE COUNTY'S REQUIREMENTS AND COMPLY WITH THE REQUIREMENTS OF THE STATE'S WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). EQUIPMENT INCLUDES DEDICATED IRRIGATION METER, SMART CONTROLLER, WEATHER SENSOR AND EFFICIENT IRRIGATION EMITTERS, NOZZLES AND OTHER EQUIPMENT.

SITE PLAN - OVERALL

DATE: 02-17-21

SCALE: 1" = 40'-0"

PROPOSED NEW DEVELOPMENT:

PIRRONE RETAIL

PIRRONE ROAD AND HAMMETT ROAD SALIDA, CA.

PLANNING ARCHITECTURE

api

ARCHITECTURE PLUS INC.
4335-B NORTH STAR WAY
MODESTO, CA 95356

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SHEET:

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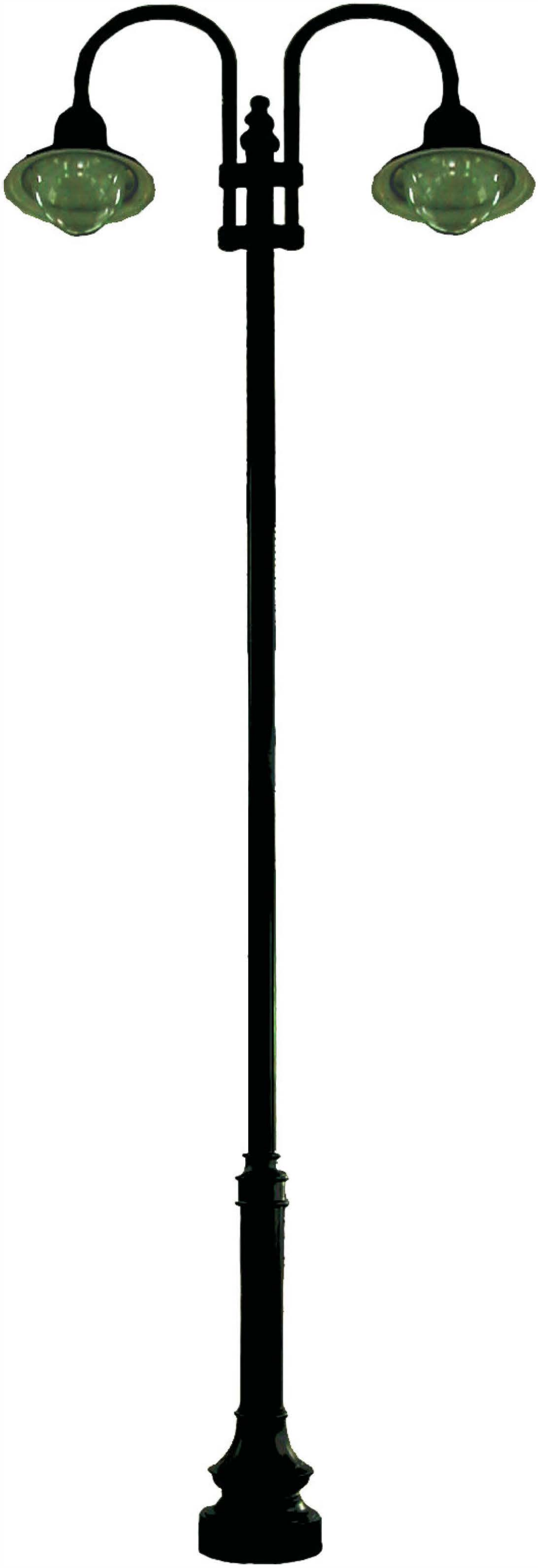
OF 2

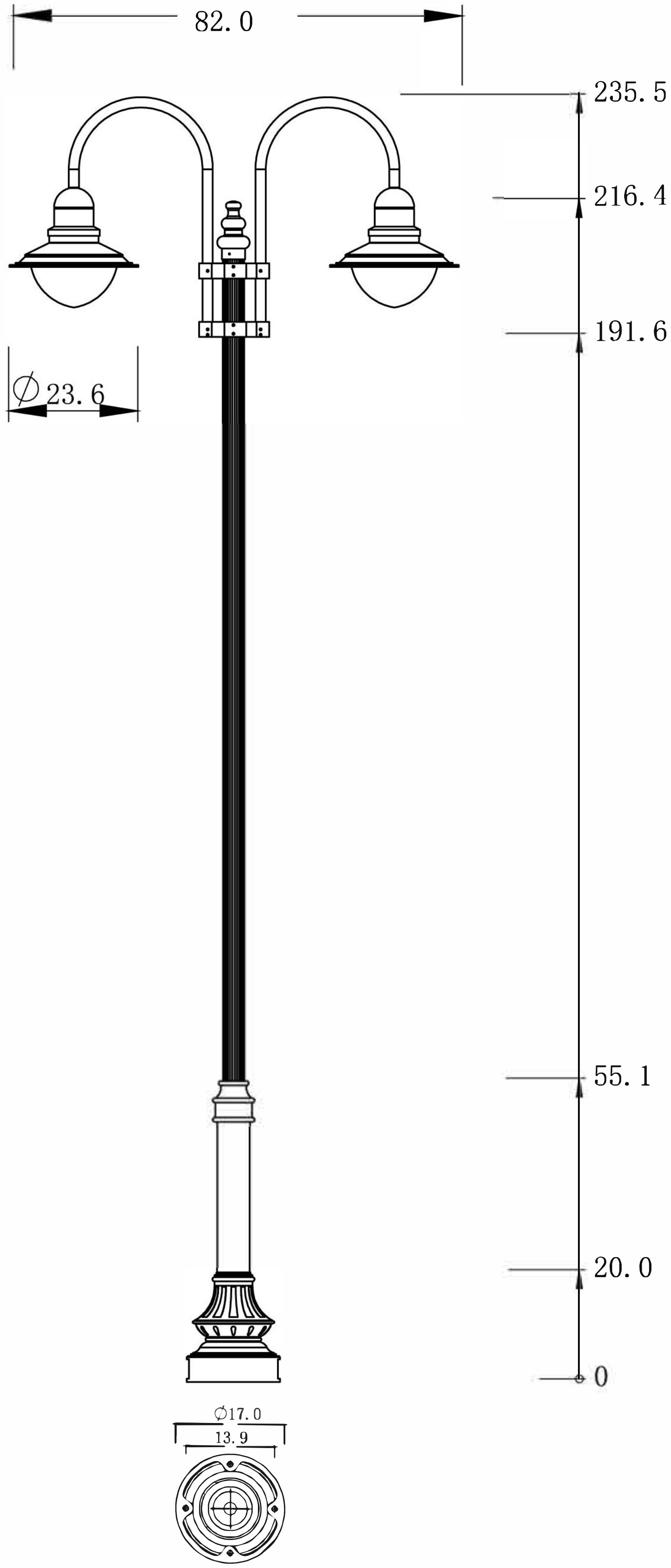

evron

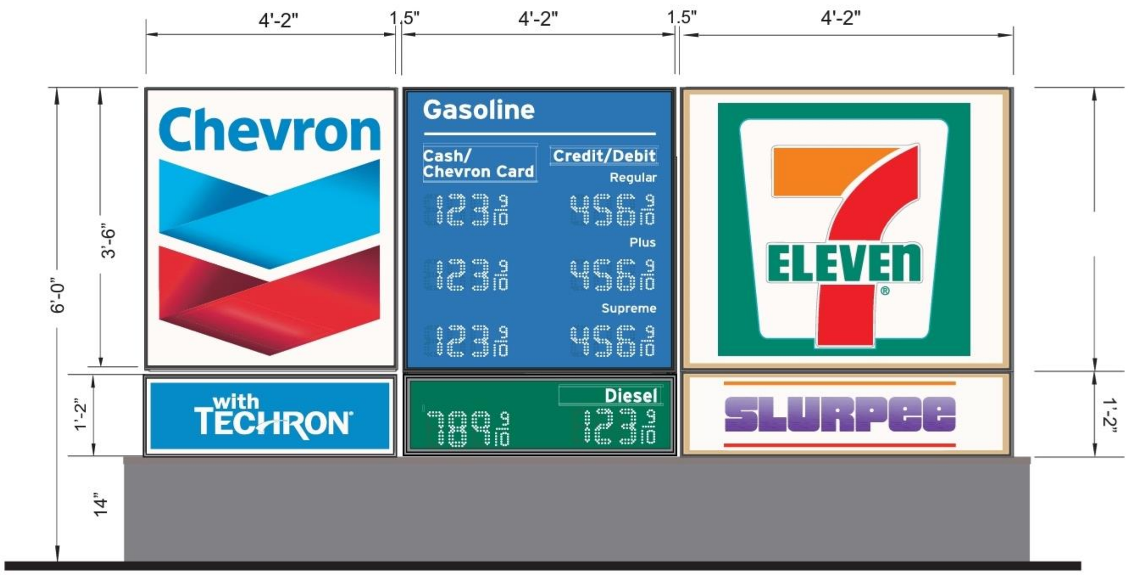

Chevron
Chevron


Chevron



VENIA





4'-2"
1.5"
4'-2"
1.5"
4'-2"
6'-0"
3'-6"
1'-2"
14"
1'-2"
Chevron
Gasoline
Cash/
Chevron Card
Credit/Debit
Regular
Plus
Supreme
ELEVEN
with
TECHRON
Diesel
SLURPEE

PIRRONE ROAD MARKET, RESTAURANT, GASOLINE STATION, & MINI STORAGE

AIR QUALITY & HEALTH RISK ASSESSMENT

Stanislaus County, California

February 5, 2021

Prepared for:

Roman Acosta
J. B. Anderson Land Use Planning
139 S. Stockton Avenue
Ripon, California 95366

Prepared by:

Jay Witt and James A. Reyff

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

429 E. Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Project: 20-169

INTRODUCTION

This report assesses the air quality impacts associated with the proposed development of a mixed-use gas station with convenience market/deli, fast food restaurant with drive through window, and mini storage facility on the west side of Pirrone Road between Hammet Road and Arborwood Drive in Stanislaus County, California. The Project will occupy approximately 5.6 acres of a 9.6-acre site adjacent to the east side of Pirrone Road and the north side of Arborwood Drive, as shown in Figure 1.

FIGURE 1. Project Location

The Proposed Project includes the construction of one commercial building that will contain a 4,500-square foot (sf) convenience market with a 6-pump gasoline dispensing facility (GDF) not for use by heavy-duty vehicles (i.e., no semi-trucks), a 3,250 sf fast food restaurant with a drive-through window, and a 2,300 sf retail space. This portion of the project would include 34 parking spaces and one covered fueling island. The island will provide unleaded gasoline and diesel fuel, but will not be able to accommodate large, heavy-duty diesel vehicles. The project would also construct eight mini storage buildings and approximately 62,340 sf of storage space with an accompanying front office.

Fuel will be stored in two above-ground storage tanks, located near the center of the site. The tanks will be enclosed in a cinder block concrete structure adjacent to the mini storage facility and will have no public access. It is estimated there will be a maximum of 18 employees on-site between the market, restaurant, and retail portion of the project. The market and GDF will operate 24 hours per day, 7 days per week and will sell approximately 4,340 gallons of fuel a day.

Development projects of this type in the San Joaquin Valley may directly impact air quality due to the emissions they generate during construction and the emissions generated from GDF operations. Indirect impacts may also occur from vehicle emissions associated with travel to and from the site during construction and operation. This report describes existing air quality conditions, construction period air quality impacts, operational air quality impacts (at both a local and regional scale) and identifies any necessary mitigation measures to reduce or eliminate air quality impacts identified as significant. The project's potential impacts on air quality during construction and operation have been assessed per the San Joaquin Valley Air Pollution Control District's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI).[1]

SETTING

TOPOGRAPHIC CONSIDERATIONS

The project site is in Stanislaus County in the northern portion of the San Joaquin Valley Air Basin. The California Air Resources Board (CARB) defines the boundaries of the basin by the San Joaquin Valley within the Sierra Nevada Mountains to the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley opens to the ocean at the north, at the Carquinez Strait, where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The valley floor is basically flat with a slight downward gradient to the northwest. Thus, the airshed is considered a "basin" with the primary opening to the north. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of air pollutants from the basin. Wind flow is usually down the valley from the north, as the Tehachapi Mountains block or restrict the southward progression of airflow. The Sierra Nevada are a substantial barrier from the usual westerly winds, which also contributes to the weak airflow in the valley. The flow is further restricted vertically by temperature inversion layers that are common in the San Joaquin Valley air basin throughout the year. An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the cold air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 1,500 to 3,000 feet above the valley floor that lead to a buildup of ozone and ozone precursor pollutants. During the fall and winter months, strong surface-based inversions occur from 500 to 1,000 feet above the valley floor.[2] These inversions trap very stable air near the surface and lead primarily to a buildup of particulate matter.

AIR BASIN CHARACTERISTICS

The climate of the project area is characterized by hot dry summers and cool, mild winters. Clear days are common from spring through fall. Daytime temperatures in the summer often approach or exceed 100 degrees, with lows in the 60s. In the winter, daytime temperatures are usually in the 50s, with lows around 35 degrees. Radiation fog is common in the winter and may persist for days. Partly to mostly cloudy days are common in winter, as most precipitation received in the Valley falls from November through April.

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[1] *Guide for Assessing and Mitigating Air Quality Impacts*. SJVAPCD. 2015. March.

[2] *Extreme Ozone Attainment Demonstration Plan*. SJVAPCD. 2004. October.

Winds are predominantly up-valley (flowing from the north) in all seasons, but more so in the summer and spring months (CARB 1984). In this flow, winds are usually from the north end of the Valley and flow in a south-southeasterly direction, through Tehachapi Pass, into the Southeast Desert Air Basin. Annually, up-valley wind flow (i.e., northwest flow with marine air) is most common, occurring about 40 percent of the time. This type of flow is usually trapped below marine and subsidence inversions, restricting outflow through the Sierra Nevada and Tehachapi Mountains. The occurrence of this wind flow is almost 70 percent of the time in summer, but less than 20 percent of the time in winter. Winter and fall are characterized by mostly light and variable wind flow. Pacific storm systems do bring southerly flows to the valley during late fall and winter. Light and variable winds, less than 10 miles per hour (mph), are common in the winter months.

Superimposed on this seasonal regime is the diurnal wind cycle, which takes the form of a combination of a modified sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime typically has a modified sea breeze flowing into the Valley from the north during the late day and evening and then a land breeze flowing out of the Valley late at night and early in the morning. The mountain-valley regime has an upslope (mountain) flow during the day and a down slope (valley) flow at night. These effects create a complexity of regional wind flow and pollutant transport.

The pollution potential of the San Joaquin Valley Air Basin is very high. The San Joaquin Valley has one of the most severe air pollution problems in the State and the Country. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in late spring, summer, and early fall are ideal conditions for the formation of ozone, where residents frequently experience unhealthy air pollution days. Low wind speeds, combined with low inversion layers in the winter, create conditions conducive to high respirable particulate matter (i.e., PM_{10} and $PM_{2.5}$) concentrations and elevated carbon monoxide (CO) levels.

REGULATORY SETTING

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National Ambient Air Quality Standards (NAAQS) were established by the Federal Clean Air Act (CAA) of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM_{10}), sulfur dioxide ($S0_2$), and lead (Pb). In 1997, The Environmental Protection Agency (EPA) added fine particulate matter ($PM_{2.5}$) as a criteria pollutant. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. California Ambient Air Quality Standards (CAAQS) include the six "criteria" pollutants and hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically examined in environmental air quality assessments. In addition, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels.

Federal Regulations

At the federal level, the United States Environmental Protection Agency (US EPA) administers and enforces air quality regulations. Federal air quality regulations were developed primarily from implementation of the Federal Clean Air Act. If an area does not meet NAAQS over a set period (three years), EPA designates it as a "nonattainment" area for that pollutant. EPA requires states that have areas that do not comply with the national standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). Under severe cases, EPA may impose a federal plan to make progress in meeting the federal standards.

EPA also has programs for identifying and regulating hazardous air pollutants. The Clean Air Act requires EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries were classified as major sources if they emitted certain amounts of hazardous air pollutants. The US EPA also sets standards to control emissions of hazardous air pollutants through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

The San Joaquin Valley Air Basin is subject to major air quality planning programs required by the CAA (1977, last amended in 1990, 42 United States Code [USC] 7401 *et seq.*) to address O_3, PM, and CO. The CAA requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the CAA. These plans are submitted to the State, which after approval, submits them to US EPA as the SIP.

State Regulations

The California Clean Air Act of 1988, amended in 1992, outlines a program for areas in the State to attain the CAAQS by the earliest practical date. CARB is the state air pollution control agency and is a part of the California EPA. The California Clean Air Act sets more stringent air quality standards for all the pollutants covered under national standards, and additionally regulates levels of vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. The San Joaquin Valley Air Basin does not meet the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. CARB requires regions that do not meet CAAQS for O_3 to submit clean air plans that describe plans to attain the standard or show progress toward attainment.

In addition to the US EPA, CARB further regulates the amount of air pollutants that can be emitted by new motor vehicles sold in California. California-specific vehicle emissions standards were first imposed in 1961 and are more stringent than federal standards. CARB also sets standards for motor vehicle fuels sold in in the state and has implemented vehicle Inspection and Maintenance (I/M) and "Smog Check" programs with the California Bureau of Automotive Repair.

Local Air District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings Tulare, and the western portion of Kern. The primary role of the SJVAPCD is to develop rules, regulations, plans, and pollution control strategies for the San Joaquin Valley to control air pollution in the region. The district's rules and regulations control air pollution from a wide range of sources, not just large industrial sources such as factories and power plants. In March 2007, an Indirect Source Review (ISR) rule was adopted that controls air pollution from new land developments. SJVAPCD also conducts public education and outreach efforts such as the Spare the Air, Wood Burning, and Smoking Vehicle voluntary programs.

<u>Stanislaus County General Plan 2015</u>

The Conservation/Open Space Element (Chapter 3 of the General Plan) establishes goals, objectives, and policies to guide planning decisions and provides the platform for local action in addressing air quality, energy, and climate change issues.

Applicable goals, objectives, and policies presented in the General Plan are as follows:

GOAL 6 Improve air quality:

- Policy 18: The County will promote effective communication, cooperation, and coordination among agencies involved in developing and operating local and regional air quality programs.
- Policy 19: The County will strive to accurately determine and fairly mitigate the local and regional air quality impacts of proposed projects.
- Policy 20: The County shall strive to reduce motor vehicle emissions by reducing vehicle trips and vehicle miles traveled and increasing average vehicle ridership.
- Policy 21: The County will support efforts to increase public awareness of air quality problems and solutions.
- Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors.

Applicable Implementing Measures:

- Refer discretionary projects under CEQA review to the San Joaquin Valley Air Pollution Control District (SJVAPCD), neighboring jurisdictions and other affected agencies for review and comment.
- Require all development proposals, where appropriate, to include reasonable air quality mitigation measures.
- Minimize case-by-case analysis of air quality impacts using standard criteria for determining significant environmental effects, a uniform method of calculating project emissions, and standard mitigation methods to reduce air quality impacts.
- Work with the local building industry, utilities, and the SJVAPCD to educate developers and builders on the benefits of energy-efficient designs and the use of low-emission equipment for new residential and commercial construction.

NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

The CAA and CCAA promulgate, respectively, national and State ambient air quality standards. Air quality standards have been established by US EPA (i.e., NAAQS) and California (i.e., CAAQS) for specific air pollutants most pervasive in urban environments. The NAAQS and CAAQS are shown in Table 1. Ambient standards specify the concentration of pollutants to which the public may be exposed without adverse health effects. Individuals vary in their sensitivity to air pollutants, and standards are set to protect more pollution-sensitive populations (e.g., children and the elderly). National and State standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent. For planning purposes, regions like the San Joaquin Valley Air Basin are given an air quality status designation by the federal and State regulatory agencies. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated "attainment" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards within an air basin, it is designated "nonattainment" for that pollutant. US EPA designates areas as "unclassified" when insufficient data are available to determine the attainment status. These areas are typically considered to be in attainment of the standard.

CRITERIA AIR POLLUTANTS AND THEIR HEALTH EFFECTS

The primary criteria air pollutants that would be emitted by the project include ozone (O_3) precursors (NO_x and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Other criteria pollutants, such as lead (Pb) and sulfur dioxide (SO_2), would not be substantially emitted by the project or traffic, and air quality standards for them are being met throughout the San Joaquin Valley Air Basin. A description of each pollutant is provided below, as described by SJVAPCD[3] and the Bay Area Air Quality Management District.[4]

Ozone (O_3)

While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere (troposphere) it can be harmful to the human respiratory system and to sensitive species of plants. Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Short-term O_3 exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest.

Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that consist of two families of pollutants: oxides of nitrogen (NO_x) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as O_3 precursors. In 2007, CARB adopted an 8-hour health-based standard for O_3 of 0.070 parts per million (ppm). The U.S. EPA revised the 8-hour NAAQS for O_3 from 0.080 ppm in 2008 and reduced it again in 2015 to 0.070 ppm[5,6].

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[3] Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) – Final Draft. SJVAPCD. 2015. March.

[4] Bay Area Air Quality Management District (BAAQMD). 2011. *BAAQMD CEQA Air Quality Guidelines*. May (updated May 2017). http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

[5] *The California Almanac of Emissions and Air Quality - 2013 Edition*. CARB. 2013

[6] U.S. EPA. 2017. *2008 National Ambient Air Quality Standards (NAAQS) for Ozone*. See https://www.epa.gov/ozone-pollution/2008-national-ambient-air-quality-standards-naaqs-ozone. Accessed 06/19/18.

TABLE 1 Ambient Air Quality Standards[7]

Pollutant	Averaging Time	California Standards Concentration	National Standards Concentration
Ozone	1-hour	0.09 ppm (180 µg/m^3)	—
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3) (3-year average of annual 4th highest daily maxima)
Carbon Monoxide	8-hour	9.0 ppm (10,000 µg/m^3)	9 ppm (10,000 µg/m^3)
	1-hour	20 ppm (23,000 µg/m^3)	35 ppm (40,000 µg/m^3)
Nitrogen dioxide	Annual Average	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3) (3-year average of annual 98th percentile daily maxima)
Sulfur dioxide			
	24-hour	0.04 ppm (105 µg/m^3)	—
	3-hour	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3) (3-year average of annual 99th percentile daily maxima)
Respirable particulate matter (10 micron)	24-hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	—
Fine particulate matter (2.5 micron)	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3 (3-year average)
	24-hour	—	35 µg/m^3 (3-year average of annual 98th percentile daily concentrations)
Sulfates	24-hour	25 µg/m^3	—
Lead	30-day	1.5 µg/m^3	—
	3 Month Rolling Average	—	0.15 µg/m^3

Source: CARB website, 12/1/16.
SO_2 Federal 24 hour and annual standards are not applicable in the SJVAPCD.
µg/m^3 = micrograms per cubic meter
ppm = parts per million

Carbon Monoxide (CO)

Carbon monoxide or CO is a colorless, odorless, poisonous gas. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue, and causes reduced lung capacity, impaired mental abilities, and central nervous system function, and induces angina in persons with serious heart disease. Primary sources of CO in ambient air are exhaust emissions from on-road vehicles, such as passenger cars and light-duty trucks, and residential wood burning. The

[7] Source: California Air Resources Board (http://www.arb.ca.gov)

monitored CO levels in the Valley during the last 10 years have been well below ambient air quality standards.

Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. Nitrogen dioxide is a combustion by-product, but it can also form in the atmosphere by chemical reaction. Nitrogen dioxide is a reddish-brown colored gas often observed during the same conditions that produce high levels of O_3 and can affect regional visibility. Nitrogen dioxide is one compound in a group of compounds consisting of oxides of nitrogen (NO_x). As described above, NO_x is an O_3 precursor compound. Monitored levels of NO_2 in the Valley are below ambient air quality standards.

Particulate Matter (PM)

Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the Federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles can penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. These fine particulates have been demonstrated to decrease lung function in children. Certain components of PM are linked to higher rates of lung cancer. Very small particles of certain substances (e.g., sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

The current State PM_{10} standard, approved in 2002, is 20 micrograms per cubic meter ($\mu g/m^3$) for an annual average. The 24-hour average standard is 50 $\mu g/m^3$. $PM_{2.5}$ standards were first promulgated by the U.S. EPA in 1997 and were revised in 2006 to lower the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$ for 24-hour exposures (Federal Register, Vol. 71, No. 10, January 17, 2006). That same action by U.S. EPA also revoked the annual PM_{10} standard due to lack of scientific evidence correlating long-term exposures of ambient PM_{10} with health effects. CARB has only adopted an annual average $PM_{2.5}$ standard, which is set at 12 μg/m^3. This is equal to the NAAQS of 12 μg/m^3.[8]

TOXIC AIR CONTAMINANTS

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the CAA and Toxic Air Contaminants (TACs) under the CCAA. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level.

HAPs are the air contaminants identified by U.S. EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 HAPS. Of the 21 HAPs identified by U.S. EPA as MSATs, a priority list of six priority HAPs was identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. The Federal Highway Administration (FHWA) reports[9] that while vehicle miles traveled (VMT) in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).

California developed a program under the Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807, Tanner 1983), also known as the Tanner Toxics Act, to identify, characterize and control TACs. Subsequently, AB 2728 (Tanner, 1992) incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter (DPM) near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) described by CARB,[10] was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

Particulate matter from diesel exhaust is the predominant TAC in urban air and is estimated to represent about 70 percent of the cancer risk from TACs, based on the statewide average reported by CARB.[11] According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine

[8] iADAM: *Air Quality Data Statistics*. CARB. 2016. https://www.arb.ca.gov/adam/index.html

[9] *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*. FHWA.2016. https://www.fhwa.dot.gov/environMent/air_quality/air_toxics/policy_and_guidance/msat/

[10] *AB 2588 Air Toxics "Hot Spots" Program*. CARB. 2016. https://www.arb.ca.gov/ab2588/ab2588.htm

[11] *Overview: Diesel Exhaust and Health*. CARB. 2012. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health

particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing TACs emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (DPM) was found to comprise much of that risk. In 1998, CARB formally identified DPM as a TAC. DPM is of particular concern since it can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by U.S. EPA as HAPs, and by CARB as TACs. Most diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are the particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020.[12] The EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce DPM substantially.

Smoke from residential wood combustion can be a source of TACs. Wood smoke is typically emitted during winter when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

EXISTING AIR QUALITY

As previously discussed, the San Joaquin Valley experiences poor air quality conditions, due primarily to elevated levels of ozone and particulate matter. CARB, in cooperation with SJVAPCD, monitors air quality throughout the San Joaquin Valley Air Basin. Monitoring data presented in Table 2 was derived for each pollutant based upon the closest monitoring station to the project site. The monitoring station in on 14th Street in Modesto measures ozone, PM_{10} and $PM_{2.5}$.

Ozone

In California, ozone concentrations are generally lower near the coast regions than inland regions. The inland regions, such as the San Joaquin Valley, typically experience some of the higher ozone concentrations. This is because of the greater frequency of hot days (that is, higher temperatures) and stagnant air conditions (that is, very calm atmospheric conditions with very gentle winds) that are conducive to ozone formation. Many areas of the Valley lie downwind of urban areas that are sources of ozone precursor pollutants. Exceedances of the ozone standard occurred on 8 to 21 days per year, based on the last 3 years of available monitoring data.

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[12] *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. CARB. 2000. October. https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf

Carbon Monoxide

State and federal standards for carbon monoxide are met throughout California as a result of cleaner vehicles and fuels that were reformulated in the 1990s. For CO, the 2012 monitored value of 2.2 ppm for an 8-hour average was used as the air basin maximum level.[13] Because CO levels are so low in the air basin, monitoring was discontinued after 2012.

TABLE 2 Summary of Criteria Air Pollution Monitoring Data for San Joaquin County

Pollutant	Standard	Monitored Values(1) and Exceedance Days		
		2017	**2018**	**2019**
Ozone (ppm) measured in Modesto	State 1-Hour	**0.111 / 3**	**0.103 / 2**	**0.102 / 1**
Ozone (ppm) measured in Modesto	State 8-Hour	**0.098 / 21**	**0.091 /13**	**0.083 / 8**
Ozone (ppm) measured in Modesto	Federal 8-Hour	**0.098 / 21**	**0.091 / 13**	**0.083 / 8**
PM_{10} (ug/m^3) measured in Modesto	State 24-Hour	**128.9/ 58**(2)	**236.4/ 44**(2)	**315.6/ 41**(2)
PM_{10} (ug/m^3) measured in Modesto	Federal 24-Hour	129.3/ 0(2)	224.9/ 4(2)	309.1/ 1(2)
PM_{10} (ug/m^3) measured in Modesto	State Annual	**31.1**(2)	**--**(2)	**--**(2)
$PM_{2.5}$ (ug/m^3) measured in Modesto	Federal 24-Hour	**74.5/ 25**(2)	**189.8 / 21(2)**	**34.4 / 0(2)**
$PM_{2.5}$ (ug/m^3) measured in Modesto	State Annual	**12.9**(2)	**15.2**(2)	7.7(2)
$PM_{2.5}$ (ug/m^3) measured in Modesto	Federal Annual	12.8(2)	15.2(2)	7.7(2)
Carbon Monoxide (ppm)	State/Fed.8-Hour	NA / --(3)	NA / --(3)	NA / --(3)
Nitrogen Dioxide (ppm) measured in Stockton	State 1-Hour	0.06 / 0	0.07 / 0	0.06 / 0
Nitrogen Dioxide (ppm) measured in Stockton	Federal 1-Hour	0.059 / 0	0.067 / 0	0.059 / 0
Nitrogen Dioxide (ppm) measured in Stockton	State Annual	0.009	0.009	0.008

Note: (1) Monitored values are the high values considering the form of the applicable standard,
(2) affected by firestorms, and
(3) NA = not available in summaries, but last measured levels in 2012 were 2 ppm.

Source: CARB ADAM Data at http://www.arb.ca.gov/adam/index.html, Accessed 12/03/2020

Particulate Matter ($PM_{2.5}$ and PM_{10})

Most areas of California have either 24-hour or annual PM_{10} concentrations that exceed the State standards. Most urban areas exceed the State annual standard and the 2006 24-hour federal standard. In the San Joaquin Valley (S.J. Valley or Valley), there is a strong seasonal variation in PM, with higher PM_{10} and $PM_{2.5}$ concentrations occurring in the fall and winter months. These higher concentrations are caused by increased activity for some emission sources and meteorological conditions that are conducive to the build-up of particulate matter. Industry and motor vehicles consistently emit particulate matter. Seasonal sources of particulate matter in the Valley include wildfires, agricultural activities, windblown dust, and residential wood burning. In

[13] *iADAM: Air Quality Data Statistics*. CARB. 2016.

California, area sources, which primarily consist of fugitive dust, account for the majority of directly emitted particulate matter. This includes dust from paved and unpaved roads. The CARB estimates that 85 percent of directly emitted PM_{10} (and 66 percent of directly emitted $PM_{2.5}$) is from area sources.[14] During the winter, the $PM_{2.5}$ size fraction makes up much of the total particulate matter concentrations. The major contributor to high levels of ambient $PM_{2.5}$ is the secondary formation of particulate matter caused by the reaction of NO_x and ammonium to form ammonium nitrate. CARB estimates that the secondary portion of $PM_{2.5}$ makes up about 50 percent of the annual concentrations in the Valley. The Valley also records high PM_{10} and $PM_{2.5}$ levels during the fall. During this season, both the coarse fraction (from dust) and the $PM_{2.5}$ fraction result in elevated $PM_{2.5}$ and PM_{10} concentrations. Wildfires caused high particulate matter levels over the last 3 years. Measured $PM_{2.5}$ levels exceeded federal standards on 20 to 25 days per year. Measured PM_{10} levels exceeded State standards on an estimated 41 to 58 days.

Other Pollutants

Current and past air monitoring data indicate that the Valley meets ambient air quality standards for NO_2, SO_2, and lead. Monitoring of lead, sulphates, hydrogen sulfide and vinyl chloride is not routinely conducted by CARB in the air basin.[15]

Air Quality Trends

Air quality in the Valley has improved significantly despite a natural low capacity for pollution, created by unique geography, topography, and meteorology. Emissions have been reduced at a rate similar or better than other areas in California. Since 1990, emissions of ozone precursors (i.e., NO_x and ROG) reduced by 80 percent, resulting in much fewer days where ozone standards have been exceeded.[16] Direct emissions of PM_{10} and $PM_{2.5}$ have been reduced by 10 to 13 percent.[17] As a result, the San Joaquin Valley is the first air basin that was previously classified as "serious nonattainment" under the NAAQS to come into attainment of the PM_{10} standards.

ATTAINMENT STATUS

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Valley as a whole does not meet State or federal ambient air quality standards for ground level O_3 and State standards for PM_{10} and $PM_{2.5}$. The attainment status for the Valley with respect to various pollutants of concern is described in Table 3.

Under the CAA, the U.S. EPA has classified the Air Basin as *extreme nonattainment* for the 8-hour O_3 standard. As mentioned earlier, the Air Basin has attained the NAAQS for PM_{10}. The Air Basin is designated *nonattainment* for the older 1997 $PM_{2.5}$ NAAQS. U.S. EPA recently designated the Air Basin as nonattainment for the newer 2006 24-hour $PM_{2.5}$ standard. The U.S. EPA classifies the Air Basin as *attainment* or *unclassified* for all other air pollutants, which include CO and NO_2.

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[14] *2016 Moderate Area Plan for the 2012 PM2.5 Standard*. SJVAPCD. 2016

[15] *California Air Resources Board 2018 Annual Network Plan*.

[16] *2016 Plan for the 2008 8-Hour Ozone Standard*. CARB. 2016. June.

[17] *The California Almanac of Emissions and Air Quality - 2013 Edition*. CARB. 2013.

At the state level, the Air Basin is considered *severe nonattainment* for ground level O_3 and *nonattainment* for PM_{10} and $PM_{2.5}$. In general, California ambient air quality standards are more stringent than the national ambient air quality standards. The Air Basin is required to adopt plans on a triennial basis that show progress towards meeting the State O_3 standard. The Air Basin is considered *attainment* or *unclassified* for all other pollutants.

TABLE 3 Project Area Attainment Status

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	No Designation	Severe Nonattainment
Ozone (O_3) – 8-Hour Standard	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment-Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates and Lead	No Designation	Attainment
Hydrogen Sulfide	No Designation	Unclassified
Visibility Reducing Particles	No Designation	Unclassified
Vinyl Chloride	No Designation	Attainment

REGIONAL AIR QUALITY PLANS

In response to not meeting the NAAQS, the region is required to submit attainment plans to US EPA through the State, which are referred to as the SIP. These plans are provided on SJVAPCD's website at http://valleyair.org/Air_Quality_Plans/air-quality-plans.htm.

CARB submitted the 2004 Extreme Ozone Attainment Demonstration Plan to EPA in 2004, which addressed the old 1-hour NAAQS. The region's 2007 Ozone Plan, addressing the 8-hour ozone NAAQS, was submitted to US EPA and approved in March 2012. That plan predicts attainment of the standard throughout 90 percent of the district by 2020 and the entire district by 2024. To accomplish these goals, that plan would reduce NO_x emissions by 75 percent and ROG emissions by 25 percent. A wide variety of control measures are included in these plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments. The air basin was since designated as an extreme ozone nonattainment area for the more stringent 2008 8-hour ozone NAAQS. The 2016 Plan for the 2008 8-Hour Ozone Standard was adopted by SJVAPCD on June 16, 2016. Addressing the 2008 8-hour ozone standard will pose a tremendous challenge for the Valley, as NO_X emissions will need to be reduced by 60 percent to bring the Valley into attainment of EPA's 2008 8-hour ozone standard. SJVAPCD's 2016 Ozone Plan received EPA's final approval or conditional approval of all portions of the plan in 2019. EPA found that sufficient quantified emissions reductions are identified in the plan without including unquantified emissions reductions such as those related to the "further study" of Rule 4694 that controls emissions from winery activities (fermentation and storage of wines).

On April 25, 2008, US EPA proposed to approve the 2007 PM_{10} Maintenance Plan and Request for Re-designation. The region now meets the NAAQS for PM_{10}. The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. US EPA has designated the basin as Attainment.

The SJVAPCD adopted the 2018 Plan for the 1997, 2006 and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan was approved by CARB on January 24, 2019. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable. The plan uses control measures to reduce NO_X, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of regulations for various SJVAB industries and the general public through new rules and amendments. The plan increases controls on residential wood-burning activities.

Both the ozone and $PM_{2.5}$ plans include all measures (i.e., federal, state, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. The plans described above addressing ozone also meet the state planning requirements.

SJVAPCD RULES AND REGULATIONS

The SJVAPCD has adopted rules and regulations that apply to land use projects, such as the proposed project. These are described below.

SJVAPCD Indirect Source Review Rule[18]

In 2005, the SJVAPCD adopted Rule 9510 Indirect Source Review (ISR or Rule 9510) to reduce NO_X and PM_{10} emissions from new land use development projects. The rule, which became effective March 1, 2006, is the result of state requirements outlined in the region's portion of the State Implementation Plan (SIP). Rule 9510 was amended in December 2017 (and became effective March 21, 2018) to ensure that all large development projects are subject to the rule. The SJVAPCD's SIP commitments are contained in the 2004 Extreme Ozone Attainment Demonstration Plan and the 2003 PM_{10} Plan. These plans identified the need to reduce PM_{10} and NO_X substantially to attain and maintain the ambient air-pollution standards on schedule.

New projects that would generate substantial air pollutant emissions are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees to support programs that reduce emissions. The rule requires mitigated exhaust emissions during construction based on the following levels:

- 20 percent reduction from unmitigated baseline in total NO_X exhaust emissions
- 45 percent reduction from unmitigated baseline in total PM_{10} exhaust emissions

For operational emissions, Rule 9510 requires the following reductions:

[18] Rule 9510 Indirect Source Review (ISR) (Adopted December 15, 2005; Amended December 21, 2017, but not in effect until March 21, 2018). SJVAPCD. http://www.valleyair.org/rules/currntrules/r9510-a.pdf

- 33.3 percent of the total operational NO_X emissions from unmitigated baseline
- 50 percent of the total operational PM_{10} exhaust emissions from unmitigated baseline

Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus estimated costs to cover administration of the program. In accordance with ISR, the project applicant will submit an application for approval of an Air Impact Assessment (AIA) to the SJVAPCD.

Regulation VIII – Fugitive PM_{10}

SJVAPCD controls fugitive PM_{10} through Regulation VIII (Fugitive PM_{10} Prohibitions). The purpose of this regulation is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by SJVAPCD to cover costs for reviewing plans and conducting field inspections.

SJVAPCD regulates the emissions of organic compounds (i.e., ROG) from gasoline dispensing stations through Regulation IV, Rule 4622. This rule requires the facility to install enhanced vapor recovery (EVR systems). This project would be required to install CARB-certified Phase-I and Phase-II vapor recovery equipment. A Health Risk Assessment (HRA) is required by SJVAPCD since the annual benzene emissions, a TAC, would exceed the District's TAC risk triggering levels.

Other SJVAPCD Rules

Other SJVAPCD Rules and Regulations that may be applicable to the project include, but are not limited to:

- Rule 4101 (Visible Emissions): The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere. The provisions of this rule apply to any source operation which emits or may emit air contaminants.
- Rule 4102 (Nuisance): The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.
- Rule 4601 (Architectural Coatings): The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.
- Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations): The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. Paving operations will be subject to Rule 4641.
- Rule 4692 (Commercial Charbroilers): The purpose of this rule is to reduce emissions from chain-driven charbroilers. Chain-driven charbroilers are required to be equipped and operated with a certified catalytic oxidizer control device. Underfired charbroilers are subject to reporting and registration requirements. The proposed fast-food restaurant may utilize a charbroiler, however, for the purposes of this analysis, it was assumed the restaurant would use a Flat Griddle.

The Air District is anticipated to provide a determination of applicable rules/regulations to the project when specific building, grading, etc. plans are provided to the Air District prior to initiation of construction- and operation-related activities that fall within the purview of the Air District's regulatory authority.

SENSITIVE RECEPTORS

"Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill, and the chronically ill, are likely to be located. Land uses that include sensitive receptors are residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest receptors consist of residences located across Arborwood Drive from the site, to the southeast. The closest sensitive receptors are the Modesto Christian School and Little Hearts Preschool and Childcare. Both are approximately one mile to the east of the project site.

GREENHOUSE GASES (GHGs)

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

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

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

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

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

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

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

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

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

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

SB 350 Renewable Portfolio Standards

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

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

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

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

GHG Emissions

The U.S. EPA reported that in 2017, total gross nationwide GHG emissions were 6,457 MMT. These emissions were lower than peak levels of 7,370 MMT that were emitted in 2008. Relative to 1990 levels, these emissions were CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[19] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was completed for the year 2011.[20] The Stanislaus County regional GHG emission were 6 MMT in 2005[21]. As a point of comparison, statewide emissions were about 483 MMT in 2011.

California Green Building Standards Code

The 2016 California Green Building Standards Code (CALGreen Code) went into effect on January 1, 2017, and includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The Code includes provisions to reduce water use, wastewater generation, and solid waste generation, as well as requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. The code also requires mandatory inspections of building energy systems for non-residential buildings over 10,000 square feet to ensure that they are operating at their design efficiencies. It is the intent of the CALGreen Code that buildings constructed pursuant to the Code achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards contained in Title 24. The Code also sets limits on VOCs (volatile organic compounds) and formaldehyde content of various building materials, architectural coatings, and adhesives.

San Joaquin Valley Air Pollution Control District

In August 2008, the SJVAPCD adopted the Climate Change Action Plan (CCAP). The goals of the CCAP are to establish the Air District's processes for assessing the significance of project specific GHG impacts for projects permitted by the District; assist local land use agencies, developers, and the public by identifying and quantifying GHG emission reduction measures for development

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

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

[21] ICF. 2013. Stanislaus Countywide Regional Community Greenhouse Gas Inventory. July. See https://www.stancounty.com/planning/pl/StanRST-Docs/County/STANISLAUS%20COUNTY%20GHG%20REPORT.pdf

projects, and by providing tools to streamline evaluation of project specific GHG effects; ensure that collateral emissions from GHG emission reduction projects do not adversely impact public health or environmental justice communities in the Valley; and assist Valley businesses in complying with state law related to GHG emission reduction. In particular, the CCAP directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist Air District staff, Valley businesses, land use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process. Pursuant to this directive, on December 17, 2009, SJVAPCD adopted *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA* (described below). The CCAP also directs Air District staff to investigate and develop a greenhouse gas banking program, enhance the existing emissions inventory process to include greenhouse gas emissions reporting consistent with new state requirements, and administer voluntary greenhouse gas emission reduction agreements.

SJVAPCD's Guidance for Addressing GHG Emissions Impacts under CEQA

Under its mandate to provide local agencies with assistance in complying with CEQA in climate change matters, the SJVAPCD developed its *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA.* As a general principal to be applied in determining whether a proposed project would be deemed to have a less-than-significant impact on global climate change, a project must be in compliance with an approved GHG emission reduction plan that is supported by a CEQA-compliant environmental document or be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions, consistent with GHG emission reduction targets established in ARB's Scoping Plan for AB 32 implementation. The SJVAPCD guidance is intended to streamline the process of determining if project specific GHG emissions would have a significant effect. The proposed approach relies on the use of performance-based standards and their associated pre-quantified GHG emission reduction effectiveness (Best Performance Standards, or BPS). Establishing BPS is intended to help project proponents, lead agencies, and the public by proactively identifying effective, feasible mitigation measures. Emission reductions achieved through implementation of BPS would be pre-quantified, thus reducing the need for project specific quantification of GHG emissions. For land use development projects, BPS would include emissions reduction credits for such project features as bicycle racks, pedestrian access to public transit, and so forth. However, these features do not provide meaningful reductions from gasoline dispensing facilities. Projects implementing a sufficient level of BPS would be determined to have a less-than-significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. For all projects for which the lead agency has determined that an Environmental Impact Report is required, quantification of GHG emissions would be required whether or not the project incorporates BPS. SJVAPCD's guidance document does not constitute a rule or regulation but is intended for use by other agencies in their assessment of the significance of project impacts to global climate change under CEQA.

IMPACT ANALYSIS

STANDARDS OF SIGNIFICANCE

Appendix G, of the California Environmental Quality Act (CEQA) Guidelines (Environmental Checklist) contains a list of project effects that may be considered significant. The project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) affecting a substantial number of people;
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015), also known as the GAMAQI. The following thresholds of significance, obtained from the SJVAPCD's GAMAQI, are used to determine whether a proposed project would result in a significant air quality impact:

1) <u>Construction Emissions of PM</u>. Construction projects are required to comply with Regulation VIII as listed in the SJVAPCD. However, the size of the project and the proximity to sensitive receptors may warrant additional measures.

2) <u>Criteria Air Pollutant Emissions</u>. SJVAPCD current adopted thresholds of significance for criteria pollutant emissions and their application is presented in Table 4. These thresholds address both construction and operational emissions. Note that the District treats permitted equipment and activities separately. The project is not considered a source of SO_X emissions and would have relatively low CO emissions.

3) <u>Ambient Air Quality</u>. Emissions that are predicted to cause or contribute to a violation of an ambient air quality would be considered a significant impact. SJVAPCD recommends that dispersion modeling be conducted for construction or operation when on-site emissions exceed 100 pounds per day after implementation of all mitigation measures.

4) <u>Local CO Concentrations</u>. Traffic emissions associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the ambient air quality standards.

5) <u>Toxic Air Contaminants or Hazardous Air Pollutants</u>. Exposure to HAPs or TACs would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 20 in 1 million or would result in a Hazard Index greater than 1 for non-cancer health effects.

6) Odors. Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors through development of a new odor source or placement of receptors near an existing odor source.

7) Greenhouse Gases (GHGs). In SJVAPCD's *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects Under CEQA*, the District establishes a requirement that land use development projects demonstrate a 29 percent reduction in GHG emissions from Business-As-Usual (BAU).

8) With respect to cumulative air quality impacts, the GAMAQI provides that any proposed project that would individually have a significant air quality impact (i.e., exceed significance thresholds for criteria pollutants ROG, NOx, or PM_{10}) would also be considered to have a significant cumulative impact. In cases where project emissions are all below the applicable significance thresholds, a project may still contribute to a significant cumulative impact if there are other projects nearby whose emissions would combine with project emissions to result in an exceedance of one or more significance thresholds for criteria pollutants.

TABLE 4 SJVAPCD Air Quality Thresholds of Significance – Criteria Pollutant Emission Levels in Tons Per Year

Pollutant/Precursor	Construction Emissions	Operational Emissions: Permitted Equipment and Activities	Operational Emissions: Non-Permitted Equipment and Activities
Carbon Monoxide (CO)	100	100	100
Nitrogen Oxides (NOx)	10	10	10
Reactive Organic Gases (ROG)	10	10	10
Sulfur Dioxide (SOx)	27	27	27
Particulate Matter – PM_{10}	15	15	15
Particulate Matter – $PM_{2.5}$	15	15	15

Source: San Joaquin Valley Air Pollution Control District, GAMAQI, Page 80, Table 2 or website at http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf.

AIR QUALITY IMPACTS

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to the proposed project operation. During construction, the proposed project would affect local particulate concentrations primarily due to fugitive dust sources and contribute to ozone and PM_{10}/$PM_{2.5}$ levels due to exhaust emissions. Over the long-term, the proposed project would result in an increase in emissions of particulate matter from commercial cooking operations and an increase in ozone precursors such as total organic gases (TOG), reactive organic gases (ROG), and NO_x, primarily due to increased motor vehicle trips (employee trips, site deliveries, and onsite maintenance activities).

Impact 1: Construction Dust. Construction activity involves a high potential for the emission of fugitive particulate matter emissions that would affect local air quality. This would be *less-than-significant* with implementation of Regulation VIII.

Construction activities would temporarily affect local air quality, causing a temporary increase in particulate dust and other pollutants. Dust emission during periods of construction would increase particulate concentrations at neighboring properties. This impact is potentially significant, but normally it can be mitigated.

The Project construction activities are anticipated to take place over an approximate 13-month period beginning in Fall 2021 and concluding in Fall 2022. Site preparation and disturbance (e.g., vehicle travel on exposed areas) would likely result in the greatest emissions of dust and $PM_{10}/PM_{2.5}$. Windy conditions during construction could cause substantial emissions of $PM_{10}/PM_{2.5}$.

The SJVAPCD's GAMAQI, emphasizes implementation of effective and comprehensive control measures. SJVAPCD adopted a set of PM_{10} fugitive dust rules collectively called Regulation VIII. This regulation essentially prohibits the emissions of visible dust (limited to 20-percent opacity) and requires that disturbed areas or soils be stabilized. Compliance with Regulation VIII during the construction phase of the proposed project would be required. Prior to construction of each project phase, the applicant would be required to submit a dust control plan that meets the regulation requirements. These plans are reviewed by SJVAPCD and construction cannot begin until District approval is obtained. The provisions of Regulation VIII and its constituent rules pertaining to construction activities generally require:

- Effective dust suppression (e.g., watering) for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities.
- Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days.
- Control of fugitive dust from on-site unpaved roads and off-site unpaved access roads.
- Removal of accumulations of mud or dirt at the end of the workday or once every 24 hours from public paved roads, shoulders, and access ways adjacent to the site.
- Cease outdoor construction activities that disturb soils during periods with high winds.
- Record keeping for each day dust control measures are implemented.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Landscape or replant vegetation in disturbed areas as quickly as possible.
- Prevent the tracking of dirt on public roadways. Limit access to the construction sites, so tracking of mud or dirt on to public roadways can be prevented. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Suspend grading activity when winds (instantaneous gusts) exceed 25 mph or dust clouds cannot be prevented from extending beyond the site.

Anyone who prepares or implements a Dust Control Plan must attend a training course conducted by the District. Construction sites are subject to SJVAPCD inspections under this regulation. Compliance with Regulation VIII, including the effective implementation of a Dust Control Plan that has been reviewed and approved by the SJVAPCD, would reduce dust and PM_{10} emissions to a *less-than-significant* level.

Impact 2: Construction Emissions. Equipment and vehicle trips associated with construction would emit ozone precursors (i.e., ROG and NO_X) and particulate matter air pollutants on a temporary basis. Construction emissions would be below the GAMAQI significance threshold. This would be a *less-than-significant* impact.

Construction equipment exhaust effects air quality both locally and regionally. Emissions of DPM, a TAC, can affect local air quality. This impact is discussed under Impact 5. Emissions of air pollutants that could affect regional air quality were addressed by modeling emissions using the California Emissions Estimator Model (CalEEMod 2016.3.2 model) with project construction information and comparing them to the SJVAPCD significance thresholds. CalEEMod was developed by the South Coast Air Quality Management District (SCAQMD) with input from the other California Air Districts. SJVAPCD recommends the use of this model for construction and operational analysis of land use development projects. The model predicts emissions of ROG and NO_x and particulate matter (i.e., PM_{10} and $PM_{2.5}$).

The construction build-out scenario was developed based on the default assumptions assigned by CalEEMod for construction of the project as described in Table 5. The emissions computed by CalEEMod for this assessment address use of construction equipment, worker vehicle travel, on-site vehicle and truck use, and off-site truck travel by vendors or equipment/material deliveries. Both criteria air pollutant exhaust and fugitive dust (i.e., PM_{10} and $PM_{2.5}$) were computed by CalEEMod. Note that the unmitigated CalEEMod modeling does not include the effects of SJVAPCD Regulation VIII that would substantially reduce fugitive PM_{10} and $PM_{2.5}$ emissions. *Attachment 1* includes the CalEEMod modeling outputs for construction and operational emissions.

TABLE 5 CalEEMod Inputs

Land Uses	Size	Metric	Lot Acreage
Convenience Market with Gas Pumps	4.5	1,000 sf	2.04
Fast Food Restaurant with Drive-Thru	3.25	1,000 sf	0.0
Retail (Strip Mall Type)	2.31	1,000 sf	0.0
Parking Lot	34	Spaces	0.0
Mini Storage (Unrefrigerated Warehouse-No Rail)	62.34	1,000 sf	3.62
Other Asphalt Surfaces	157.1	1,000 sf	0.0

Construction trip emissions were estimated using CalEEMod trip quantities, CalEEMod trip lengths, and emissions factors from CARB's EMission FACtors 2017 (EMFAC2017) model. The latest version of the CalEEMod model is based on the older version of the CARB's EMFAC2014 motor vehicle emission factor model and was replaced by the EMFAC2017 model. However, CalEEMod has not been updated to include EMFAC2017. Therefore, construction traffic information from CalEEMod was combined with EMFAC2017 motor vehicle emissions factors to estimate construction site trip emissions.

Unmitigated and uncontrolled emissions from all phases of construction are reported in Table 6. The project would be constructed within a 13-month period over two calendar years (2021 and 2022). Therefore, both the calendar year and total project emissions are compared to the significance thresholds in Table 6. As shown, unmitigated construction emissions would not exceed the applicable SJVAPCD thresholds. Total PM_{10} emissions include both exhaust emissions and fugitive dust.

The SJVAPCD Indirect Source Review Rule (Rule 9510) applies to construction of the proposed Project. Regardless of whether a project's construction emissions of regional pollutants would exceed the Air District's significance thresholds for each pollutant, the project is still required to comply with Rule 9510, to ensure that the project contributes its fair share of emissions reductions to achieve the basin-wide reduction targets established in the Air District's Ozone and PM attainment plans. Rule 9510 requires that the project reduce uncontrolled construction exhaust emissions by 20 percent for NO_x and 45 percent for PM_{10} from calculated unmitigated levels. The basis for the reductions is use of the CalEEMod emissions for statewide construction fleets. Use of newer equipment could result in substantially lower emissions. SJVAPCD encourages reductions through on-site mitigation measures. (Note: The use of the term "mitigation" under Rule 9510 does not refer to mitigation of impacts under CEQA (i.e., the ISR emission reduction percentages are required without regard to whether the CEQA emissions thresholds are exceeded or not.) Fees to purchase or sponsor off-site reductions through SJVAPCD apply when on-site mitigation measures do not achieve the required percentage of emissions reduction. Using less-polluting construction equipment, such as newer equipment or retrofitting older equipment reduces construction emissions on-site. A combination of on-site and off-site measures can be implemented to meet the overall emission reduction requirements. The emissions reported in Table 6 do not include the reductions required by Rule 9510.

TABLE 6 Uncontrolled Annual Construction Emissions in Tons per Year *

Construction Year	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
2021	0.15	1.43	1.10	0.37	0.21
2022	0.73	1.81	2.06	0.22	0.10
TOTAL	0.88	3.24	3.16	0.59	0.31
Significance thresholds	10	10	100	15	15
Exceed Threshold?	No	No	No	No	No

* Values reported for PM_{10} and $PM_{2.5}$ include fugitive dust and diesel exhaust emissions combined. Fugitive dust emissions do not include the effect of measures implemented under Regulation VIII or required by the Stanislaus County.

Mitigation Measure AQ-1: All off-road diesel construction equipment greater than 25 horsepower and operating at the site for more than 20 hours shall at a minimum meet U.S. EPA Tier 3 engine standards with Level 3 particulate filtration. Use of equipment with U.S. EPA Tier 4 engine standards would meet this requirement. Optionally, the applicant could develop and implement a plan that would achieve a 44-percent reduction in on- and near-site DPM emissions.

Effectiveness of Mitigation

From a CEQA perspective, mitigation is not required for this impact, but it will be required in accordance with SJVAPCD's Indirect Source Review Rule (Rule 9510) and this measure would reduce emissions from construction. Implementation of Mitigation Measure AQ-1 would reduce NO_X emissions by 30 percent and PM_{10} emissions by over 70 percent. It was previously noted that under Rule 9510 (ISR), the project would be responsible for reducing construction PM_{10} emissions by 45 percent, and NO_X emissions by 20 percent. These reductions are required regardless of whether the project emissions exceed the CEQA significance thresholds. This CEQA analysis does not account for ISR reductions, as they are treated separately by the SJVAPCD.

However, it appears that the reductions in emissions that would result from implementation of *Mitigation Measure AQ-1* would meet the ISR emissions reduction requirements. The final emissions calculations for the project will be performed in an Air Impact Assessment (AIA), as required under ISR to determine the specific ISR reductions (i.e., in tons) that will be required for the project. In addition, application of the required PM_{10} fugitive dust rules (i.e., District Regulation VIII) would reduce fugitive dust emissions from construction substantially.

Impact 3: Operational Emissions. Proposed Project operational emissions, generated primarily by traffic and evaporation of gasoline vapors, would increase emissions of ozone precursors and particulate matter, but they would be below GAMAQI significance thresholds. These increases would be *less-than-significant*.

The CalEEMod model was also used to estimate annual emissions from operation of the Project. The first full year that the project could be operational was assumed to be 2023 and was used as the analysis year. Emissions were modeled and evaluated two ways: (1) emissions from land use (e.g., project traffic generation) and (2) emissions from sources subject to SJVAPCD permitting for stationary sources.

Emissions from Sources Not Subject to Specific SJVAPCD Permits

The effect of the project operations on regional air quality was evaluated by quantification of emissions for operating scenarios in 2023 and comparing said emissions to the SJVAPCD thresholds of significance provided in Table 4. As described previously, the CalEEMod model was also used to quantify annual emissions from the project once construction is completed and the project is operational. In addition to emissions from transportation sources, the CalEEMod model also predicts emissions from area sources, such as natural gas usage, consumer products, and landscape equipment. Area sources include ROG emissions from use of consumer products, architectural coatings, and parking lot marking. ROG emissions from GDF operations and charbroiling from the fast-food restaurant are permitted by SJVAPCD and are addressed separately below.

Inputs to the CalEEMod model for air pollutant modeling are based on EMFAC2017 default conditions for Stanislaus County and adjusted trip generation rates to match the Institute of Transportation Engineers (ITE) rates used in the project's traffic impact analysis[22].

The annual area source emissions associated with the project are shown in Table 7. The project emissions would not exceed the applicable significance thresholds for ROG, NO_x, or PM_{10}.

[22] *Salida Gas Station & C-Store "Traffic Impact Analysis"*, Pinnacle Traffic Engineering, March 9, 2020.

TABLE 7 Annual Project Operational Emissions in Tons Per Year

Project	ROG	NO_x	CO	PM_{10}[1]	$PM_{2.5}$[1]
Operations Area Sources	2.48	2.66	9.15	1.29	0.36
Significance Thresholds	*10*	*10*	*100*[2]	*15*	*15*
Permitted Sources					
GDF	*0.81*	---	---	---	---
Charbroiling	*<0.01*	---	---	*0.05*	*0.04*
Significance Thresholds	*10*	*10*	*100*[2]	*15*	*15*
Exceed Thresholds?	No	No	No	No	No

[1]Includes both exhaust and fugitive dust emissions.

[2]Significant if emissions exceed 100 tons per year and then contribute to violation of the NAAQS/CAAQS

As previously mentioned, the project is subject to SJVAPCD's ISR Rule 9510 to reduce NO_x and PM_{10} emissions. Although the project's operational emissions of regional pollutants would not exceed the District's significance thresholds for each pollutant, the project is still required to comply with Rule 9510, to ensure that the project contributes its share of emissions reductions to achieve the basin-wide reduction targets established in the Air District's Ozone and PM_{10} attainment plans. Under Rule 9510, the project would be required to reduce operational NO_x emissions by 33 percent and operational PM_{10} emissions by 50 percent over 10 years. The emissions in Table 7 do not reflect any reductions that may be required under ISR.

<u>Emissions from Sources Subject to SJVAPCD Permits</u>

Fast Food Charbroiling

Both chain-driven (CD) and underfired (UF) char broilers are regulated by the SJVAPCD through Rule 4692 (Commercial Char broilers). The project will include a 3,250 sf fast food restaurant with a drive thru window that will utilize either a char broiler or flat griddle to cook meat. Emissions from the restaurant were estimated using the district default activity values provided in Section 2.3.4.2 of SJVAPCD's *Guidance for Air Dispersion Modeling*. Facility Type 2 (Flat Griddle) was selected given a specific restaurant has not been identified for the project location and Facility Type 2 provides the most flexibility. It assumes the restaurant will cook hamburger, poultry without skin, and pork.

Criteria pollutant emissions factors in pounds of pollutant per ton of meat cooked were obtained from the SJVAPCD's *2006 Area Source Emissions Inventory Methodology: 690 – Commercial Cooking Operations*, which used the emissions factors from the U.S. EPA's 2002 National Emissions Inventory (NEI). Emissions factors were provided for PM_{10}, $PM_{2.5}$, and VOCs for cooking of hamburger, poultry, and pork. The annual meat cooking emissions estimates for the fast-food restaurant are provided in Table 7. Emissions from meat cooking at the proposed fast-food restaurant would not exceed the SJVAPCD's applicable significance thresholds for permitted stationary sources.

Gasoline Dispensing Facilities

Gasoline dispensing facilities (GDFs) are regulated by the SJVAPCD. The project includes one 12-position GDF and will require a permit from the Air District (unlike the other "unpermitted" operational area sources). Emissions attributed to operation of the GDF were estimated based on annual throughput (i.e., fuel received and dispensed) anticipated for the facility. The project estimates a daily throughput of approximately 4,340 gallons, which equates to 1.58 million gallons per year.[23] GDFs are a source of evaporative ROG emissions and with sources that include storage tank loading, storage tank venting, refueling of vehicles, and fuel spillage. Table 7 presents the evaporative ROG emissions associated with operation of the proposed GDF. ROG emissions from the proposed GDF would not exceed the SJVAPCD's applicable significance thresholds for permitted stationary sources. Note that SJVAPCD emissions thresholds are applied separately for permitted and non-permitted (i.e., area source) emissions.

Emergency Backup Generators

Another potential source of operational emissions is stationary equipment such as diesel engines used to power emergency back-up generators. Typically, commercial retail projects do not include stationary equipment, and, other than the proposed GDF, no other stationary source equipment has been proposed as part of the project. There is, however, the possibility that the facility could include sources of combustion emissions, such as a small standby power generator operated by diesel or natural gas. These stationary sources would be subject to SJVAPCD rules and regulations and could require permits from SJVAPCD. The SJVAPCD's permitting process requires the purchase of emission reduction credits (ERC) for any criteria pollutant exceeding the SJVAPCD's New Source Review (NSR) offset requirements. NSR offset requirements provide the basis for the SJVAPCD CEQA thresholds of significance. As such, sources of stationary air pollutant emissions will be required to comply with all applicable SJVAPCD regulations thereby resulting in a less than significant air quality impact.

Mitigation Measure for Impact 3: None Required

Impact 4: Carbon monoxide concentrations from operational traffic. Mobile source emissions generated by project would increase carbon monoxide concentrations at intersections in the project vicinity. However, resulting concentrations would be below ambient air quality standards, and therefore, considered a *less-than-significant* impact.

Project traffic would slightly increase concentrations of CO along roadways providing access to the project. Carbon monoxide is a localized air pollutant, where highest concentrations are found very near sources. The major source of CO is vehicle traffic. Elevated concentrations, therefore, are usually found near areas of high traffic volume and congestion.

Emissions and ambient concentrations of CO have decreased greatly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and reformulated motor vehicle fuels. No exceedances of the State or federal CO standards have been recorded at any of San Joaquin Valley's monitoring stations in the past 15 years. The San Joaquin Valley Air Basin has attained the State and National CO standards.

[23] Per email correspondence from Roman Acosta, J.B. Anderson Land Using Planning. Dated 11-12-2020 and February 1, 2021. 220,000 gallons per month reduced by 40%.

Localized CO concentrations are addressed through the SJVAPCD screening method that can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. A project can be said to have no potential to create a CO violation or create a localized hotspot if either of the following conditions are not met: level of service (LOS) on one or more streets or intersections would be reduced to LOS E or F; or the project would substantially worsen an already LOS F street or intersection within the project vicinity. As the proposed project will not do either of these[24], the potential impact on CO would be considered *less-than-significant*.

Mitigation Measure for Impact 4: None Required

Impact 5: Exposure of Sensitive Receptors to Toxic Air Contaminants. Construction activity, delivery trucks, vehicle traffic, evaporative emissions from the GDF, and emissions from meat cooking would expose nearby receptors to toxic air contaminants. Based on the levels of construction toxic air contaminants and the distance to the nearest sensitive receptor, a health risk assessment to assess the potential cancer risk was conducted and found would be *less-than-significant with Mitigation.*

To evaluate the exposure of sensitive receptors to emissions of Toxic Air Contaminants (TACs) from the project, a health risk assessment of both project construction activities and emissions from project operation was conducted. The health risk assessment predicts lifetime cancer risk and non-cancer risks. The health risk assessment involves prediction of emissions from the various sources of TACs, dispersion modeling using historical meteorological data and calculation of health risks using SJVAPCD recommended risk assessment methods for infant, child, and adult exposures for residential receptors, and for off-site worker exposure. These methods are described in *Attachment 2*.

Construction Health Risk Impacts

Construction activity is anticipated to include site preparation and grading, trenching/excavation, building construction, paving and some application of architectural coatings. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a TAC. This health risk assessment focused on modeling on-site construction activity using emissions computed using CalEEMod, as described under Impact 2. Construction of the project is expected to occur over a 13-month period assumed to start in in the Fall of 2021 and end in 2022.

Construction Emissions

The CalEEMod model provided unmitigated total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles), with total DPM exhaust emissions of 0.07 tons (135 pounds) in 2021 and 0.08 tons (165 pounds) in 2022. The construction DPM emissions include on-road emissions resulting from haul truck travel during grading activities, worker travel, and vendor deliveries during building construction, with overall trip lengths of 1.0 mile to simulate

[24] Refer to *Salida Gas Station & C-Store "Traffic Impact Analysis"*, Pinnacle Traffic Engineering, March 9, 2020 for intersection LOS and traffic impacts.

travel on and near the site. A summary of the on-site CalEEMod model output with emission calculations are provided in *Attachment 1*.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to model concentrations of DPM at existing sensitive receptors in the vicinity of the project site. The AERMOD modeling utilized an area source to represent the location of on-site construction activities. Emissions were distributed evenly across the area source. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (20 feet) was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. Emissions from on-road truck travel at and near the project site were included in the area source. Emissions were modeled as occurring daily between 7 am - 4 pm, when the majority of construction activity would occur. Figure 2 shows the project site and nearby sensitive receptor locations (residential and worker[25]) where health impacts were evaluated.

Figure 2 – Project Site and Sensitive Receptor Locations

The model used a 5-year data set (2013-2017) of hourly meteorological data from Modesto City-County Airport prepared for use with the AERMOD model by the SJVAPCD. The airport is about

[25] No worker receptors were identified near the project site.

10 miles northwest of the project site. DPM concentrations were calculated at nearby sensitive receptors using a receptor height of 1.5 meters (4.9 feet). Flat terrain was used for the modeling since there is negligible elevation difference between the source and receptors and the receptors with the highest modeled concentrations are close to the project site. Rural dispersion conditions were used in the modeling given the area surrounding the project site is predominantly rural.

Construction Cancer Risk and Hazards

The maximum-modeled unmitigated (uncontrolled) annual DPM concentration occurred at a residential receptor southeast of the project site. Increased cancer risks were calculated using the modeled annual concentrations and SJVAPCD recommended risk assessment methods for infant, child, and adult exposures for residential receptors. No off-site worker locations were identified near the project. Table 8 reports the health risk impacts associated with construction activities at the various sensitive receptor types near (i.e., 1,000 ft) the project and *Attachment 3* provides the analysis. Results of this assessment indicate that, with project construction, the maximum increased infant cancer risk at the maximally exposed residential individual location would be 40.7 in one million and the maximum residential adult incremental cancer risk would be 1.0 in one million. The predicted increased cancer risk for a residential exposure (assuming infants are present) would be greater than the SJVAPCD significance threshold of 20 in one million. With *Mitigation Measure AQ-1* the mitigated increased project residential cancer risk would not exceed the cancer risk significance threshold.

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. The chronic inhalation reference exposure level (REL) for DPM is 5 μg/m^3. The Hazard Index (HI), which is the ratio of the annual DPM concentration to the REL, is less than 0.1 at all receptor locations. This HI is much lower than the SJVAPCD significance criterion of a HI greater than 1.

TABLE 8. Construction Period Health Risk Impacts

Receptor	Health Risk Impact	
	Increased Cancer Risk (per million)	**Hazard Index**
Residential – infant exposure		
Unmitigated	**40.7**	0.03
Mitigated	6.4	<0.01
Residential – adult		
Unmitigated	1.0	0.03
Mitigated	0.2	<0.01
Off-Site Worker*		
Unmitigated	NA	NA
Mitigated	NA	NA
SJVAPCD Threshold	*>20.0*	>1.0
Exceed Threshold? Unmitigated/Mitigated	***Yes****/No*	*No/No*

*NA = no workplaces within 1,000 ft of the project site were identified.

Operation Health Risk Impacts

Local traffic generated by the project along with emissions from the gasoline dispensing facility and the fast-food restaurant could lead to operational health risk impacts. Emissions from diesel fuel are expected to be minimal, as the GDF will not serve heavy duty diesel vehicles. Specific sources of emissions from the GDF include customer traffic traveling to and from the project site, fuel delivery truck traffic traveling to and from the site, fuel delivery truck idling while at the site, and evaporative emissions of fuel from transfer and storage of gasoline (i.e., above-ground tank filling, tank breathing and vehicle fueling and spillage). Emissions sources from the fast-food restaurant include vehicle emissions from operation of the drive-thru window and emissions from meat cooking. Impacts from each of these sources are addressed. These sources are assumed to be operational well into the future (i.e., 70 years). The year 2022 was used as the year of analysis for generating vehicle emission rates. Vehicle emission rates are anticipated to decrease in the future due to improvements in exhaust systems and turnover of the fleet from older, more polluting vehicles to newer cleaner vehicles.

Project Traffic-Related Emissions

Daily trip generation was calculated in the initial traffic impact analysis report to be 4,612 total vehicle trips per day based on the three land use types planned at the site (i.e., Service Station with Convenience Market [20 vehicle fueling positions], Sit Down Restaurant, and Retail).[26] This estimate was revised to include the mini storage facility, the reduction in vehicle fueling positions (from 20 to 12), and the change from a sit-down restaurant to a fast food restaurant with a drive thru window.[27] The result was a nine percent decrease in trip generation. However, for the purposes of estimating traffic emissions for this health risk assessment, trips to and from the site remained at the original, higher level.

Additionally, it was estimated that about 15 percent of these trips would be pass-by trips. This means the vehicles are already traveling by or near the project site. However, to be conservative, this analysis assumes these trips are all new to the project site. No adjustment was made for pass-by trips in this health risk analysis.

The distribution of customer vehicle trips on the local roads (Pirrone Road and Arborwood Drive) and station access was based on the initial traffic report for the project.[28] The number of fuel delivery trucks visiting that station were estimated to be 156 trucks per year based on a total station fuel use of 1.58 million gallons per year. All fuel delivery trucks were assumed to be heavy duty diesel fueled trucks (HDT). These trucks were assumed to arrive at the station via Arborwood Drive, travel around the building to the above ground fuel tank storage area, unload their fuel, and then depart the station via Pirrone Road. The number of customer heavy duty diesel trucks accessing the station was estimated to be zero (0) as the GDF will not serve heavy duty diesel trucks. Fuel delivery trucks were assumed to travel at a speed of 25 mph off site and 5 mph while in the station area.

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[26] *Salida Gas Station & C-Store "Traffic Impact Analysis"*, Pinnacle Traffic Engineering, March 9, 2020.

[27] *Pirrone Retail Project (PLN2019-0079); Stanislaus County, California Supplemental Trip Generation Analysis*, Memo, Pinnacle Traffic Engineering, January 22, 2021.

[28] *Salida Gas Station & C-Store "Traffic Impact Analysis"*, Pinnacle Traffic Engineering, March 9, 2020.

The primary TAC of concern from the fuel delivery trucks is DPM, while for other customer vehicles the TACs of concern are MSATs, as previously described. The primary TAC of concern from meat cooking operations at the fast-food restaurant is naphthalene[29]. DPM and MSAT emissions for customer vehicles were calculated using emission factors from the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017[30], and the increased local project-related traffic described above. Vehicle emission processes modeled include running/idle exhaust, running evaporative losses for organic MSATs, tire and brake wear, and fugitive road dust. Vehicle emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions estimates. Inputs to the model include region (i.e., Stanislaus County), type of road (for road dust calculation purposes), traffic mix (assigned by CT-EMFAC2017 for the county), year of analysis (i.e., 2022), and season (Annual). Year 2022 emissions were conservatively assumed as being representative of future conditions over the period that cancer risks are evaluated (70 years), since, as discussed above, overall vehicle emissions will decrease in the future.

Emission factors from the CT-EMFAC2017 model for travel speeds of 35 mph, 40 mph, and 45 mph were used in calculating project vehicle emissions while traveling off-site to represent the travel speeds identified by the traffic impact study for the adjacent local roadways. Emission factors for a travel speed of 5 mph were used in calculating project vehicle emissions while traveling and/or idling on-site. Emissions from the GDF and convenience market were assumed to occur 24-hours per day, 365 days per year. While emissions from the fast-foot restaurant were assumed to occur 18-hours per day, 365 days per year. MSAT emission rates used in the analysis are provided in *Attachment 4*.

Idling Emissions - Fuel Delivery Trucks

DPM emissions due to fuel delivery trucks idling at the fuel tanks were computed by converting 5 mile-per hour emissions rates into hourly emissions using the 5-mph DPM emission factor from the CT-EMFAC2017 model for a 100 percent truck fleet. All fuel delivery trucks were assumed to idle for a total of 15 minutes while at the station. Annual emissions assumed similar operating conditions 365 days per year. The analysis of idling emissions is included in *Attachment 4.*

Fueling Emissions

The transfer and storage of gasoline results in emissions of VOCs and organic TAC compounds including benzene, ethyl benzene, toluene, and xylenes (BETX). Emissions of VOCs and BETX were computed based on projected annual throughput of gasoline (i.e., 1.58 million gallons per year) using a Gasoline Dispensing Operations VOC Calculator spreadsheet provided by the SJVAPCD.[31] The emission are based on annual gasoline throughput and account for emissions from fuel storage tank loading and pressure driven (breathing) losses, motor vehicle refueling, and fuel spillage while refueling. A*ttachment 4* includes emissions calculation of VOC and BTEX emissions from gasoline fueling, storage, and transfer.

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[29] TAC emissions rates obtained from Section 2.3.4.2 of the *Guidance for Air Dispersion Modeling*, SJVAPCD.

[30] California Department of Transportation. 2019. CT-EMFAC2017 User Guide. January.

[31] San Joaquin Valley Air Pollution Control District. 2020. Email from Kyle Melching of the SJVAPCD and James Reyff of Illingworth & Rodkin, Inc. on February 6, 2020. This methodology was subsequently confirmed based on a phone conversation between Eric Mclaughlin of SJVAPCD and Jay Witt of Illingworth & Rodkin, Inc. on November 9, 2020.

Fast-Food Restaurant Emissions

The proposed fast-food restaurant would generate TACs from two sources: the cooking of meat and the operation of a drive-thru window. The SJVAPCD's *Guidance for Air Dispersion Modeling* lists one TAC from meat cooking, naphthalene, while operation of the drive-thru window will generate MSATs from both traveling through and idling at the window queue. Naphthalene emissions from meat cooking were estimated using the emissions factors provided by SJVAPCD guidance. MSAT emissions from the dive thru queue were estimated as described above for traffic related emissions. Daily vehicles utilizing the drive thru window were estimated by dividing the daily trips generated by the restaurant (1,530) in half (i.e., two trips per vehicle) and assuming two-thirds of restaurant patrons would utilize the drive thru option. Each vehicle was assumed to spend 5 minutes idling in the window queue.

Dispersion Modeling

The US EPA AERMOD dispersion model was used to predict DPM and other TAC concentrations at existing sensitive receptors (residences) in the vicinity of the project site. The AERMOD dispersion model is a SJVAPCD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[32] The modeling used the same meteorological data from the Modesto City-County Airport as previously discussed for the construction health risk modeling. TAC concentrations from on-site and off-site (i.e., roadway) emission sources were calculated at nearby residences using a receptor height of 1.5 meters (4.9 feet). Since there is negligible elevation difference between the modeled sources and receptors, flat terrain was used for the modeling.

On-site emission sources include customer vehicles, fuel delivery trucks, fuel delivery truck idling, gas pump fueling and spillage, the vent stack for fuel storage tank emissions, and operation of the fast-food restaurant (meat cooking and drive thru queue). Off-site emission sources include customer and fuel delivery vehicle travel routes. The modeled emission sources and receptors where TAC concentrations were calculated are shown in Figure 3. Truck emissions were modeled as line-volume sources (a series of volume sources along a line) representing off-site and on-site travel routes depicted in Figure 3, while customer vehicle travel emissions and emissions from the drive thru queue were modeled as line-area sources (a series of area sources along a line). Vehicle volume source modeling parameters were based on EPA[33] and SJVAPCD[34] recommended roadway volume and area source parameters.

BETX emissions from refueling and spillage in the gas dispensing area at the fuel station were modeled using volume sources and parameters recommended by the SJVAPCD. Three volume sources with side lengths of 6.5 meters and a 1-meter height were used for vehicle refueling emissions and three volume sources with side lengths of 6.5 meters and a 0-meter height were used for spillage emissions. Emissions from the fuel storage tank, fuel truck idling, and meat cooking

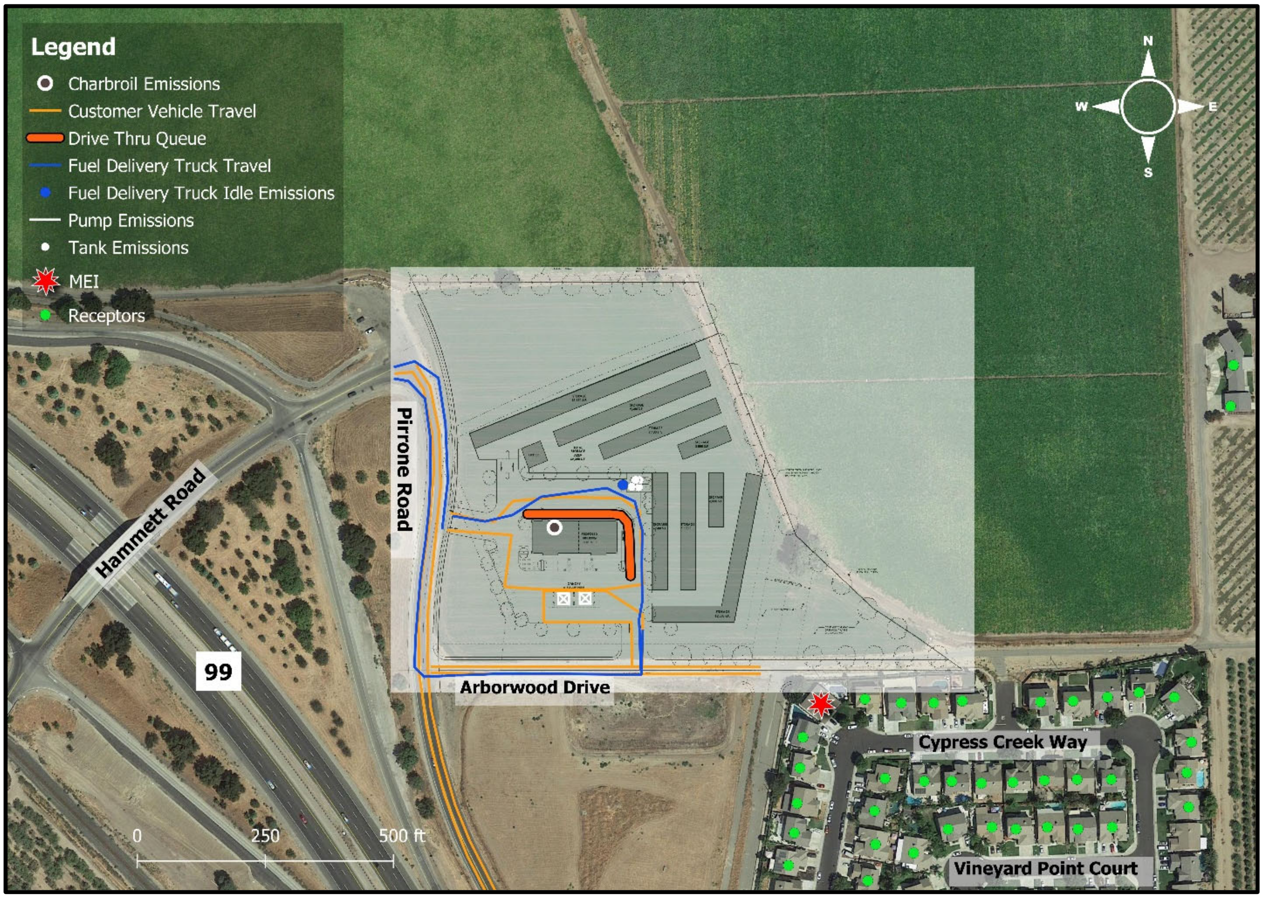
[32] San Joaquin Valley Air Pollution Control District, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0

[33] US EPA. 2015. Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas. November 2015

[34] San Joaquin Valley Air Pollution Control District. 2018. SJVAPCD Memo FYI – 366 Estimating and Modeling Emissions from Truck Travel and Idling. May 24, 2018.

were modeled as point sources using parameters recommended by the SJVAPCD[35]. Details on the emission calculations and dispersion modeling information for these sources are provided in *Attachment 5*.

FIGURE 3. Project Site, Sensitive Receptor Locations, and Modeled Emission Sources



Cancer Risk and Hazards

Using the maximum modeled TAC concentrations, total increased cancer risks from project construction and operation were computed using the most recent methods recommended by SJVAPCD and OEHHA that include nearly continuous exposures with adjustments for infants and children. Based on modeled TAC concentrations, cancer risks were calculated for 70-year residential exposures assuming two partial years of emissions from construction (i.e., 2021 and 2022) and constant operational emissions starting in late 2022/early 2023.

Table 9 shows the increased health risk impacts attributable to operation of the project only. *Attachment 5* provides the analysis. Operation of the project includes the effects of project generated traffic (on-site and traveling nearby), fuel deliveries, evaporative emissions from the GDF, and emissions from the fast-food restaurant (i.e., meat cooking and drive thru queue).

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[35] San Joaquin Valley Air Pollution Control District, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0

TABLE 9. Project Operation Maximum Health Risk Impacts

Receptor	Increased Cancer Risk (per million)	Acute Hazard Index	Chronic Hazard Index
Residential	4.6	0.09	<0.01
Off-Site Worker*	NA	NA	NA
SJVAPCD Threshold	*>20.0*	>1.0	>1.0
Exceed Threshold?	*No*	*No*	*No*

*NA = no workplaces within 1,000 ft of the project site were identified.

Table 10 shows the increased cancer risks and acute or chronic hazards associated with the project construction and operation at the locations of residential exposures. The maximum excess cancer risk associated with mitigated project construction and operation would be 9.5 chances per million. The predicted Hazard Index is well below the significance threshold.

Table 10. Project Construction and Operation Maximum Health Risk Impacts

Receptor	Increased Cancer Risk (per million)	Acute Hazard Index	Chronic Hazard Index
Residential With Unmitigated Construction Mitigated	 **44.98** 9.46	 0.09 0.09	 0.03 <0.01
SJVAPCD Threshold	*>20.0*	>1.0	>1.0
Exceed Threshold? Unmitigated/Mitigated	 ***Yes/****No*	 *No/No*	 *No/No*

Mitigation Measure for Impact 5: Implement **Mitigation Measure AQ-1**. All off-road diesel construction equipment greater than 25 horsepower and operating at the site for more than 20 hours shall at a minimum meet U.S. EPA Tier 3 engine standards with Level 3 particulate filtration. Use of equipment with U.S. EPA Tier 4 engine standards would meet this requirement. Optionally, the applicant could develop and implement a plan that would achieve a 44-percent reduction in on- and near-site DPM emissions.
Effectiveness of Mitigation

CalEEMod modeling indicates that implementation of Mitigation Measure AQ-1 would reduce exhaust PM_{10} emissions, considered to be equivalent to DPM emissions, by 86 percent. The reductions in construction period emissions would reduce the construction period cancer risk for residents to 6.4 chances per million. This level is below the significance threshold of 20 chances per million. When construction risks are considered with operational emissions, the overall 70-year project cancer risk would be 9.5 chances per million.

Impact 6: Odors. The project would result in temporary odors during construction and ongoing odors from the meat cooking operations at the fast-food restaurant. This impact would be *less-than-significant*.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and not likely to be noticeable for extended periods of time much beyond the project's site boundaries. The potential for diesel odor impacts is, therefore, *less-than-significant*.

During project operations, the project is expected to generate odors that may or may not be noticeable. The odors produced would be related to the cooking of food, in particular meat, from its fast-food restaurant component. Operations from these types of restaurants have not been identified by the SJVAPCD as significant odor sources and do not often generate complaints. Additionally, the nearest receptor to the restaurant is approximately 598 feet to the southeast. Therefore, the odor impacts associated with restaurant operations would be *less-than-significant*. However, the restaurant would be subject to the air district's rules governing odors and odor complaints.

Mitigation Measure for Impact 6: None proposed.

Impact 7: Consistency with Clean Air Planning Efforts. The project would not conflict with the current clean air plan or obstruct its implementation. This would be a *less-than-significant impact*.

The GAMAQI does not include methodologies for assessing the effect of a project on consistency with clean air plans developed by the SJVAPCD. Regional clean air plans developed by SJVAPCD rely on local land use designations to develop population and travel projections that are the basis of future emissions inventories. Air pollution control plans are aimed at reducing these projected future emissions. The project land uses would not alter population or vehicle-related emissions projections contained in regional clean air planning efforts in any measurable way and would not conflict with achievement of the control plans aimed at reducing these projected emissions. Therefore, the project would not conflict with or obstruct implementation of efforts outlined in the region's air pollution control plans to attain or maintain ambient air quality standards. This would be a *less-than-significant* impact.

Also, as previously discussed, in 2005 the SJVAPCD adopted the ISR Rule to fulfill the District's emission reduction commitments in its PM_{10} and Ozone attainment plans. The District has determined that implementation and compliance with the ISR would reduce the cumulative PM_{10} and NO_X impacts of growth anticipated in the air quality plans to a less-than-significant level. Since the project would be required to implement the emissions reductions under ISR, it would fulfill its share of achieving the District's emission reduction commitments in the PM_{10} and Ozone attainment plans. Therefore, the project would result in a *less-than-significant impact* since it would not conflict with or obstruct implementation of the ISR Rule.

Mitigation Measure for Impact 7: None required.

Computation of Greenhouse Gas Emissions

This section provides a computation of greenhouse gases (GHG) emissions associated with the project. GHG emissions are from many sources over long periods of time has resulted in, and continues to contribute to, global warming and climate change. The effects of climate change include: melting polar ice caps, sea level rise, increased coastal flooding, increased frequency and severity of extreme weather events, habitat disruption, and other adverse environmental effects. It is generally accepted that individual development projects, in and of themselves, are too small to have a perceptible effect on global climate. However, the GHG emissions from each development project results in an incremental contribution to global warming and climate change. The geographic scope of climate change is global, and the cumulative emissions of GHGs globally have resulted in cumulatively significant climate change impacts. Thus, in CEQA terms, GHG emissions associated with individual development projects are by nature cumulative in their effects. A significant project impact would occur if the GHG emissions associated with a project represent a considerable contribution to the cumulatively significant impacts resulting from global climate change. As such, the focus of this analysis is to determine whether the GHG emissions associated with the project represent a considerable contribution to the cumulatively significant impacts resulting from global climate change. For purposes of this analysis, the cumulatively contribution is considered a significant adverse impact.

SJVAPCD Methodologies

The SJVAPCD's (Air District) *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA* provides for three alternative methodologies for evaluating project's potential impact on climate change and determination reducing the greenhouse gas emissions from a project to less-than-significant levels. These include: (1) Demonstrate compliance with a locally-adopted GHG reduction plan (i.e., Climate Action Plan); (2) Demonstrate implementation of a combination of Air District-approved and pre-qualified Best Performance Standards (BPS) which taken together are deemed to result in a 29 percent reduction in project GHG emissions relative to Business-As-Usual (BAU) conditions; or (3) For projects not implementing BPS, quantification of project GHG emissions and comparison to GHG emissions from BAU conditions in order to demonstrate a 29 percent reduction in emissions relative to BAU conditions. BAU is defined as operation of the proposed project with emission factors from the 2002-2004 baseline period established by the AB 32 Scoping Plan. Land use projects not achieving the necessary reductions would be considered to have a significant impact. It is important to note that projects that require the preparation of an EIR for any reason are required to quantify GHG emissions, even if compliant with an adopted climate action plan or implementing BPS.

CalEEMod Modeling

CalEEMod was used to quantify GHG emissions from project operations-related activities assuming full build-out of the project in 2023. The project land use types and size and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by the Air District. Unless otherwise noted below, the CalEEMod model defaults for Stanislaus County were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in *Attachment 1*.

The project land use types and size, and trip generation rates were input to CalEEMod, as described above under Impact 1 and 2.

Energy

CalEEMod defaults for energy use were used , which include the 2016 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The BAU emissions estimate included the CalEEMod default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced. However, the electricity-produced emission rate was modified for the analysis of 2023 operations emissions, to 210 pounds CO_2 per megawatt of electricity delivered. The CalEEMod default is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, in 2019 PG&E published emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO_2 per megawatt of electricity delivered.[36]

Construction Emissions

Annual GHG emissions associated with construction were computed at 605 metric tons (MT) of CO_2e. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the County nor SJVAPCD have an adopted threshold of significance for construction related GHG emissions. However, other air districts, such as the SCAQMD, account for construction GHG emissions by amortizing them over a 30-year period, i.e., adding 1/30th of construction emissions to annual operational emissions. This amortization method was applied in the calculation of project GHG emissions.

Operational Emissions

The CalEEMod model predicted annual emissions associated with operation of the fully developed project. In 2023, annual emissions are calculated to be 1,822 MT of CO_2e, as shown in Table 11.

TABLE 11. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	BAU Emissions	2023 Project Emissions
Amortized Construction	20	20
Area	0	0
Energy Consumption	317	172
Mobile	2,007	1,555
Solid Waste Generation	56	56
Water Usage	35	18
Total	2,436	1,822
Percent Reduction		25.2 percent
SJVAPCD Reduction Target for Project-Specific Emissions (for Projects not compliant with a CAP or not implementing BPS)		**29 percent**

[36] PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

2023 project emissions are approximately 4 percent less (92 MT CO_2e more) than the 29 percent reduction target before the implementation of BPS. Stanislaus County does not have a qualified climate action plan but does provide a Sustainability "toolbox" for its communities to use.[37] Additionally, mobile source emissions will be reducing over time as older, less efficient vehicles are replaced by newer, more efficient ones.

[37] *Stanislaus Regional Sustainability Toolbox – Grant Work Products*. Stanislaus County. http://www.stancounty.com/planning/pl/toolbox.shtm

Attachment 1: CalEEMod Modeling Output

Stanislaus Co Pirrone Rd Comercial Development

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	69.00	1000sqft	0.00	69,000.00	0
Parking Lot	34.00	Space	0.00	13,600.00	0
Fast Food Restaurant with Drive Thru	3.25	1000sqft	0.00	3,250.00	0
Convenience Market With Gas Pumps	4.50	1000sqft	2.04	4,500.00	0
Strip Mall	2.31	1000sqft	0.00	2,310.00	0
Unrefrigerated Warehouse-No Rail	62.34	1000sqft	3.62	62,340.00	0
Other Asphalt Surfaces	88.10	1000sqft	0.00	88,100.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Most Current CO2 Intensity Factor documented for PG&E

Land Use - Per Plans submitted by the applicant in January 2021. Idustrial LU represents Mini Storage. Other Asphalt area estiamted from plans.

Construction Phase - Based on CalEEMod Default, No Demo

Off-road Equipment -

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - No Demolition

Off-road Equipment - Based on Grading default equipment. Assume concrete saw will be needed

Off-road Equipment - Based on CalEEMod Default.

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - Based on CalEEMod Defaults

Trips and VMT - Concrete and Asphalt haul trips estimated from plans provided by applicant. Concrete work anticipated over two phases.

Demolition - No demolition needed

Grading - Assume ballenced site; cut=fill. No material import/export

Architectural Coating - Parking area estimated from plans provided by client.

Vehicle Trips - Based on ITE 10th Ed. Trip Gen Rates provided by PTE's Traffic Study, 2020, and default CalEEMod Rates

Vehicle Emission Factors - From EMFAC2017, Stanislaus Co - 2023

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - Estimated off of plans provided by applicant

Energy Use -

Water And Wastewater - Assume city services hook-up, WWTP

Construction Off-road Equipment Mitigation - Basic BPMs for fugitive dust. T3L3 Mitigation.

Off-road Equipment - Based on Grading Default

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	10,242.00	6,496.00
tblAreaCoating	Area_Parking	10242	6496
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	17.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	1.00
tblFleetMix	HHD	0.09	0.06
tblFleetMix	HHD	0.09	0.06
tblFleetMix	HHD	0.09	0.06
tblFleetMix	HHD	0.09	0.06
tblFleetMix	HHD	0.09	0.06
tblFleetMix	HHD	0.09	0.06
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDA	0.52	0.53
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LDT2	0.17	0.15
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03

tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	LHD2	5.0400e-003	7.2986e-003
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MCY	4.5210e-003	0.01
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MH	8.4100e-004	8.8802e-004
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02

tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	OBUS	1.8430e-003	1.3154e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	SBUS	8.3300e-004	1.2921e-003
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblFleetMix	UBUS	1.0790e-003	6.5890e-004
tblLandUse	LotAcreage	1.58	0.00
tblLandUse	LotAcreage	0.31	0.00
tblLandUse	LotAcreage	0.07	0.00
tblLandUse	LotAcreage	0.10	2.04
tblLandUse	LotAcreage	0.05	0.00
tblLandUse	LotAcreage	1.43	3.62
tblLandUse	LotAcreage	2.02	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	101.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleEF	HHD	1.23	0.02
tblVehicleEF	HHD	0.01	5.7190e-003
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	1.81	7.22
tblVehicleEF	HHD	0.55	0.22
tblVehicleEF	HHD	0.92	1.7200e-003
tblVehicleEF	HHD	5,297.64	1,186.97
tblVehicleEF	HHD	1,516.66	1,348.52
tblVehicleEF	HHD	2.88	0.01
tblVehicleEF	HHD	15.51	5.93
tblVehicleEF	HHD	1.80	2.40
tblVehicleEF	HHD	20.53	2.39
tblVehicleEF	HHD	5.7790e-003	2.5100e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.8710e-003	0.03
tblVehicleEF	HHD	2.3000e-005	0.00

tblVehicleEF	HHD	5.5290e-003	2.4010e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8050e-003	8.8830e-003
tblVehicleEF	HHD	5.6170e-003	0.02
tblVehicleEF	HHD	2.1000e-005	0.00
tblVehicleEF	HHD	4.0000e-005	1.0000e-006
tblVehicleEF	HHD	1.4830e-003	2.7000e-005
tblVehicleEF	HHD	0.48	0.49
tblVehicleEF	HHD	2.2000e-005	0.00
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	HHD	1.1300e-004	1.4000e-004
tblVehicleEF	HHD	0.02	1.0000e-006
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	4.4000e-005	0.00
tblVehicleEF	HHD	4.0000e-005	1.0000e-006
tblVehicleEF	HHD	1.4830e-003	2.7000e-005
tblVehicleEF	HHD	0.55	0.56
tblVehicleEF	HHD	2.2000e-005	0.00
tblVehicleEF	HHD	0.10	0.03
tblVehicleEF	HHD	1.1300e-004	1.4000e-004
tblVehicleEF	HHD	0.03	1.0000e-006
tblVehicleEF	LDA	4.0880e-003	2.2940e-003
tblVehicleEF	LDA	5.1140e-003	0.05
tblVehicleEF	LDA	0.56	0.62
tblVehicleEF	LDA	1.14	2.17
tblVehicleEF	LDA	253.86	261.48
tblVehicleEF	LDA	55.84	53.53
tblVehicleEF	LDA	0.05	0.04
tblVehicleEF	LDA	0.07	0.18

tblVehicleEF	LDA	1.8230e-003	1.5270e-003
tblVehicleEF	LDA	2.2760e-003	1.8180e-003
tblVehicleEF	LDA	1.6800e-003	1.4060e-003
tblVehicleEF	LDA	2.0930e-003	1.6710e-003
tblVehicleEF	LDA	0.04	0.06
tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	8.7030e-003
tblVehicleEF	LDA	0.03	0.22
tblVehicleEF	LDA	0.07	0.22
tblVehicleEF	LDA	2.5420e-003	8.7000e-005
tblVehicleEF	LDA	5.7700e-004	0.00
tblVehicleEF	LDA	0.04	0.06
tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.22
tblVehicleEF	LDA	0.08	0.24
tblVehicleEF	LDT1	0.01	6.5620e-003
tblVehicleEF	LDT1	0.02	0.08
tblVehicleEF	LDT1	1.43	1.31
tblVehicleEF	LDT1	3.63	2.47
tblVehicleEF	LDT1	320.67	313.44
tblVehicleEF	LDT1	70.85	65.80
tblVehicleEF	LDT1	0.14	0.11
tblVehicleEF	LDT1	0.21	0.30
tblVehicleEF	LDT1	2.8510e-003	2.1810e-003
tblVehicleEF	LDT1	3.7430e-003	2.6970e-003
tblVehicleEF	LDT1	2.6260e-003	2.0070e-003
tblVehicleEF	LDT1	3.4420e-003	2.4800e-003

tblVehicleEF	LDT1	0.20	0.19
tblVehicleEF	LDT1	0.38	0.27
tblVehicleEF	LDT1	0.13	0.12
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.22	0.91
tblVehicleEF	LDT1	0.25	0.43
tblVehicleEF	LDT1	3.2240e-003	2.9960e-003
tblVehicleEF	LDT1	7.7300e-004	0.00
tblVehicleEF	LDT1	0.20	0.19
tblVehicleEF	LDT1	0.38	0.27
tblVehicleEF	LDT1	0.13	0.12
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.22	0.91
tblVehicleEF	LDT1	0.28	0.47
tblVehicleEF	LDT2	6.4220e-003	4.2430e-003
tblVehicleEF	LDT2	8.3400e-003	0.07
tblVehicleEF	LDT2	0.81	0.94
tblVehicleEF	LDT2	1.74	2.83
tblVehicleEF	LDT2	360.27	336.22
tblVehicleEF	LDT2	79.40	70.84
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.14	0.31
tblVehicleEF	LDT2	1.8700e-003	1.5850e-003
tblVehicleEF	LDT2	2.3920e-003	1.8740e-003
tblVehicleEF	LDT2	1.7190e-003	1.4590e-003
tblVehicleEF	LDT2	2.2000e-003	1.7230e-003
tblVehicleEF	LDT2	0.07	0.11
tblVehicleEF	LDT2	0.15	0.16
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.02	0.02

tblVehicleEF	LDT2	0.08	0.53
tblVehicleEF	LDT2	0.11	0.35
tblVehicleEF	LDT2	3.6090e-003	0.01
tblVehicleEF	LDT2	8.2400e-004	6.7000e-005
tblVehicleEF	LDT2	0.07	0.11
tblVehicleEF	LDT2	0.15	0.16
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.08	0.53
tblVehicleEF	LDT2	0.12	0.38
tblVehicleEF	LHD1	4.4080e-003	4.1510e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.13	0.16
tblVehicleEF	LHD1	1.31	1.03
tblVehicleEF	LHD1	2.15	0.86
tblVehicleEF	LHD1	9.58	9.64
tblVehicleEF	LHD1	683.48	765.05
tblVehicleEF	LHD1	25.57	9.21
tblVehicleEF	LHD1	0.11	0.10
tblVehicleEF	LHD1	2.59	1.69
tblVehicleEF	LHD1	0.86	0.27
tblVehicleEF	LHD1	1.1730e-003	1.1340e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	7.9900e-004	2.1100e-004
tblVehicleEF	LHD1	1.1220e-003	1.0850e-003
tblVehicleEF	LHD1	2.6030e-003	2.5580e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	7.3500e-004	1.9400e-004

tblVehicleEF	LHD1	3.1990e-003	2.6090e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.4050e-003	1.1460e-003
tblVehicleEF	LHD1	0.17	0.14
tblVehicleEF	LHD1	0.29	0.50
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.5000e-005	9.3000e-005
tblVehicleEF	LHD1	6.6820e-003	7.4310e-003
tblVehicleEF	LHD1	2.9600e-004	9.1000e-005
tblVehicleEF	LHD1	3.1990e-003	2.6090e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.4050e-003	1.1460e-003
tblVehicleEF	LHD1	0.20	0.16
tblVehicleEF	LHD1	0.29	0.50
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD2	3.0500e-003	2.9720e-003
tblVehicleEF	LHD2	9.8580e-003	7.9180e-003
tblVehicleEF	LHD2	7.5330e-003	7.9090e-003
tblVehicleEF	LHD2	0.11	0.13
tblVehicleEF	LHD2	0.79	0.76
tblVehicleEF	LHD2	1.08	0.53
tblVehicleEF	LHD2	14.85	14.93
tblVehicleEF	LHD2	712.50	781.68
tblVehicleEF	LHD2	20.65	6.93
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	1.72	1.52
tblVehicleEF	LHD2	0.46	0.17
tblVehicleEF	LHD2	1.3900e-003	1.4910e-003

tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.7600e-004	1.1200e-004
tblVehicleEF	LHD2	1.3300e-003	1.4260e-003
tblVehicleEF	LHD2	2.7280e-003	2.7170e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.4600e-004	1.0300e-004
tblVehicleEF	LHD2	1.2410e-003	1.2780e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	5.8600e-004	5.8900e-004
tblVehicleEF	LHD2	0.14	0.13
tblVehicleEF	LHD2	0.08	0.25
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	LHD2	1.4400e-004	1.4200e-004
tblVehicleEF	LHD2	6.9150e-003	7.5350e-003
tblVehicleEF	LHD2	2.2600e-004	6.9000e-005
tblVehicleEF	LHD2	1.2410e-003	1.2780e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.8600e-004	5.8900e-004
tblVehicleEF	LHD2	0.16	0.15
tblVehicleEF	LHD2	0.08	0.25
tblVehicleEF	LHD2	0.11	0.04
tblVehicleEF	MCY	0.46	0.36
tblVehicleEF	MCY	0.16	0.25
tblVehicleEF	MCY	21.81	21.43
tblVehicleEF	MCY	10.04	8.90
tblVehicleEF	MCY	174.62	216.25
tblVehicleEF	MCY	47.96	62.71

tblVehicleEF	MCY	1.18	1.17
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.0530e-003	2.0460e-003
tblVehicleEF	MCY	3.7500e-003	3.0570e-003
tblVehicleEF	MCY	1.9240e-003	1.9170e-003
tblVehicleEF	MCY	3.5440e-003	2.8840e-003
tblVehicleEF	MCY	1.57	3.03
tblVehicleEF	MCY	1.04	0.97
tblVehicleEF	MCY	0.82	1.57
tblVehicleEF	MCY	2.52	2.49
tblVehicleEF	MCY	0.76	2.21
tblVehicleEF	MCY	2.25	1.97
tblVehicleEF	MCY	2.1750e-003	2.1400e-003
tblVehicleEF	MCY	7.1000e-004	6.2100e-004
tblVehicleEF	MCY	1.57	3.03
tblVehicleEF	MCY	1.04	0.97
tblVehicleEF	MCY	0.82	1.57
tblVehicleEF	MCY	3.07	3.05
tblVehicleEF	MCY	0.76	2.21
tblVehicleEF	MCY	2.45	2.14
tblVehicleEF	MDV	0.01	5.1630e-003
tblVehicleEF	MDV	0.02	0.09
tblVehicleEF	MDV	1.38	1.04
tblVehicleEF	MDV	3.57	3.39
tblVehicleEF	MDV	507.39	421.96
tblVehicleEF	MDV	110.54	89.09
tblVehicleEF	MDV	0.17	0.10
tblVehicleEF	MDV	0.33	0.40
tblVehicleEF	MDV	1.8860e-003	1.6460e-003
tblVehicleEF	MDV	2.4300e-003	1.9300e-003

tblVehicleEF	MDV	1.7390e-003	1.5180e-003
tblVehicleEF	MDV	2.2340e-003	1.7750e-003
tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.24	0.19
tblVehicleEF	MDV	0.09	0.11
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.14	0.60
tblVehicleEF	MDV	0.28	0.47
tblVehicleEF	MDV	5.0840e-003	4.1200e-003
tblVehicleEF	MDV	1.1690e-003	8.7100e-004
tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.24	0.19
tblVehicleEF	MDV	0.09	0.11
tblVehicleEF	MDV	0.05	0.03
tblVehicleEF	MDV	0.14	0.60
tblVehicleEF	MDV	0.31	0.51
tblVehicleEF	MH	0.04	0.01
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	3.19	1.59
tblVehicleEF	MH	6.69	2.19
tblVehicleEF	MH	1,231.90	1,566.57
tblVehicleEF	MH	58.54	18.33
tblVehicleEF	MH	1.95	2.08
tblVehicleEF	MH	0.97	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	1.2550e-003	2.7000e-004
tblVehicleEF	MH	3.2340e-003	3.3040e-003
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	1.1540e-003	2.4900e-004

tblVehicleEF	MH	1.60	1.23
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.45	0.35
tblVehicleEF	MH	0.14	0.10
tblVehicleEF	MH	0.03	1.85
tblVehicleEF	MH	0.39	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	7.0200e-004	1.8100e-004
tblVehicleEF	MH	1.60	1.23
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.45	0.35
tblVehicleEF	MH	0.20	0.13
tblVehicleEF	MH	0.03	1.85
tblVehicleEF	MH	0.42	0.11
tblVehicleEF	MHD	0.02	2.5910e-003
tblVehicleEF	MHD	3.3350e-003	1.4500e-003
tblVehicleEF	MHD	0.06	6.7270e-003
tblVehicleEF	MHD	0.20	0.36
tblVehicleEF	MHD	0.30	0.22
tblVehicleEF	MHD	3.33	0.80
tblVehicleEF	MHD	203.32	80.43
tblVehicleEF	MHD	1,194.79	1,073.27
tblVehicleEF	MHD	29.44	6.77
tblVehicleEF	MHD	0.60	0.50
tblVehicleEF	MHD	1.25	1.57
tblVehicleEF	MHD	15.87	1.83
tblVehicleEF	MHD	1.9000e-004	4.5600e-004
tblVehicleEF	MHD	3.3620e-003	7.7450e-003
tblVehicleEF	MHD	5.1100e-004	9.0000e-005
tblVehicleEF	MHD	1.8200e-004	4.3600e-004

tblVehicleEF	MHD	3.2150e-003	7.4070e-003
tblVehicleEF	MHD	4.7000e-004	8.3000e-005
tblVehicleEF	MHD	9.0100e-004	5.3200e-004
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.8800e-004	2.3000e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.10
tblVehicleEF	MHD	0.20	0.04
tblVehicleEF	MHD	1.9460e-003	7.6200e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	3.5300e-004	6.7000e-005
tblVehicleEF	MHD	9.0100e-004	5.3200e-004
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.8800e-004	2.3000e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.10
tblVehicleEF	MHD	0.22	0.04
tblVehicleEF	OBUS	0.01	6.9790e-003
tblVehicleEF	OBUS	0.01	6.2440e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.25	0.55
tblVehicleEF	OBUS	0.75	0.73
tblVehicleEF	OBUS	7.19	2.27
tblVehicleEF	OBUS	154.64	86.57
tblVehicleEF	OBUS	1,329.99	1,366.05
tblVehicleEF	OBUS	64.71	16.76
tblVehicleEF	OBUS	0.35	0.34
tblVehicleEF	OBUS	1.14	1.53

tblVehicleEF	OBUS	3.84	1.04
tblVehicleEF	OBUS	3.2000e-005	1.1100e-004
tblVehicleEF	OBUS	3.0360e-003	7.0960e-003
tblVehicleEF	OBUS	9.1500e-004	1.7000e-004
tblVehicleEF	OBUS	3.1000e-005	1.0600e-004
tblVehicleEF	OBUS	2.8880e-003	6.7760e-003
tblVehicleEF	OBUS	8.4100e-004	1.5600e-004
tblVehicleEF	OBUS	2.2470e-003	2.1660e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	7.9100e-004	7.5500e-004
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	0.04	0.29
tblVehicleEF	OBUS	0.43	0.10
tblVehicleEF	OBUS	1.4870e-003	8.2300e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.7300e-004	1.6600e-004
tblVehicleEF	OBUS	2.2470e-003	2.1660e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	7.9100e-004	7.5500e-004
tblVehicleEF	OBUS	0.08	0.05
tblVehicleEF	OBUS	0.04	0.29
tblVehicleEF	OBUS	0.47	0.11
tblVehicleEF	SBUS	0.80	0.06
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.07	7.7600e-003
tblVehicleEF	SBUS	8.32	2.30
tblVehicleEF	SBUS	0.89	1.69
tblVehicleEF	SBUS	8.68	1.19

tblVehicleEF	SBUS	1,098.53	362.92
tblVehicleEF	SBUS	1,027.77	1,087.46
tblVehicleEF	SBUS	60.04	5.26
tblVehicleEF	SBUS	8.34	3.54
tblVehicleEF	SBUS	3.51	5.09
tblVehicleEF	SBUS	11.56	0.63
tblVehicleEF	SBUS	7.9830e-003	3.6040e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	6.2100e-004	5.4000e-005
tblVehicleEF	SBUS	7.6380e-003	3.4480e-003
tblVehicleEF	SBUS	2.5780e-003	2.6970e-003
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.7100e-004	4.9000e-005
tblVehicleEF	SBUS	5.5780e-003	1.2170e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	0.98	0.27
tblVehicleEF	SBUS	2.0120e-003	4.6000e-004
tblVehicleEF	SBUS	0.10	0.14
tblVehicleEF	SBUS	0.02	0.06
tblVehicleEF	SBUS	0.44	0.05
tblVehicleEF	SBUS	0.01	3.4560e-003
tblVehicleEF	SBUS	9.9420e-003	0.01
tblVehicleEF	SBUS	7.5000e-004	5.2000e-005
tblVehicleEF	SBUS	5.5780e-003	1.2170e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	1.41	0.38
tblVehicleEF	SBUS	2.0120e-003	4.6000e-004
tblVehicleEF	SBUS	0.12	0.18
tblVehicleEF	SBUS	0.02	0.06

tblVehicleEF	SBUS	0.48	0.05
tblVehicleEF	UBUS	1.21	2.78
tblVehicleEF	UBUS	0.09	0.02
tblVehicleEF	UBUS	9.79	20.91
tblVehicleEF	UBUS	15.78	1.44
tblVehicleEF	UBUS	1,989.00	1,765.95
tblVehicleEF	UBUS	115.64	16.47
tblVehicleEF	UBUS	9.98	0.95
tblVehicleEF	UBUS	14.75	0.16
tblVehicleEF	UBUS	0.57	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.17	4.0890e-003
tblVehicleEF	UBUS	1.5980e-003	1.3900e-004
tblVehicleEF	UBUS	0.24	0.04
tblVehicleEF	UBUS	3.0000e-003	6.0960e-003
tblVehicleEF	UBUS	0.16	3.8980e-003
tblVehicleEF	UBUS	1.4690e-003	1.2800e-004
tblVehicleEF	UBUS	8.8520e-003	9.3400e-004
tblVehicleEF	UBUS	0.12	8.9700e-003
tblVehicleEF	UBUS	3.1750e-003	4.7000e-004
tblVehicleEF	UBUS	0.84	0.05
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	1.17	0.09
tblVehicleEF	UBUS	0.01	8.0280e-003
tblVehicleEF	UBUS	1.4410e-003	1.6300e-004
tblVehicleEF	UBUS	8.8520e-003	9.3400e-004
tblVehicleEF	UBUS	0.12	8.9700e-003
tblVehicleEF	UBUS	3.1750e-003	4.7000e-004
tblVehicleEF	UBUS	2.12	2.85
tblVehicleEF	UBUS	0.03	0.05

tblVehicleEF	UBUS	1.28	0.10
tblVehicleTrips	ST_TR	1,448.33	936.32
tblVehicleTrips	ST_TR	722.03	685.40
tblVehicleTrips	ST_TR	42.04	35.81
tblVehicleTrips	ST_TR	1.68	1.65
tblVehicleTrips	SU_TR	1,182.08	764.20
tblVehicleTrips	SU_TR	542.72	515.19
tblVehicleTrips	SU_TR	20.43	17.40
tblVehicleTrips	SU_TR	1.68	1.65
tblVehicleTrips	WD_TR	845.60	546.67
tblVehicleTrips	WD_TR	496.12	470.95
tblVehicleTrips	WD_TR	44.32	37.75
tblVehicleTrips	WD_TR	1.68	1.65
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1303	1.3181	0.9265	1.6200e-003	0.2462	0.0667	0.3128	0.1330	0.0618	0.1948	0.0000	141.1361	141.1361	0.0411	0.0000	142.1630
2022	0.6943	1.5464	1.6530	2.7100e-003	0.0000	0.0801	0.0801	0.0000	0.0753	0.0753	0.0000	233.4508	233.4508	0.0572	0.0000	234.8798
Maximum	**0.6943**	**1.5464**	**1.6530**	**2.7100e-003**	**0.2462**	**0.0801**	**0.3128**	**0.1330**	**0.0753**	**0.1948**	**0.0000**	**233.4508**	**233.4508**	**0.0572**	**0.0000**	**234.8798**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0400	0.8289	1.0384	1.6200e-003	0.1108	6.9400e-003	0.1177	0.0598	6.9400e-003	0.0668	0.0000	141.1359	141.1359	0.0411	0.0000	142.1629
2022	0.5935	1.4211	1.8178	2.7100e-003	0.0000	0.0134	0.0134	0.0000	0.0134	0.0134	0.0000	233.4505	233.4505	0.0572	0.0000	234.8796
Maximum	**0.5935**	**1.4211**	**1.8178**	**2.7100e-003**	**0.1108**	**0.0134**	**0.1177**	**0.0598**	**0.0134**	**0.0668**	**0.0000**	**233.4505**	**233.4505**	**0.0572**	**0.0000**	**234.8796**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**23.18**	**21.45**	**-10.73**	**0.00**	**55.00**	**86.15**	**66.64**	**55.00**	**85.17**	**70.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-6-2021	12-5-2021	1.2289	0.7099
2	12-6-2021	3-5-2022	0.5754	0.4789
3	3-6-2022	6-5-2022	0.5691	0.4896
4	6-6-2022	9-5-2022	0.5691	0.4896
5	9-6-2022	9-30-2022	0.4766	0.4660
		Highest	1.2289	0.7099

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3466	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003
Energy	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	170.9968	170.9968	0.0117	3.8600e-003	172.4374
Mobile	2.1262	2.5717	9.0721	0.0149	1.2648	0.0178	1.2827	0.3394	0.0168	0.3562	0.0000	1,551.1400	1,551.1400	0.1370	0.0000	1,554.5647
Waste						0.0000	0.0000		0.0000	0.0000	22.7330	0.0000	22.7330	1.3435	0.0000	56.3199
Water						0.0000	0.0000		0.0000	0.0000	5.6279	8.3229	13.9508	0.0205	0.0125	18.1819
Total	**2.4830**	**2.6641**	**9.1521**	**0.0154**	**1.2648**	**0.0249**	**1.2897**	**0.3394**	**0.0238**	**0.3632**	**28.3609**	**1,730.4644**	**1,758.8253**	**1.5127**	**0.0163**	**1,801.5090**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.3466	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003
Energy	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	170.9968	170.9968	0.0117	3.8600e-003	172.4374
Mobile	2.1262	2.5717	9.0721	0.0149	1.2648	0.0178	1.2827	0.3394	0.0168	0.3562	0.0000	1,551.1400	1,551.1400	0.1370	0.0000	1,554.5647
Waste						0.0000	0.0000		0.0000	0.0000	22.7330	0.0000	22.7330	1.3435	0.0000	56.3199
Water						0.0000	0.0000		0.0000	0.0000	5.6279	8.3229	13.9508	0.0205	0.0125	18.1819
Total	**2.4830**	**2.6641**	**9.1521**	**0.0154**	**1.2648**	**0.0249**	**1.2897**	**0.3394**	**0.0238**	**0.3632**	**28.3609**	**1,730.4644**	**1,758.8253**	**1.5127**	**0.0163**	**1,801.5090**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/6/2021	9/6/2021	5	1	
2	Site Preparation	Site Preparation	9/6/2021	9/17/2021	5	10	
3	Gasoline Equipment	Site Preparation	9/17/2021	9/30/2021	5	10	
4	Grading	Grading	9/30/2021	10/27/2021	5	20	
5	Trenching	Trenching	9/17/2021	10/14/2021	5	20	
6	Building Construction	Building Construction	10/27/2021	9/13/2022	5	230	
7	Paving	Paving	9/13/2022	10/10/2022	5	20	
8	Architectural Coating	Architectural Coating	9/13/2022	10/10/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 108,600; Non-Residential Outdoor: 36,200; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	0	0.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Gasoline Equipment	Rubber Tired Dozers	3	8.00	247	0.40
Gasoline Equipment	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41
Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Gasoline Equipment	7	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**7.1000e-004**	**0.0414**	**0.0223**	**7.1000e-004**	**0.0231**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Gasoline Equipment - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr									MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**7.1000e-004**	**0.0414**	**0.0223**	**7.1000e-004**	**0.0231**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644

Total	0.0229	0.2474	0.1586	3.0000e-004	0.0655	0.0116	0.0771	0.0337	0.0107	0.0443	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**	**0.0295**	**1.1300e-003**	**0.0306**	**0.0152**	**1.1300e-003**	**0.0163**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**		**0.0116**	**0.0116**		**0.0107**	**0.0107**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2644**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**		**1.1300e-003**	**1.1300e-003**		**1.1300e-003**	**1.1300e-003**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0456	0.4184	0.3978	6.5000e-004		0.0230	0.0230		0.0216	0.0216	0.0000	55.5930	55.5930	0.0134	0.0000	55.9283
Total	**0.0456**	**0.4184**	**0.3978**	**6.5000e-004**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**55.5930**	**55.5930**	**0.0134**	**0.0000**	**55.9283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0162	0.3414	0.4290	6.5000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	55.5929	55.5929	0.0134	0.0000	55.9282
Total	**0.0162**	**0.3414**	**0.4290**	**6.5000e-004**		**3.2500e-003**	**3.2500e-003**		**3.2500e-003**	**3.2500e-003**	**0.0000**	**55.5929**	**55.5929**	**0.0134**	**0.0000**	**55.9282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1553	1.4210	1.4891	2.4500e-003		0.0736	0.0736		0.0693	0.0693	0.0000	210.8700	210.8700	0.0505	0.0000	212.1329
Total	**0.1553**	**1.4210**	**1.4891**	**2.4500e-003**		**0.0736**	**0.0736**		**0.0693**	**0.0693**	**0.0000**	**210.8700**	**210.8700**	**0.0505**	**0.0000**	**212.1329**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0613	1.2946	1.6265	2.4500e-003		0.0123	0.0123		0.0123	0.0123	0.0000	210.8697	210.8697	0.0505	0.0000	212.1327
Total	**0.0613**	**1.2946**	**1.6265**	**2.4500e-003**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**210.8697**	**210.8697**	**0.0505**	**0.0000**	**212.1327**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	5.6100e-003	0.1130	0.1730	2.3000e-004		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.6100e-003**	**0.1130**	**0.1730**	**2.3000e-004**		**9.1000e-004**	**9.1000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5280**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	0.5259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9000e-004	0.0136	0.0183	3.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5265**	**0.0136**	**0.0183**	**3.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1262	2.5717	9.0721	0.0149	1.2648	0.0178	1.2827	0.3394	0.0168	0.3562	0.0000	1,551.1400	1,551.1400	0.1370	0.0000	1,554.5647
Unmitigated	2.1262	2.5717	9.0721	0.0149	1.2648	0.0178	1.2827	0.3394	0.0168	0.3562	0.0000	1,551.1400	1,551.1400	0.1370	0.0000	1,554.5647

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,460.02	4,213.45	3438.88	1,398,557	1,398,557
Fast Food Restaurant with Drive Thru	1,530.59	2,227.55	1674.35	1,424,940	1,424,940
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	87.20	82.72	40.20	127,433	127,433
Unrefrigerated Warehouse-No Rail	102.86	102.86	102.86	397,400	397,400
Total	4,180.67	6,626.57	5,256.29	3,348,329	3,348,329

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas Pumps	14.70	6.60	6.60	0.80	80.20	19.00	14	21	65
Fast Food Restaurant with Drive Thru	14.70	6.60	6.60	2.20	78.80	19.00	29	21	50
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Strip Mall	14.70	6.60	6.60	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888
Fast Food Restaurant with Drive Thru	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888
Other Asphalt Surfaces	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888
Parking Lot	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888
Strip Mall	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888
Unrefrigerated Warehouse-No Rail	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	70.4679	70.4679	9.7300e-003	2.0100e-003	71.3112
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	70.4679	70.4679	9.7300e-003	2.0100e-003	71.3112
NaturalGas Mitigated	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	100.5288	100.5288	1.9300e-003	1.8400e-003	101.1262
NaturalGas Unmitigated	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	100.5288	100.5288	1.9300e-003	1.8400e-003	101.1262

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	48150	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5695	2.5695	5.0000e-005	5.0000e-005	2.5847
Fast Food Restaurant with Drive Thru	683865	3.6900e-003	0.0335	0.0282	2.0000e-004		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	36.4936	36.4936	7.0000e-004	6.7000e-004	36.7105
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	24717	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3190	1.3190	3.0000e-005	2.0000e-005	1.3268
Unrefrigerated Warehouse-No Rail	1.12711e+006	6.0800e-003	0.0553	0.0464	3.3000e-004		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	60.1467	60.1467	1.1500e-003	1.1000e-003	60.5042
Total		**0.0102**	**0.0923**	**0.0776**	**5.5000e-004**		**7.0200e-003**	**7.0200e-003**		**7.0200e-003**	**7.0200e-003**	**0.0000**	**100.5288**	**100.5288**	**1.9300e-003**	**1.8400e-003**	**101.1262**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	48150	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5695	2.5695	5.0000e-005	5.0000e-005	2.5847
Fast Food Restaurant with Drive Thru	683865	3.6900e-003	0.0335	0.0282	2.0000e-004		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	36.4936	36.4936	7.0000e-004	6.7000e-004	36.7105
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	24717	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3190	1.3190	3.0000e-005	2.0000e-005	1.3268
Unrefrigerated Warehouse-No Rail	1.12711e+006	6.0800e-003	0.0553	0.0464	3.3000e-004		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	60.1467	60.1467	1.1500e-003	1.1000e-003	60.5042

Total		**0.0102**	**0.0923**	**0.0776**	**5.5000e-004**		**7.0200e-003**	**7.0200e-003**		**7.0200e-003**	**7.0200e-003**	**0.0000**	**100.5288**	**100.5288**	**1.9300e-003**	**1.8400e-003**	**101.1262**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	36675	3.4935	4.8000e-004	1.0000e-004	3.5353
Fast Food Restaurant with Drive Thru	94152.5	8.9684	1.2400e-003	2.6000e-004	9.0758
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4760	0.4534	6.0000e-005	1.0000e-005	0.4588
Strip Mall	18826.5	1.7933	2.5000e-004	5.0000e-005	1.8148
Unrefrigerated Warehouse-No Rail	585373	55.7593	7.7000e-003	1.5900e-003	56.4266
Total		**70.4679**	**9.7300e-003**	**2.0100e-003**	**71.3112**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	36675	3.4935	4.8000e-004	1.0000e-004	3.5353
Fast Food Restaurant with Drive Thru	94152.5	8.9684	1.2400e-003	2.6000e-004	9.0758
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Parking Lot	4760	0.4534	6.0000e-005	1.0000e-005	0.4588
Strip Mall	18826.5	1.7933	2.5000e-004	5.0000e-005	1.8148
Unrefrigerated Warehouse-No Rail	585373	55.7593	7.7000e-003	1.5900e-003	56.4266
Total		**70.4679**	**9.7300e-003**	**2.0100e-003**	**71.3112**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3466	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003
Unmitigated	0.3466	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0526					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.2938					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003
Total	**0.3466**	**2.0000e-005**	**2.4200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.7100e-003**	**4.7100e-003**	**1.0000e-005**	**0.0000**	**5.0200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0526					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2938					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	1.0000e-005	0.0000	5.0200e-003
Total	**0.3466**	**2.0000e-005**	**2.4200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.7100e-003**	**4.7100e-003**	**1.0000e-005**	**0.0000**	**5.0200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.9508	0.0205	0.0125	18.1819
Unmitigated	13.9508	0.0205	0.0125	18.1819

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.333326 / 0.204297	0.3579	4.4000e-004	2.6000e-004	0.4473
Fast Food Restaurant with Drive Thru	0.986485 / 0.0629671	0.8785	1.2700e-003	7.7000e-004	1.1410
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.171108 / 0.104872	0.1837	2.3000e-004	1.4000e-004	0.2296
Unrefrigerated Warehouse-No Rail	14.4161 / 0	12.5308	0.0186	0.0113	16.3640
Total		**13.9508**	**0.0205**	**0.0125**	**18.1819**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.333326 / 0.204297	0.3579	4.4000e-004	2.6000e-004	0.4473
Fast Food Restaurant with Drive Thru	0.986485 / 0.0629671	0.8785	1.2700e-003	7.7000e-004	1.1410
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000

Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.171108 / 0.104872	0.1837	2.3000e-004	1.4000e-004	0.2296
Unrefrigerated Warehouse-No Rail	14.4161 / 0	12.5308	0.0186	0.0113	16.3640
Total		**13.9508**	**0.0205**	**0.0125**	**18.1819**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7330	1.3435	0.0000	56.3199
Unmitigated	22.7330	1.3435	0.0000	56.3199

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	13.52	2.7444	0.1622	0.0000	6.7992

Fast Food Restaurant with Drive Thru	37.44	7.6000	0.4492	0.0000	18.8286
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.43	0.4933	0.0292	0.0000	1.2221
Unrefrigerated Warehouse-No Rail	58.6	11.8953	0.7030	0.0000	29.4700
Total		**22.7330**	**1.3435**	**0.0000**	**56.3199**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	13.52	2.7444	0.1622	0.0000	6.7992
Fast Food Restaurant with Drive Thru	37.44	7.6000	0.4492	0.0000	18.8286
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.43	0.4933	0.0292	0.0000	1.2221
Unrefrigerated Warehouse-No Rail	58.6	11.8953	0.7030	0.0000	29.4700
Total		**22.7330**	**1.3435**	**0.0000**	**56.3199**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod EMFAC2017 Fleet Mix Input - 2021

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.51151	0.045975	0.155595	0.14926	0.032593	0.007997	0.023152	0.054968	0.001408	0.000658	0.014563	0.001335	0.000989

CalEEMod EMFAC2017 Emission Factors Input - 2021

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004268	0.003092	0.002713	0.02400902	0.0074	0	0	0.052364	0
A	CH4_RUNEX	0.00309	0.009114	0.005479	0.006772	0.0121	0.008632	0.01086	0.010282303	0.0137	2.42619	0.363916	0.016572	0.018561
A	CH4_STREX	0.059041	0.100794	0.085029	0.105811	0.014494	0.008718	0.007034	1.29854E-07	0.020199	0.019528	0.256925	0.007079	0.024313
A	CO_IDLEX	0	0	0	0	0.159324	0.131233	0.350402	6.57013078	0.540215	0	0	2.192791	0
A	CO_RUNEX	0.736574	1.718003	1.14447	1.298795	1.158074	0.818872	0.7221	0.452022129	1.212168	17.93988	22.36378	1.749058	2.139252
A	CO_STREX	2.319795	2.686172	3.053695	3.772893	0.907309	0.568056	0.891821	0.002190113	2.364098	1.449691	8.856139	1.169933	2.409924
A	CO2_NBIO_IDLEX	0	0	0	0	9.737706	15.05693	85.13391	1222.433896	90.95654	0	0	362.4276	0
A	CO2_NBIO_RUNEX	275.4613	329.2228	358.0367	443.0663	776.7624	797.1928	1143.632	1445.856541	1411.991	1783.091	216.6064	1099.694	1606.61
A	CO2_NBIO_STREX	56.38939	69.11526	75.30048	93.39517	9.392012	7.145813	6.986836	0.014331106	17.09392	16.51823	63.3588	5.08755	19.29379
A	NOX_IDLEX	0	0	0	0	0.101307	0.130059	0.774398	6.443398117	0.585356	0	0	3.635051	0
A	NOX_RUNEX	0.047056	0.155392	0.113491	0.138442	1.929822	1.740955	3.117529	3.587901225	2.591245	1.4276	1.181735	5.322663	2.208173
A	NOX_STREX	0.213273	0.352582	0.374625	0.473504	0.281624	0.180646	1.216733	1.934083212	0.86087	0.147718	0.267623	0.576022	0.23486
A	PM10_IDLEX	0	0	0	0	0.001136	0.001477	0.002547	0.010215843	0.002397	0	0	0.00411	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061025338	0.13034	0.09201	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010243	0.010854	0.012	0.03558172	0.012	0.024383	0.004	0.010821	0.013169
A	PM10_RUNEX	0.001673	0.002612	0.001732	0.001783	0.021236	0.022199	0.07961	0.058847098	0.053875	0.004556	0.001989	0.032717	0.045734
A	PM10_STREX	0.001984	0.003166	0.002043	0.002144	0.000229	0.000123	0.000107	5.75939E-07	0.000165	0.000137	0.003287	5.08E-05	0.000307
A	PM25_IDLEX	0	0	0	0	0.001087	0.001413	0.002436	0.00977391	0.002293	0	0	0.003933	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026153716	0.05586	0.039433	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002561	0.002713	0.003	0.00889543	0.003	0.006096	0.001	0.002705	0.003292
A	PM25_RUNEX	0.001541	0.002405	0.001594	0.001645	0.020276	0.021216	0.076162	0.056301391	0.051531	0.004345	0.001866	0.031287	0.0437
A	PM25_STREX	0.001825	0.002911	0.001879	0.001973	0.000211	0.000113	9.87E-05	5.29555E-07	0.000152	0.000126	0.003107	4.67E-05	0.000283
A	ROG_DIURN	0.072323	0.22668	0.118238	0.133893	0.002801	0.001366	0.000703	2.7044E-06	0.002098	0.000629	3.013092	0.001055	1.417258
A	ROG_HTSK	0.123345	0.319851	0.178265	0.20327	0.079611	0.041743	0.020673	8.25221E-05	0.021169	0.005226	0.98407	0.01017	0.089005
A	ROG_IDLEX	0	0	0	0	0.019636	0.016091	0.019886	0.506750824	0.054252	0	0	0.255018	0
A	ROG_RESTL	0.05299	0.146439	0.089927	0.107922	0.001205	0.000605	0.000295	1.38446E-06	0.000721	0.000305	1.577003	0.000392	0.392715
A	ROG_RUNEX	0.012302	0.041316	0.023262	0.030775	0.146328	0.138123	0.209736	0.110061512	0.174855	0.041022	2.549209	0.143921	0.119568
A	ROG_RUNLS	0.244042	1.081203	0.579469	0.616949	0.527558	0.275622	0.11696	0.000658242	0.272951	0.024243	2.365234	0.056269	2.098437
A	ROG_STREX	0.27398	0.5402	0.418147	0.553337	0.074129	0.043708	0.039339	6.79001E-07	0.109503	0.084309	1.991275	0.043311	0.109164
A	SO2_IDLEX	0	0	0	0	9.38E-05	0.000144	0.000806	0.011537996	0.000865	0	0	0.00345	0
A	SO2_RUNEX	8.06E-05	0.002925	0.010858	0.004371	0.007543	0.007686	0.010858	0.013630745	0.013611	0.009322	0.002143	0.010509	0.015762
A	SO2_STREX	0	0	6.91E-05	0.000922	9.29E-05	7.07E-05	6.91E-05	1.41818E-07	0.000169	0.000163	0.000627	5.03E-05	0.000191
A	TOG_DIURN	0.072323	0.22668	0.118238	0.133893	0.002801	0.001366	0.000703	2.7044E-06	0.002098	0.000629	3.013092	0.001055	1.417258
A	TOG_HTSK	0.123345	0.319851	0.178265	0.20327	0.079611	0.041743	0.020673	8.25221E-05	0.021169	0.005226	0.98407	0.01017	0.089005
A	TOG_IDLEX	0	0	0	0	0.027217	0.021598	0.025422	0.577373525	0.069089	0	0	0.364712	0
A	TOG_RESTL	0.05299	0.146439	0.089927	0.107922	0.001205	0.000605	0.000295	1.38446E-06	0.000721	0.000305	1.577003	0.000392	0.392715
A	TOG_RUNEX	0.017891	0.060215	0.033888	0.043694	0.177727	0.161373	0.241203	0.130531382	0.210496	2.483282	3.094608	0.18478	0.16031
A	TOG_RUNLS	0.244042	1.081203	0.579469	0.616949	0.527558	0.275622	0.11696	0.000658242	0.272951	0.024243	2.365234	0.056269	2.098437
A	TOG_STREX	0.299972	0.591446	0.457816	0.60577	0.081162	0.047855	0.043071	7.4342E-07	0.119892	0.092308	2.165517	0.04742	0.11952

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	0	0	0	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0	0	0
Site Preparation	18	0	180	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	3024	0	0
Gasoline Equipment	18	0	180	0	38	16.8	6.6	6.6	LD_Mix	HDT_Mix	HHDT	3024	0	250.8
Trenching	15	0	300	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	5040	0	0
Grading	15	0	300	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	5040	0	0
Building Construction	101	40	23230	9200	664	16.8	6.6	6.6	LD_Mix	HDT_Mix	HHDT	390264	60720	4382.4
Paving	15	0	300	0	404	16.8	6.6	6.6	LD_Mix	HDT_Mix	HHDT	5040	0	2666.4
Architectural Coating	20	0	400	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	6720	0	0

Number of Days Per Year				
2021	9/6/21	12/31/21	117	
2022	1/1/22	10/10/22	282	
			399	**286 *Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	9/6/2021	9/6/2021	5	1
Site Preparation	9/6/2021	9/17/2021	5	10
Gasoline Equipment	9/17/2021	9/30/2021	5	10
Trenching	9/17/2021	10/14/2021	5	20
Grading	9/30/2021	10/27/2021	5	20
Building Construction	10/27/2021	9/13/2022	5	230
Paving	9/13/2022	10/10/2022	5	20
Architectural Coating	9/13/2022	10/10/2022	5	20

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
	Grams										
Hauling	1364.70	35455.74	10568.568	112.260	2182.58	1146.05	3328.6	328.41	677.63	1006.04	11906202.15
Vendor	12301.32	269052.99	78239.5	854.836	18155.28	10709.15	28864.4	2731.79	6402.87	9134.66	90518429.81
Worker	31845.69	35067.22	433989.4	1094.103	125027.45	19494.11	144521.6	18812.66	8142.06	26954.72	125695024.6
Total (g)	45511.70	339575.955	522797.39	2061.19931	145365.3084	31349.3155	176714.62	21872.86028	15222.56941	37095.42969	228119656.5
Total (lbs)	100.34	748.64	1152.57	4.54	320.48	69.1	389.59	48.22	33.56	81.78	502917.7552
Total (tons)	0.0502	0.374	0.576	0.002	0.160	0.0346	0.1948	0.0241	0.017	0.041	251.46
Total (MT)											228.12

YEAR	Tons										
2021 - 2022	0.0147	0.1098	0.1690	0.0007	0.0470	0.0101	0.0571	0.0071	0.0049	0.0120	66.8922
2022-02023	0.0355	0.2646	0.4073	0.0016	0.1133	0.0244	0.1377	0.0170	0.0119	0.0289	161.2274

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	683.02	13233.71	7768.9234	27.837	330.69	183.23	513.9	49.76	111.84	161.60	2951145.074
Vendor	5109.05	91386.30	50827.5	194.921	2750.80	1684.85	4435.7	413.91	1029.68	1443.59	20642474.62
Worker	25331.55	8114.13	84437.0	65.478	7442.11	1208.89	8651.0	1119.80	529.27	1649.07	8917634.289
Total (g)	31123.62	112734.1395	143033.5	288.2359206	10523.604	3076.979489	13600.583	1583.46804	1670.800444	3254.268484	32511253.99
Total (lbs)	68.62	248.54	315.33	0.64	23.20	6.8	29.98	3.49	3.68	7.17	71675.046
Total (tons)	0.0343	0.124	0.158	0.000	0.012	0.0034	0.0150	0.0017	0.002	0.004	35.84
Total (MT)											32.51

YEAR						*Tons*					
2021 - 2022	0.0101	0.0364	0.0462	0.0001	0.0034	0.0010	0.0044	0.0005	0.0005	0.0011	9.5334
2022-02023	0.0242	0.0878	0.1114	0.0002	0.0082	0.0024	0.0106	0.0012	0.0013	0.0025	22.9779

CalEEMod EMFAC2017 Fleet Mix Input - 2023

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.528248	0.046239	0.154436	0.137045	0.029114	0.007299	0.022762	0.056488	0.001315	0.000659	0.014216	0.001292	0.000888

CalEEMod EMFAC2017 Emission Factors Input - 2023

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004151	0.002972	0.002591	0.023237302	0.006979	0	0	0.055021	0
A	CH4_RUNEX	0.002294	0.006562	0.004243	0.005163	0.010649	0.007918	0.00145	0.005718512	0.006244	2.781865	0.35883	0.016022	0.014905
A	CH4_STREX	0.049678	0.08231	0.072884	0.091207	0.013127	0.007909	0.006727	1.28918E-07	0.019441	0.021199	0.254007	0.00776	0.022931
A	CO_IDLEX	0	0	0	0	0.158902	0.130256	0.357534	7.222668803	0.547723	0	0	2.298717	0
A	CO_RUNEX	0.616125	1.312019	0.941358	1.039935	1.029104	0.763044	0.218035	0.221156176	0.73169	20.91456	21.43338	1.693069	1.593061
A	CO_STREX	2.171567	2.469276	2.834596	3.394347	0.858821	0.531159	0.80484	0.001719844	2.269087	1.440793	8.897361	1.187857	2.187151
A	CO2_NBIO_IDLEX	0	0	0	0	9.643024	14.92866	80.43391	1186.974306	86.56892	0	0	362.9154	0
A	CO2_NBIO_RUNEX	261.4822	313.4421	336.2153	421.9588	765.0453	781.6814	1073.268	1348.519201	1366.052	1765.951	216.2484	1087.459	1566.574
A	CO2_NBIO_STREX	53.52556	65.79847	70.835	89.09461	9.212348	6.93358	6.767335	0.010056904	16.7625	16.4738	62.70541	5.261096	18.33002
A	NOX_IDLEX	0	0	0	0	0.098094	0.124955	0.499064	5.932692845	0.342177	0	0	3.538598	0
A	NOX_RUNEX	0.035149	0.112103	0.084092	0.103948	1.690559	1.5221	1.56611	2.395114136	1.532143	0.951917	1.174481	5.086771	2.08234
A	NOX_STREX	0.184009	0.295381	0.310203	0.40138	0.270394	0.172674	1.828245	2.391480386	1.043806	0.158173	0.267975	0.633943	0.234588
A	PM10_IDLEX	0	0	0	0	0.001134	0.001491	0.000456	0.002509686	0.000111	0	0	0.003604	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060941786	0.13034	0.09201	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010231	0.010869	0.012	0.03553264	0.012	0.024383	0.004	0.010786	0.013215
A	PM10_RUNEX	0.001527	0.002181	0.001585	0.001646	0.019762	0.02142	0.007745	0.02594771	0.007096	0.004089	0.002046	0.030942	0.043899
A	PM10_STREX	0.001818	0.002697	0.001874	0.00193	0.000211	0.000112	8.98E-05	2.55573E-07	0.00017	0.000139	0.003057	5.37E-05	0.00027
A	PM25_IDLEX	0	0	0	0	0.001085	0.001426	0.000436	0.002401118	0.000106	0	0	0.003448	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026117908	0.05586	0.039433	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002558	0.002717	0.003	0.00888316	0.003	0.006096	0.001	0.002697	0.003304
A	PM25_RUNEX	0.001406	0.002007	0.001459	0.001518	0.018868	0.020472	0.007407	0.024825217	0.006776	0.003898	0.001917	0.029588	0.041951
A	PM25_STREX	0.001671	0.00248	0.001723	0.001775	0.000194	0.000103	8.26E-05	2.3499E-07	0.000156	0.000128	0.002884	4.94E-05	0.000249
A	ROG_DIURN	0.059888	0.187686	0.107638	0.128905	0.002609	0.001278	0.000532	8.78382E-07	0.002166	0.000934	3.02875	0.001217	1.229109
A	ROG_HTSK	0.10511	0.268203	0.15967	0.193755	0.075406	0.039401	0.017345	2.73529E-05	0.022007	0.00897	0.971223	0.011733	0.078805
A	ROG_IDLEX	0	0	0	0	0.01906	0.015639	0.015287	0.490875846	0.044549	0	0	0.266	0
A	ROG_RESTL	0.044865	0.124481	0.083944	0.106566	0.001146	0.000589	0.00023	4.21951E-07	0.000755	0.00047	1.570906	0.00046	0.349934
A	ROG_RUNEX	0.008703	0.029199	0.017578	0.02205	0.135215	0.132165	0.015797	0.022646002	0.03735	0.04617	2.492706	0.139583	0.101449
A	ROG_RUNLS	0.221042	0.908684	0.532186	0.597848	0.500201	0.248894	0.097753	0.000140089	0.287412	0.053191	2.210893	0.064452	1.854744
A	ROG_STREX	0.222129	0.428978	0.349561	0.467238	0.066924	0.039432	0.036533	6.7327E-07	0.104983	0.092067	1.967262	0.047609	0.099843
A	SO2_IDLEX	0	0	0	0	9.29E-05	0.000142	0.000762	0.011203395	0.000823	0	0	0.003456	0
A	SO2_RUNEX	8.68E-05	0.002996	0.010191	0.00412	0.007431	0.007535	0.010191	0.012712139	0.013161	0.008028	0.00214	0.010396	0.015362
A	SO2_STREX	0	0	6.7E-05	0.000871	9.12E-05	6.86E-05	6.7E-05	9.95212E-08	0.000166	0.000163	0.000621	5.21E-05	0.000181
A	TOG_DIURN	0.059888	0.187686	0.107638	0.128905	0.002609	0.001278	0.000532	8.78382E-07	0.002166	0.000934	3.02875	0.001217	1.229109
A	TOG_HTSK	0.10511	0.268203	0.15967	0.193755	0.075406	0.039401	0.017345	2.73529E-05	0.022007	0.00897	0.971223	0.011733	0.078805
A	TOG_IDLEX	0	0	0	0	0.026365	0.020922	0.020233	0.559266097	0.058058	0	0	0.381025	0
A	TOG_RESTL	0.044865	0.124481	0.083944	0.106566	0.001146	0.000589	0.00023	4.21951E-07	0.000755	0.00047	1.570906	0.00046	0.349934
A	TOG_RUNEX	0.012651	0.04258	0.025606	0.032022	0.162967	0.153676	0.019474	0.030496921	0.051792	2.846349	3.04811	0.179146	0.13377
A	TOG_RUNLS	0.221042	0.908684	0.532186	0.597848	0.500201	0.248894	0.097753	0.000140089	0.287412	0.053191	2.210893	0.064452	1.854744
A	TOG_STREX	0.243203	0.469676	0.382725	0.511563	0.073273	0.043173	0.039999	7.37146E-07	0.114943	0.100802	2.139884	0.052125	0.109316

Stanislaus Co Pirrone Rd Comercial Development
Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	62.34	1000sqft	3.62	62,340.00	0
Other Asphalt Surfaces	69.00	1000sqft	0.00	69,000.00	0
Other Asphalt Surfaces	88.10	1000sqft	0.00	88,100.00	0
Parking Lot	34.00	Space	0.00	13,600.00	0
Fast Food Restaurant with Drive Thru	3.25	1000sqft	0.00	3,250.00	0
Convenience Market With Gas Pumps	4.50	1000sqft	2.04	4,500.00	0
Strip Mall	2.31	1000sqft	0.00	2,310.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Default Intensity Factor

Land Use - Per Plans submitted by the applicant in January 2021. Idustrial LU represents Mini Storage. Other Asphalt area estiamted from plans.

Construction Phase - Based on CalEEMod Default, No Demo

Off-road Equipment -

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - No Demolition

Off-road Equipment - Based on Grading default equipment. Assume concrete saw will be needed

Off-road Equipment - Based on CalEEMod Default.

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - Based on CalEEMod Defaults

Off-road Equipment - Based on Grading Default

Trips and VMT - Concrete and Asphalt haul trips estimated from plans provided by applicant. Concrete work anticipated over two phases.

Demolition - No demolition needed

Grading - Assume ballenced site; cut=fill. No material import/export

Architectural Coating - Parking area estimated from plans provided by client.

Vehicle Trips - Based on ITE 10th Ed. Trip Gen Rates provided by PTE's Traffic Study, 2020, and default CalEEMod Rates

Vehicle Emission Factors - From EMFAC2017, Stanislaus Co - 2005

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - Estimated off of plans provided by applicant

Energy Use -

Water And Wastewater - Assume city services hook-up, WWTP

Construction Off-road Equipment Mitigation - Basic BPMs for fugitive dust. T3L3 Mitigation.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	10,242.00	6,496.00
tblAreaCoating	Area_Parking	10242	6496
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblFleetMix	HHD	0.07	0.05
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tblFleetMix	LDT1	0.07	0.07
tblFleetMix	LDT1	0.07	0.07
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tblFleetMix	LHD1	0.05	0.05

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tblFleetMix	MDV	0.19	0.18
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tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02

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tblFleetMix	UBUS	9.9900e-004	4.8153e-004
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
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tblVehicleEF	LDA	0.22	1.20
tblVehicleEF	LDA	0.87	1.33
tblVehicleEF	LDA	0.03	0.03

tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDA	3.64	4.47
tblVehicleEF	LDA	8.06	5.38
tblVehicleEF	LDA	331.49	342.44
tblVehicleEF	LDA	73.90	79.91
tblVehicleEF	LDA	0.39	0.51
tblVehicleEF	LDA	0.52	0.75
tblVehicleEF	LDA	6.4420e-003	6.2400e-003
tblVehicleEF	LDA	8.9180e-003	7.7200e-003
tblVehicleEF	LDA	5.9730e-003	5.7740e-003
tblVehicleEF	LDA	8.2560e-003	7.1460e-003
tblVehicleEF	LDA	0.23	0.31
tblVehicleEF	LDA	0.39	0.38
tblVehicleEF	LDA	0.12	0.16
tblVehicleEF	LDA	0.13	0.14
tblVehicleEF	LDA	0.22	1.20
tblVehicleEF	LDA	0.80	1.22
tblVehicleEF	LDT1	3.9300e-003	0.01
tblVehicleEF	LDT1	1.1220e-003	0.00
tblVehicleEF	LDT1	0.39	0.53
tblVehicleEF	LDT1	0.72	0.70
tblVehicleEF	LDT1	0.21	0.28
tblVehicleEF	LDT1	0.40	0.44
tblVehicleEF	LDT1	0.54	2.69
tblVehicleEF	LDT1	1.31	1.75
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.09	0.26
tblVehicleEF	LDT1	8.34	8.93
tblVehicleEF	LDT1	13.71	7.32
tblVehicleEF	LDT1	378.71	397.92

tblVehicleEF	LDT1	88.32	97.52
tblVehicleEF	LDT1	0.84	1.03
tblVehicleEF	LDT1	0.70	0.99
tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	9.4350e-003	9.3950e-003
tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	0.39	0.53
tblVehicleEF	LDT1	0.72	0.70
tblVehicleEF	LDT1	0.21	0.28
tblVehicleEF	LDT1	0.32	0.35
tblVehicleEF	LDT1	0.54	2.69
tblVehicleEF	LDT1	1.20	1.60
tblVehicleEF	LDT2	4.5830e-003	0.10
tblVehicleEF	LDT2	1.1740e-003	2.8200e-004
tblVehicleEF	LDT2	0.21	0.27
tblVehicleEF	LDT2	0.35	0.33
tblVehicleEF	LDT2	0.11	0.14
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.22	1.27
tblVehicleEF	LDT2	0.95	1.48
tblVehicleEF	LDT2	0.04	0.03
tblVehicleEF	LDT2	0.06	0.24
tblVehicleEF	LDT2	4.39	5.52
tblVehicleEF	LDT2	9.63	6.61
tblVehicleEF	LDT2	457.04	467.58
tblVehicleEF	LDT2	101.07	106.42
tblVehicleEF	LDT2	0.66	0.87
tblVehicleEF	LDT2	0.87	1.31
tblVehicleEF	LDT2	5.2200e-003	5.4530e-003

tblVehicleEF	LDT2	8.0410e-003	6.9090e-003
tblVehicleEF	LDT2	4.8250e-003	5.0370e-003
tblVehicleEF	LDT2	7.4480e-003	6.3970e-003
tblVehicleEF	LDT2	0.21	0.27
tblVehicleEF	LDT2	0.35	0.33
tblVehicleEF	LDT2	0.11	0.14
tblVehicleEF	LDT2	0.15	0.18
tblVehicleEF	LDT2	0.22	1.27
tblVehicleEF	LDT2	0.87	1.36
tblVehicleEF	LHD1	4.6800e-004	4.6000e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	4.6100e-004	1.2700e-004
tblVehicleEF	LHD1	5.4250e-003	5.4590e-003
tblVehicleEF	LHD1	0.14	0.14
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.9060e-003	1.9170e-003
tblVehicleEF	LHD1	0.41	0.40
tblVehicleEF	LHD1	0.23	0.69
tblVehicleEF	LHD1	0.61	0.15
tblVehicleEF	LHD1	6.2790e-003	4.6310e-003
tblVehicleEF	LHD1	0.08	0.04
tblVehicleEF	LHD1	0.04	0.02
tblVehicleEF	LHD1	0.16	0.17
tblVehicleEF	LHD1	4.50	4.36
tblVehicleEF	LHD1	7.43	1.98
tblVehicleEF	LHD1	9.26	9.63
tblVehicleEF	LHD1	724.16	839.44
tblVehicleEF	LHD1	33.23	13.03
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	3.91	3.85

tblVehicleEF	LHD1	1.08	0.24
tblVehicleEF	LHD1	1.3090e-003	1.2830e-003
tblVehicleEF	LHD1	0.01	9.9700e-003
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	3.0470e-003	8.5000e-004
tblVehicleEF	LHD1	1.2520e-003	1.2270e-003
tblVehicleEF	LHD1	2.5010e-003	2.4920e-003
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.8250e-003	7.8800e-004
tblVehicleEF	LHD1	5.4250e-003	5.4590e-003
tblVehicleEF	LHD1	0.14	0.14
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.9060e-003	1.9170e-003
tblVehicleEF	LHD1	0.31	0.31
tblVehicleEF	LHD1	0.23	0.69
tblVehicleEF	LHD1	0.56	0.14
tblVehicleEF	LHD2	9.2900e-004	9.1900e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	3.6100e-004	1.0400e-004
tblVehicleEF	LHD2	3.2900e-003	3.3250e-003
tblVehicleEF	LHD2	0.08	0.09
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	1.1300e-003	1.1420e-003
tblVehicleEF	LHD2	0.31	0.31
tblVehicleEF	LHD2	0.14	0.44
tblVehicleEF	LHD2	0.39	0.11
tblVehicleEF	LHD2	4.8870e-003	3.6620e-003
tblVehicleEF	LHD2	0.05	0.03
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	0.14	0.15

tblVehicleEF	LHD2	2.83	2.85
tblVehicleEF	LHD2	4.75	1.48
tblVehicleEF	LHD2	13.91	14.24
tblVehicleEF	LHD2	771.90	875.73
tblVehicleEF	LHD2	28.01	10.65
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	4.74	4.69
tblVehicleEF	LHD2	0.77	0.18
tblVehicleEF	LHD2	1.5820e-003	1.5680e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	1.8160e-003	5.1000e-004
tblVehicleEF	LHD2	1.5130e-003	1.5000e-003
tblVehicleEF	LHD2	2.6390e-003	2.6320e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	1.6790e-003	4.7100e-004
tblVehicleEF	LHD2	3.2900e-003	3.3250e-003
tblVehicleEF	LHD2	0.08	0.09
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1300e-003	1.1420e-003
tblVehicleEF	LHD2	0.24	0.25
tblVehicleEF	LHD2	0.14	0.44
tblVehicleEF	LHD2	0.36	0.10
tblVehicleEF	MCY	2.0710e-003	2.0770e-003
tblVehicleEF	MCY	7.7700e-004	6.7600e-004
tblVehicleEF	MCY	1.39	2.78
tblVehicleEF	MCY	1.10	1.11
tblVehicleEF	MCY	0.77	1.55
tblVehicleEF	MCY	3.41	3.41
tblVehicleEF	MCY	1.25	5.17

tblVehicleEF	MCY	2.93	2.57
tblVehicleEF	MCY	0.30	0.40
tblVehicleEF	MCY	0.20	0.30
tblVehicleEF	MCY	33.93	33.93
tblVehicleEF	MCY	9.83	8.55
tblVehicleEF	MCY	146.78	212.56
tblVehicleEF	MCY	54.53	69.21
tblVehicleEF	MCY	1.29	1.29
tblVehicleEF	MCY	0.32	0.26
tblVehicleEF	MCY	4.1560e-003	4.1470e-003
tblVehicleEF	MCY	0.01	8.6580e-003
tblVehicleEF	MCY	3.9510e-003	3.9410e-003
tblVehicleEF	MCY	9.5710e-003	8.2450e-003
tblVehicleEF	MCY	1.39	2.78
tblVehicleEF	MCY	1.10	1.11
tblVehicleEF	MCY	0.77	1.55
tblVehicleEF	MCY	3.03	3.03
tblVehicleEF	MCY	1.25	5.17
tblVehicleEF	MCY	2.70	2.37
tblVehicleEF	MDV	5.7430e-003	5.0440e-003
tblVehicleEF	MDV	1.4000e-003	1.1280e-003
tblVehicleEF	MDV	0.13	0.17
tblVehicleEF	MDV	0.20	0.19
tblVehicleEF	MDV	0.07	0.10
tblVehicleEF	MDV	0.17	0.18
tblVehicleEF	MDV	0.12	0.71
tblVehicleEF	MDV	1.00	1.50
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.07	0.24
tblVehicleEF	MDV	3.96	4.68

tblVehicleEF	MDV	9.98	7.59
tblVehicleEF	MDV	568.89	510.00
tblVehicleEF	MDV	123.31	115.37
tblVehicleEF	MDV	0.67	0.69
tblVehicleEF	MDV	0.88	1.21
tblVehicleEF	MDV	4.1010e-003	4.2580e-003
tblVehicleEF	MDV	7.1360e-003	6.1630e-003
tblVehicleEF	MDV	3.7960e-003	3.9390e-003
tblVehicleEF	MDV	6.5900e-003	5.6900e-003
tblVehicleEF	MDV	0.13	0.17
tblVehicleEF	MDV	0.20	0.19
tblVehicleEF	MDV	0.07	0.10
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.12	0.71
tblVehicleEF	MDV	0.92	1.37
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.4220e-003	3.6500e-004
tblVehicleEF	MH	3.21	3.20
tblVehicleEF	MH	0.22	0.22
tblVehicleEF	MH	0.86	0.86
tblVehicleEF	MH	1.06	0.93
tblVehicleEF	MH	0.03	2.16
tblVehicleEF	MH	1.83	0.53
tblVehicleEF	MH	0.18	0.11
tblVehicleEF	MH	0.12	0.07
tblVehicleEF	MH	25.21	21.24
tblVehicleEF	MH	23.09	4.33
tblVehicleEF	MH	1,281.49	1,807.40
tblVehicleEF	MH	102.47	37.34
tblVehicleEF	MH	3.36	3.21

tblVehicleEF	MH	1.91	0.29
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	8.0740e-003	2.2590e-003
tblVehicleEF	MH	3.1320e-003	3.1450e-003
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	7.6010e-003	2.1270e-003
tblVehicleEF	MH	3.21	3.20
tblVehicleEF	MH	0.22	0.22
tblVehicleEF	MH	0.86	0.86
tblVehicleEF	MH	0.84	0.74
tblVehicleEF	MH	0.03	2.16
tblVehicleEF	MH	1.68	0.49
tblVehicleEF	MHD	9.4980e-003	5.2380e-003
tblVehicleEF	MHD	0.10	0.10
tblVehicleEF	MHD	2.0200e-003	2.8200e-004
tblVehicleEF	MHD	9.4210e-003	5.4960e-003
tblVehicleEF	MHD	0.47	0.27
tblVehicleEF	MHD	0.16	0.10
tblVehicleEF	MHD	3.7190e-003	2.1680e-003
tblVehicleEF	MHD	1.12	1.43
tblVehicleEF	MHD	0.17	1.00
tblVehicleEF	MHD	3.12	0.50
tblVehicleEF	MHD	0.02	6.0520e-003
tblVehicleEF	MHD	0.07	0.07
tblVehicleEF	MHD	0.35	0.05
tblVehicleEF	MHD	1.09	0.65
tblVehicleEF	MHD	5.12	6.02
tblVehicleEF	MHD	30.07	1.88
tblVehicleEF	MHD	120.87	68.52

tblVehicleEF	MHD	1,215.16	1,333.78
tblVehicleEF	MHD	148.28	28.81
tblVehicleEF	MHD	1.76	0.97
tblVehicleEF	MHD	11.31	11.60
tblVehicleEF	MHD	2.93	0.17
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.46	0.54
tblVehicleEF	MHD	0.01	2.3150e-003
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.44	0.52
tblVehicleEF	MHD	0.01	2.1950e-003
tblVehicleEF	MHD	9.4210e-003	5.4960e-003
tblVehicleEF	MHD	0.47	0.27
tblVehicleEF	MHD	0.14	0.08
tblVehicleEF	MHD	3.7190e-003	2.1680e-003
tblVehicleEF	MHD	0.97	1.24
tblVehicleEF	MHD	0.17	1.00
tblVehicleEF	MHD	2.87	0.46
tblVehicleEF	OBUS	0.01	6.9070e-003
tblVehicleEF	OBUS	0.08	0.07
tblVehicleEF	OBUS	1.3170e-003	2.9300e-004
tblVehicleEF	OBUS	5.9340e-003	4.9730e-003
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	OBUS	0.30	0.20
tblVehicleEF	OBUS	1.7030e-003	1.4280e-003
tblVehicleEF	OBUS	1.09	1.01
tblVehicleEF	OBUS	0.10	0.51
tblVehicleEF	OBUS	1.71	0.34
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.09	0.07

tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	1.15	0.78
tblVehicleEF	OBUS	6.12	9.22
tblVehicleEF	OBUS	20.62	3.94
tblVehicleEF	OBUS	140.04	92.00
tblVehicleEF	OBUS	1,388.43	1,718.57
tblVehicleEF	OBUS	96.08	29.97
tblVehicleEF	OBUS	1.97	1.22
tblVehicleEF	OBUS	10.35	8.54
tblVehicleEF	OBUS	2.75	0.33
tblVehicleEF	OBUS	0.04	0.03
tblVehicleEF	OBUS	0.37	0.31
tblVehicleEF	OBUS	5.9370e-003	1.3730e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.35	0.30
tblVehicleEF	OBUS	5.5960e-003	1.2940e-003
tblVehicleEF	OBUS	5.9340e-003	4.9730e-003
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	OBUS	0.25	0.17
tblVehicleEF	OBUS	1.7030e-003	1.4280e-003
tblVehicleEF	OBUS	0.92	0.83
tblVehicleEF	OBUS	0.10	0.51
tblVehicleEF	OBUS	1.57	0.31
tblVehicleEF	SBUS	0.07	0.02
tblVehicleEF	SBUS	0.07	0.06
tblVehicleEF	SBUS	1.3100e-003	1.4700e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.23	0.10
tblVehicleEF	SBUS	2.44	1.05
tblVehicleEF	SBUS	8.6850e-003	3.7690e-003

tblVehicleEF	SBUS	1.44	1.35
tblVehicleEF	SBUS	0.17	0.92
tblVehicleEF	SBUS	2.48	0.23
tblVehicleEF	SBUS	0.83	0.11
tblVehicleEF	SBUS	0.17	0.12
tblVehicleEF	SBUS	0.34	0.03
tblVehicleEF	SBUS	13.70	5.68
tblVehicleEF	SBUS	15.25	15.31
tblVehicleEF	SBUS	35.26	3.72
tblVehicleEF	SBUS	1,026.74	382.97
tblVehicleEF	SBUS	1,022.16	1,105.30
tblVehicleEF	SBUS	70.05	15.00
tblVehicleEF	SBUS	11.92	3.98
tblVehicleEF	SBUS	8.38	8.08
tblVehicleEF	SBUS	3.56	0.14
tblVehicleEF	SBUS	0.30	0.10
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.34	0.30
tblVehicleEF	SBUS	7.3750e-003	8.9700e-004
tblVehicleEF	SBUS	0.28	0.09
tblVehicleEF	SBUS	2.5490e-003	2.5350e-003
tblVehicleEF	SBUS	0.32	0.29
tblVehicleEF	SBUS	6.9000e-003	8.3900e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.23	0.10
tblVehicleEF	SBUS	1.90	0.80
tblVehicleEF	SBUS	8.6850e-003	3.7690e-003
tblVehicleEF	SBUS	1.19	1.10
tblVehicleEF	SBUS	0.17	0.92
tblVehicleEF	SBUS	2.27	0.21

tblVehicleEF	UBUS	0.16	0.13
tblVehicleEF	UBUS	1.4000e-003	3.0000e-006
tblVehicleEF	UBUS	0.01	2.0000e-005
tblVehicleEF	UBUS	0.20	2.0900e-004
tblVehicleEF	UBUS	5.5680e-003	1.2000e-005
tblVehicleEF	UBUS	2.86	0.41
tblVehicleEF	UBUS	0.03	4.0400e-004
tblVehicleEF	UBUS	1.96	2.4500e-003
tblVehicleEF	UBUS	0.95	0.30
tblVehicleEF	UBUS	0.13	5.4400e-004
tblVehicleEF	UBUS	18.21	1.56
tblVehicleEF	UBUS	27.58	0.03
tblVehicleEF	UBUS	2,337.67	1,551.39
tblVehicleEF	UBUS	92.77	0.30
tblVehicleEF	UBUS	26.27	14.05
tblVehicleEF	UBUS	5.03	4.2760e-003
tblVehicleEF	UBUS	0.64	0.10
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.53	0.10
tblVehicleEF	UBUS	2.6290e-003	7.0000e-006
tblVehicleEF	UBUS	0.27	0.04
tblVehicleEF	UBUS	3.0000e-003	4.9960e-003
tblVehicleEF	UBUS	0.51	0.09
tblVehicleEF	UBUS	2.4380e-003	7.0000e-006
tblVehicleEF	UBUS	0.01	2.0000e-005
tblVehicleEF	UBUS	0.20	2.0900e-004
tblVehicleEF	UBUS	5.5680e-003	1.2000e-005
tblVehicleEF	UBUS	1.77	0.09
tblVehicleEF	UBUS	0.03	4.0400e-004
tblVehicleEF	UBUS	1.79	2.2380e-003

tblVehicleTrips	ST_TR	1,448.33	936.32
tblVehicleTrips	ST_TR	722.03	685.40
tblVehicleTrips	ST_TR	42.04	35.81
tblVehicleTrips	ST_TR	1.68	1.65
tblVehicleTrips	SU_TR	1,182.08	764.20
tblVehicleTrips	SU_TR	542.72	515.19
tblVehicleTrips	SU_TR	20.43	17.40
tblVehicleTrips	SU_TR	1.68	1.65
tblVehicleTrips	WD_TR	845.60	546.67
tblVehicleTrips	WD_TR	496.12	470.95
tblVehicleTrips	WD_TR	44.32	37.75
tblVehicleTrips	WD_TR	1.68	1.65
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1303	1.3181	0.9265	1.6200e-003	0.2462	0.0667	0.3128	0.1330	0.0618	0.1948	0.0000	141.1361	141.1361	0.0411	0.0000	142.1630
2022	0.6943	1.5464	1.6530	2.7100e-003	0.0000	0.0801	0.0801	0.0000	0.0753	0.0753	0.0000	233.4508	233.4508	0.0572	0.0000	234.8798
Maximum	**0.6943**	**1.5464**	**1.6530**	**2.7100e-003**	**0.2462**	**0.0801**	**0.3128**	**0.1330**	**0.0753**	**0.1948**	**0.0000**	**233.4508**	**233.4508**	**0.0572**	**0.0000**	**234.8798**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0400	0.8289	1.0384	1.6200e-003	0.1108	6.9400e-003	0.1177	0.0598	6.9400e-003	0.0668	0.0000	141.1359	141.1359	0.0411	0.0000	142.1629
2022	0.5935	1.4211	1.8178	2.7100e-003	0.0000	0.0134	0.0134	0.0000	0.0134	0.0134	0.0000	233.4505	233.4505	0.0572	0.0000	234.8796
Maximum	**0.5935**	**1.4211**	**1.8178**	**2.7100e-003**	**0.1108**	**0.0134**	**0.1177**	**0.0598**	**0.0134**	**0.0668**	**0.0000**	**233.4505**	**233.4505**	**0.0572**	**0.0000**	**234.8796**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**23.18**	**21.45**	**-10.73**	**0.00**	**55.00**	**86.15**	**66.64**	**55.00**	**85.17**	**70.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-6-2021**	**12-5-2021**	1.2289	0.7099
2	**12-6-2021**	**3-5-2022**	0.5754	0.4789
3	**3-6-2022**	**6-5-2022**	0.5691	0.4896
4	**6-6-2022**	**9-5-2022**	0.5691	0.4896
5	**9-6-2022**	**9-30-2022**	0.4766	0.4660
		Highest	1.2289	0.7099

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3803	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003
Energy	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	315.7412	315.7412	0.0117	3.8600e-003	317.1819
Mobile	7.2407	10.9782	31.6549	0.1185	1.2661	0.2432	1.5093	0.3400	0.2317	0.5717	0.0000	1,994.9434	1,994.9434	0.4818	0.0000	2,006.9887
Waste						0.0000	0.0000		0.0000	0.0000	22.7330	0.0000	22.7330	1.3435	0.0000	56.3199
Water						0.0000	0.0000		0.0000	0.0000	5.6279	25.4185	31.0465	0.0205	0.0125	35.2775
Total	**7.6312**	**11.0706**	**31.7356**	**0.1191**	**1.2661**	**0.2502**	**1.5163**	**0.3400**	**0.2387**	**0.5787**	**28.3609**	**2,336.1079**	**2,364.4688**	**1.8575**	**0.0163**	**2,415.7733**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	0.3803	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003
Energy	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	315.7412	315.7412	0.0117	3.8600e-003	317.1819
Mobile	7.2407	10.9782	31.6549	0.1185	1.2661	0.2432	1.5093	0.3400	0.2317	0.5717	0.0000	1,994.9434	1,994.9434	0.4818	0.0000	2,006.9887
Waste						0.0000	0.0000		0.0000	0.0000	22.7330	0.0000	22.7330	1.3435	0.0000	56.3199
Water						0.0000	0.0000		0.0000	0.0000	5.6279	25.4185	31.0465	0.0205	0.0125	35.2775
Total	**7.6312**	**11.0706**	**31.7356**	**0.1191**	**1.2661**	**0.2502**	**1.5163**	**0.3400**	**0.2387**	**0.5787**	**28.3609**	**2,336.1079**	**2,364.4688**	**1.8575**	**0.0163**	**2,415.7733**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/6/2021	9/6/2021	5	1	
2	Site Preparation	Site Preparation	9/6/2021	9/17/2021	5	10	
3	Gasoline Equipment	Site Preparation	9/17/2021	9/30/2021	5	10	
4	Trenching	Trenching	9/17/2021	10/14/2021	5	20	
5	Grading	Grading	9/30/2021	10/27/2021	5	20	
6	Building Construction	Building Construction	10/27/2021	9/13/2022	5	230	
7	Paving	Paving	9/13/2022	10/10/2022	5	20	
8	Architectural Coating	Architectural Coating	9/13/2022	10/10/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 108,600; Non-Residential Outdoor: 36,200; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	0	0.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Gasoline Equipment	Rubber Tired Dozers	3	8.00	247	0.40
Gasoline Equipment	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41
Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Gasoline Equipment	7	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Reduce Vehicle Speed on Unpaved Roads

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**7.1000e-004**	**0.0414**	**0.0223**	**7.1000e-004**	**0.0231**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Gasoline Equipment - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**7.1000e-004**	**0.0414**	**0.0223**	**7.1000e-004**	**0.0231**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**		**0.0116**	**0.0116**		**0.0107**	**0.0107**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2644**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**		**1.1300e-003**	**1.1300e-003**		**1.1300e-003**	**1.1300e-003**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**	**0.0655**	**0.0116**	**0.0771**	**0.0337**	**0.0107**	**0.0443**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2644**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**	**0.0295**	**1.1300e-003**	**0.0306**	**0.0152**	**1.1300e-003**	**0.0163**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0456	0.4184	0.3978	6.5000e-004		0.0230	0.0230		0.0216	0.0216	0.0000	55.5930	55.5930	0.0134	0.0000	55.9283
Total	**0.0456**	**0.4184**	**0.3978**	**6.5000e-004**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**55.5930**	**55.5930**	**0.0134**	**0.0000**	**55.9283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0162	0.3414	0.4290	6.5000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	55.5929	55.5929	0.0134	0.0000	55.9282
Total	**0.0162**	**0.3414**	**0.4290**	**6.5000e-004**		**3.2500e-003**	**3.2500e-003**		**3.2500e-003**	**3.2500e-003**	**0.0000**	**55.5929**	**55.5929**	**0.0134**	**0.0000**	**55.9282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.1553	1.4210	1.4891	2.4500e-003		0.0736	0.0736		0.0693	0.0693	0.0000	210.8700	210.8700	0.0505	0.0000	212.1329
Total	**0.1553**	**1.4210**	**1.4891**	**2.4500e-003**		**0.0736**	**0.0736**		**0.0693**	**0.0693**	**0.0000**	**210.8700**	**210.8700**	**0.0505**	**0.0000**	**212.1329**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0613	1.2946	1.6265	2.4500e-003		0.0123	0.0123		0.0123	0.0123	0.0000	210.8697	210.8697	0.0505	0.0000	212.1327
Total	**0.0613**	**1.2946**	**1.6265**	**2.4500e-003**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**210.8697**	**210.8697**	**0.0505**	**0.0000**	**212.1327**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	5.6100e-003	0.1130	0.1730	2.3000e-004		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.6100e-003**	**0.1130**	**0.1730**	**2.3000e-004**		**9.1000e-004**	**9.1000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5280**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9000e-004	0.0136	0.0183	3.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.5265**	**0.0136**	**0.0183**	**3.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.2407	10.9782	31.6549	0.1185	1.2661	0.2432	1.5093	0.3400	0.2317	0.5717	0.0000	1,994.9434	1,994.9434	0.4818	0.0000	2,006.9887
Unmitigated	7.2407	10.9782	31.6549	0.1185	1.2661	0.2432	1.5093	0.3400	0.2317	0.5717	0.0000	1,994.9434	1,994.9434	0.4818	0.0000	2,006.9887

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,460.02	4,213.44	3438.90	1,398,558	1,398,558
Fast Food Restaurant with Drive Thru	1,530.59	2,227.55	1674.37	1,424,942	1,424,942
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	87.20	82.72	40.19	127,433	127,433
Unrefrigerated Warehouse-No Rail	102.86	102.86	102.86	397,400	397,400
Total	4,180.67	6,626.57	5,256.32	3,348,332	3,348,332

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas Pumps	14.70	6.60	6.60	0.80	80.20	19.00	14	21	65
Fast Food Restaurant with Drive Thru	14.70	6.60	6.60	2.20	78.80	19.00	29	21	50
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Strip Mall	14.70	6.60	6.60	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566
Fast Food Restaurant with Drive Thru	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566
Other Asphalt Surfaces	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566
Parking Lot	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566
Strip Mall	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566
Unrefrigerated Warehouse-No Rail	0.442134	0.067977	0.151340	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	215.2124	215.2124	9.7300e-003	2.0100e-003	216.0557
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	215.2124	215.2124	9.7300e-003	2.0100e-003	216.0557
NaturalGas Mitigated	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	100.5288	100.5288	1.9300e-003	1.8400e-003	101.1262
NaturalGas Unmitigated	0.0102	0.0924	0.0776	5.5000e-004		7.0200e-003	7.0200e-003		7.0200e-003	7.0200e-003	0.0000	100.5288	100.5288	1.9300e-003	1.8400e-003	101.1262

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	48150	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5695	2.5695	5.0000e-005	5.0000e-005	2.5847
Fast Food Restaurant with Drive Thru	683865	3.6900e-003	0.0335	0.0282	2.0000e-004		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	36.4936	36.4936	7.0000e-004	6.7000e-004	36.7105
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	24717	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3190	1.3190	3.0000e-005	2.0000e-005	1.3268
Unrefrigerated Warehouse-No Rail	1.12711e+006	6.0800e-003	0.0553	0.0464	3.3000e-004		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	60.1467	60.1467	1.1500e-003	1.1000e-003	60.5042
Total		**0.0102**	**0.0923**	**0.0776**	**5.5000e-004**		**7.0200e-003**	**7.0200e-003**		**7.0200e-003**	**7.0200e-003**	**0.0000**	**100.5288**	**100.5288**	**1.9300e-003**	**1.8400e-003**	**101.1262**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	48150	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5695	2.5695	5.0000e-005	5.0000e-005	2.5847
Fast Food Restaurant with Drive Thru	683865	3.6900e-003	0.0335	0.0282	2.0000e-004		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	36.4936	36.4936	7.0000e-004	6.7000e-004	36.7105
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	24717	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3190	1.3190	3.0000e-005	2.0000e-005	1.3268
Unrefrigerated Warehouse-No Rail	1.12711e+006	6.0800e-003	0.0553	0.0464	3.3000e-004		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	60.1467	60.1467	1.1500e-003	1.1000e-003	60.5042

Total		**0.0102**	**0.0923**	**0.0776**	**5.5000e-004**		**7.0200e-003**	**7.0200e-003**		**7.0200e-003**	**7.0200e-003**	**0.0000**	**100.5288**	**100.5288**	**1.9300e-003**	**1.8400e-003**	**101.1262**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	36675	10.6692	4.8000e-004	1.0000e-004	10.7110
Fast Food Restaurant with Drive Thru	94152.5	27.3900	1.2400e-003	2.6000e-004	27.4974
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4760	1.3847	6.0000e-005	1.0000e-005	1.3902
Strip Mall	18826.5	5.4768	2.5000e-004	5.0000e-005	5.4983
Unrefrigerated Warehouse-No Rail	585373	170.2916	7.7000e-003	1.5900e-003	170.9589
Total		**215.2124**	**9.7300e-003**	**2.0100e-003**	**216.0557**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	36675	10.6692	4.8000e-004	1.0000e-004	10.7110
Fast Food Restaurant with Drive Thru	94152.5	27.3900	1.2400e-003	2.6000e-004	27.4974
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Parking Lot	4760	1.3847	6.0000e-005	1.0000e-005	1.3902
Strip Mall	18826.5	5.4768	2.5000e-004	5.0000e-005	5.4983
Unrefrigerated Warehouse-No Rail	585373	170.2916	7.7000e-003	1.5900e-003	170.9589
Total		**215.2124**	**9.7300e-003**	**2.0100e-003**	**216.0557**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3803	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003
Unmitigated	0.3803	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Consumer Products	0.2938					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003
Total	**0.3803**	**4.0000e-005**	**3.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.7100e-003**	**4.7100e-003**	**2.0000e-005**	**0.0000**	**5.2600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2938					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	3.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7100e-003	4.7100e-003	2.0000e-005	0.0000	5.2600e-003
Total	**0.3803**	**4.0000e-005**	**3.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.7100e-003**	**4.7100e-003**	**2.0000e-005**	**0.0000**	**5.2600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	31.0465	0.0205	0.0125	35.2775
Unmitigated	31.0465	0.0205	0.0125	35.2775

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.333326 / 0.204297	0.8506	4.4000e-004	2.6000e-004	0.9401
Fast Food Restaurant with Drive Thru	0.986485 / 0.0629671	1.9660	1.2700e-003	7.7000e-004	2.2285
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.171108 / 0.104872	0.4367	2.3000e-004	1.4000e-004	0.4826
Unrefrigerated Warehouse-No Rail	14.4161 / 0	27.7932	0.0186	0.0113	31.6263
Total		**31.0465**	**0.0205**	**0.0125**	**35.2775**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.333326 / 0.204297	0.8506	4.4000e-004	2.6000e-004	0.9401
Fast Food Restaurant with Drive Thru	0.986485 / 0.0629671	1.9660	1.2700e-003	7.7000e-004	2.2285
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000

Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.171108 / 0.104872	0.4367	2.3000e-004	1.4000e-004	0.4826
Unrefrigerated Warehouse-No Rail	14.4161 / 0	27.7932	0.0186	0.0113	31.6263
Total		**31.0465**	**0.0205**	**0.0125**	**35.2775**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7330	1.3435	0.0000	56.3199
Unmitigated	22.7330	1.3435	0.0000	56.3199

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	13.52	2.7444	0.1622	0.0000	6.7992

Fast Food Restaurant with Drive Thru	37.44	7.6000	0.4492	0.0000	18.8286
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.43	0.4933	0.0292	0.0000	1.2221
Unrefrigerated Warehouse-No Rail	58.6	11.8953	0.7030	0.0000	29.4700
Total		**22.7330**	**1.3435**	**0.0000**	**56.3199**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	13.52	2.7444	0.1622	0.0000	6.7992
Fast Food Restaurant with Drive Thru	37.44	7.6000	0.4492	0.0000	18.8286
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.43	0.4933	0.0292	0.0000	1.2221
Unrefrigerated Warehouse-No Rail	58.6	11.8953	0.7030	0.0000	29.4700
Total		**22.7330**	**1.3435**	**0.0000**	**56.3199**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod EMFAC2017 Fleet Mix Input - 2005

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.442134	0.067977	0.15134	0.184906	0.051492	0.007862	0.022492	0.050485	0.001158	0.000482	0.016312	0.000796	0.002566

CalEEMod EMFAC2017 Emission Factors Input - 2005

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004631	0.003662	0.006052	0.07600331	0.012469	0	0	0.111344	0
A	CH4_RUNEX	0.026766	0.055666	0.031875	0.025302	0.040683	0.027012	0.073486	0.074487451	0.072692	0.304299	0.398865	0.115221	0.110102
A	CH4_STREX	0.212364	0.262381	0.236123	0.243061	0.023653	0.017788	0.053808	2.90212E-06	0.045163	0.000544	0.300611	0.029227	0.069504
A	CO_IDLEX	0	0	0	0	0.172272	0.147892	0.654912	7.269922535	0.782039	0	0	5.679556	0
A	CO_RUNEX	4.46889	8.926658	5.516681	4.680852	4.356591	2.851991	6.024942	4.691740953	9.215106	1.560343	33.92544	15.31443	21.243
A	CO_STREX	5.38324	7.322686	6.613552	7.585243	1.981315	1.476973	1.877243	0.066297754	3.940042	0.027753	8.554769	3.719249	4.334909
A	CO2_NBIO_IDLEX	0	0	0	0	9.630172	14.237	68.52291	1086.718719	92.00254	0	0	382.9658	0
A	CO2_NBIO_RUNEX	342.4352	397.9172	467.5781	510.0019	839.4367	875.7345	1333.784	1783.474488	1718.574	1551.393	212.5591	1105.301	1807.399
A	CO2_NBIO_STREX	79.91037	97.52165	106.4187	115.3707	13.03139	10.64827	28.80891	3.819833836	29.97023	0.297874	69.2053	15.00239	37.33798
A	NOX_IDLEX	0	0	0	0	0.086316	0.116633	0.967175	17.88203011	1.224082	0	0	3.978254	0
A	NOX_RUNEX	0.508067	1.029084	0.874466	0.690815	3.854359	4.691009	11.60336	19.20790618	8.538096	14.05353	1.293347	8.081691	3.207419
A	NOX_STREX	0.747647	0.990403	1.305368	1.208711	0.238508	0.18285	0.173052	0.00905468	0.326139	0.004276	0.264288	0.140789	0.288112
A	PM10_IDLEX	0	0	0	0	0.001283	0.001568	0.022852	0.25275977	0.025974	0	0	0.09796	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060911809	0.13034	0.100209	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.00997	0.010526	0.012	0.035438716	0.012	0.019982	0.004	0.010139	0.01258
A	PM10_RUNEX	0.00624	0.010126	0.005453	0.004258	0.032559	0.037806	0.542481	0.706545095	0.308904	0.095584	0.004147	0.303679	0.040333
A	PM10_STREX	0.00772	0.011797	0.006909	0.006163	0.00085	0.00051	0.002315	0.000309651	0.001373	7.17E-06	0.008658	0.000897	0.002259
A	PM25_IDLEX	0	0	0	0	0.001227	0.0015	0.021863	0.241825494	0.024851	0	0	0.093722	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026105061	0.05586	0.042947	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002492	0.002632	0.003	0.008859679	0.003	0.004996	0.001	0.002535	0.003145
A	PM25_RUNEX	0.005774	0.009395	0.005037	0.003939	0.031031	0.036093	0.518989	0.675979769	0.295478	0.091448	0.003941	0.290401	0.03842
A	PM25_STREX	0.007146	0.010971	0.006397	0.00569	0.000788	0.000471	0.002195	0.000295016	0.001294	6.59E-06	0.008245	0.000839	0.002127
A	ROG_DIURN	0.310412	0.526927	0.272713	0.174779	0.005459	0.003325	0.005496	0.000580153	0.004973	1.98E-05	2.781946	0.014708	3.20403
A	ROG_HTSK	0.376883	0.702692	0.331052	0.186399	0.141241	0.085047	0.273784	0.037054222	0.054545	0.000209	1.108449	0.099988	0.217279
A	ROG_IDLEX	0	0	0	0	0.021883	0.018663	0.084543	1.630285316	0.166824	0	0	0.801312	0
A	ROG_RESTL	0.161319	0.284054	0.143426	0.097685	0.001917	0.001142	0.002168	0.000232291	0.001428	1.24E-05	1.549357	0.003769	0.85568
A	ROG_RUNEX	0.139037	0.350974	0.175103	0.132411	0.305464	0.245803	1.240881	1.488358642	0.83178	0.092986	3.028786	1.098814	0.737046
A	ROG_RUNLS	1.20281	2.689707	1.270803	0.714611	0.693708	0.438592	0.9951	0.188223337	0.505643	0.000404	5.167849	0.921305	2.160071
A	ROG_STREX	1.215478	1.600543	1.355354	1.370197	0.140253	0.102395	0.463268	1.50241E-05	0.308384	0.002238	2.365373	0.208819	0.490426
A	SO2_IDLEX	0	0	0	0	0.00046	0.000919	0.005238	0.095537845	0.006907	0	0	0.022417	0
A	SO2_RUNEX	6.73E-05	0.013862	0.100377	0.005044	0.031349	0.041844	0.100377	0.155833184	0.066457	0.130118	0.002077	0.061988	0.029986
A	SO2_STREX	0	0	0.000282	0.001128	0.000127	0.000104	0.000282	3.73325E-05	0.000293	2.91E-06	0.000676	0.000147	0.000365
A	TOG_DIURN	0.310412	0.526927	0.272713	0.174779	0.005459	0.003325	0.005496	0.000580153	0.004973	1.98E-05	2.781946	0.014708	3.20403
A	TOG_HTSK	0.376883	0.702692	0.331052	0.186399	0.141241	0.085047	0.273784	0.037054222	0.054545	0.000209	1.108449	0.099988	0.217279
A	TOG_IDLEX	0	0	0	0	0.030613	0.025602	0.099231	1.85624011	0.198005	0	0	1.053355	0
A	TOG_RESTL	0.161319	0.284054	0.143426	0.097685	0.001917	0.001142	0.002168	0.000232291	0.001428	1.24E-05	1.549357	0.003769	0.85568
A	TOG_RUNEX	0.188101	0.437039	0.231606	0.179162	0.403478	0.312681	1.434332	1.699554695	1.007409	0.409698	3.412623	1.345434	0.925539
A	TOG_RUNLS	1.20281	2.689707	1.270803	0.714611	0.693708	0.438592	0.9951	0.188223337	0.505643	0.000404	5.167849	0.921305	2.160071
A	TOG_STREX	1.329601	1.749305	1.482917	1.499476	0.153322	0.112001	0.503139	1.64495E-05	0.336338	0.00245	2.567053	0.22778	0.533774

Attachment 2: Health Risk Assessment

Health Risk Calculation Methodology

A health risk assessment for exposure to TACs requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[38] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by state law, compared to previous published risk assessment guidelines. The SJVAPCD has recently revised Risk Management Policy to incorporate OEHHA's new guidelines.[39]

This health risk assessment used the recent 2015 OEHHA risk assessment guidelines and SJVAPCD recommended procedures for applying the OEHHA guidelines.[40] Guidance based on consultations with SJVAPCD was also incorporated into the assessment[41].

<u>Cancer Risk</u>

Potential increased cancer risks from inhalation of TACs are calculated based on the average annual TAC concentration, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location, at a workplace, or at a school.

The current OEHHA guidance used by SJVAPCD recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, for a 70-year residential exposure period they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. For workers, a 40-year

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

[39] San Joaquin Valley Air Pollution Control District. 2015. *APR-1906 Framework for Performing Health Risk Assessments*. June30, 2015.

[40] San Joaquin Valley Air Pollution Control District. 2015. *Final Draft Staff Report, Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document*. May 28, 2015

[41] San Joaquin Valley Air Pollution Control District. 2020. Email from Kyle Melching of the SJVAPCD and James Reyff of Illingworth & Rodkin, Inc. on February 6, 2020.

adult exposure period is assumed in calculating the 70-year lifetime cancer risk. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) for residential exposures or L/kg per 8 hours for worker exposures. As recommended by the SJVAPCD, 95th percentile breathing rates are used for all age groups.

Functionally, cancer risk is calculated using the following parameters and formulas:
Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 10^6

Where:

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

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

Where:

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

The health risk parameters used in this evaluation are summarized in Tables 1 and 2.

TABLE 1 - Health Risk Parameters used for Cancer Risk Calculations

	Exposure Type →	**Infant**		**Child**	**Adult**	**Worker**
Parameter	***Age Range →***	**3rd Trimester**	**0<2**	**2 < 16**	**16 - 70**	**> 16**
Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$ (refer to Table 2)						
Daily Breathing Rate (L/kg-day)[a]		361	1,090	745	290	230[b]
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time ((years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	54	40
Exposure Frequency (days/year)		350	350	350	350	250
Age Sensitivity Factor		10	10	3	1	1
Fraction of Time at Home		1.0	1.0	1.0	1.0	-

[a] 95th percentile breathing rates for all age groups.
[b] Worker 95th percentile 8-hour breathing rate.

Table 2 - Cancer Potency Factors and Reference Exposure Levels

TAC	Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	Reference Exposure Levels ($\mu g/m^3$)	
		Acute (1-hour)	Chronic (annual avg.)
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Non-Cancer Hazard Calculation

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). Non-cancer health effects can be acute due to short term TAC exposure (one hour) or chronic due to longer term TAC exposure (annual average). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the SJVAPCD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for projects involving construction or for residential projects locating near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is DPM. For other emission sources, such as gasoline stations, benzene, toluene, and xylenes (organic TACs) are of concern with respect acute and chronic non-cancer health effects.

Attachment 3: Construction Health Risks

Stanislaus Co Pirrone Rd Gas/Market Comercial Development

DPM Emissions and Modeling Emission Rates - Without Controls

Construction Year	Activity	Area Source	DPM Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2021	Construction	DPM_CONST	0.0677	135.4	0.05334	6.72E-03	48075.4	1.40E-07
2022	Construction	DPM_CONST	0.0825	165.0	0.0650	0.0082	48075.4	1.704E-07

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	282	
hours/year =	2538	

DPM Emissions and Modeling Emission Rates - With AQ-1

Construction Year	Activity	Area Source	DPM Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2021	Construction	DPM_CONST	0.00793	15.9	0.00625	7.88E-04	48075.4	1.64E-08
2022	Construction	DPM_CONST	0.0158	31.6	0.0124	0.0016	48075.4	3.263E-08

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	282	
hours/year =	2538	

Stanislaus Co Pirrone Rd Gas/Market Comercial Development - Construction Impacts - Without Mitigation
AERMOD Risk Modeling Parameters & Maximum Concentrations
Off-Site Residential Receptors (1.5m heights)

Receptor Infornmation

Number of Receptors
Receptor Height = 1.5 meters
Receptor Distances = Variable - placed at nearby residences &workplaces as applicanle

Meteorolgical Conditions

SJVAPCD Modesto Data 2013-2017
Land Use Classification Rural
Wind Speed = variable
Wind Direction = variable

MEI Maximum Concentrations

Emissions Period	DPM Concentration ($\mu g/m^3$)
2021	0.10778
2022	0.13135

Stanislaus Co Pirrone Rd Gas/Market Comercial Development - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk Calculations From Construction
70-Year Residential Exposure - Infant/Child at Off-Site Single Family Home

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

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

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

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

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - < 2**	**2 - < 16**	**16 - 70**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	745	290
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	1.00

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Infant/Child - Exposure Information: Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Modeled DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	
0	0.25	-0.25 - 0*	2021	0.1078	10	1.47					HI
1	1	1	2021	0.1078	10	17.70	2021	0.1078	1	0.47	0.022
2	1	2	2022	0.1314	10	21.57	2022	0.1314	1	0.57	0.026
3	1	3	2023	0.0000	3	0.00	2023	0.0000	1	0.00	
4	1	4	2024	0.0000	3	0.00	2024	0.0000	1	0.00	
5	1	5	2025	0.0000	3	0.00	2025	0.0000	1	0.00	
6	1	6	2026	0.0000	3	0.00	2026	0.0000	1	0.00	
7	1	7	2027	0.0000	3	0.00	2027	0.0000	1	0.00	
8	1	8	2028	0.0000	3	0.00	2028	0.0000	1	0.00	
9	1	9	2029	0.0000	3	0.00	2029	0.0000	1	0.00	
10	1	10	2030	0.0000	3	0.00	2030	0.0000	1	0.00	
11	1	11	2031	0.0000	3	0.00	2031	0.0000	1	0.00	
12	1	12	2032	0.0000	3	0.00	2032	0.0000	1	0.00	
13	1	13	2033	0.0000	3	0.00	2033	0.0000	1	0.00	
14	1	14	2034	0.0000	3	0.00	2034	0.0000	1	0.00	
15	1	15	2035	0.0000	3	0.00	2035	0.0000	1	0.00	
16	1	16	2036	0.0000	3	0.00	2036	0.0000	1	0.00	
17	1	17	2037	0.0000	1	0.00	2037	0.0000	1	0.00	
18	1	18	2038	0.0000	1	0.00	2038	0.0000	1	0.00	
19	1	19	2039	0.0000	1	0.00	2039	0.0000	1	0.00	
20	1	20	2040	0.0000	1	0.00	2040	0.0000	1	0.00	
21	1	21	2041	0.0000	1	0.00	2041	0.0000	1	0.00	
…	…	…	…	…	…	…	…	…	…	…	
…	…	…	…	…	…	…	…	…	…	…	
…	…	…	…	…	…	…	…	…	…	…	
63	1	63	2083	0.0000	1	0.00	2083	0.0000	1	0.00	
64	1	64	2084	0.0000	1	0.00	2084	0.0000	1	0.00	
65	1	65	2085	0.0000	1	0.00	2085	0.0000	1	0.00	
66	1	66	2086	0.0000	1	0.00	2086	0.0000	1	0.00	
67	1	67	2087	0.0000	1	0.00	2087	0.0000	1	0.00	
68	1	68	2088	0.0000	1	0.00	2088	0.0000	1	0.00	
69	1	69	2089	0.0000	1	0.00	2089	0.0000	1	0.00	
70	1	70	2090	0.0000	1	0.00	2090	0.0000	1	0.00	
Total Increased Cancer Risk						**40.7**				**1.04**	

* Third trimester of pregnancy

Stanislaus Co Pirrone Rd Gas/Market Comercial Development - Construction Impacts - With Mitigation (T3L3)
AERMOD Risk Modeling Parameters & Maximum Concentrations
Off-Site Residential Receptors (1.5m heights)

Receptor Informnation

Number of Receptors
Receptor Height = 1.5 meters
Receptor Distances = Variable - placed at nearby residences &workplaces as applicanle

Meteorolgical Conditions

SJVAPCD Modesto Data 2013-2017
Land Use Classification Rural
Wind Speed = variable
Wind Direction = variable

MEI Maximum Concentrations

Emissions Period	DPM Concentration ($\mu g/m^3$)
2021	0.01263
2022	0.02515

Stanislaus Co Pirrone Rd Gas/Market Comercial Development - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk Calculations From Construction
70-Year Residential Exposure - Infant/Child at Off-Site Single Family Home

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

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

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

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

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - < 2**	**2 - < 16**	**16 - 70**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	745	290
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	1.00

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	
0	0.25	-0.25 - 0*	2021	0.0126	10	0.17					**HI**
1	1	1	2021	0.0126	10	2.07	2021	0.0126	1	0.06	0.003
2	1	2	2022	0.0252	10	4.13	2022	0.0252	1	0.11	0.005
3	1	3	2023	0.0000	3	0.00	2023	0.0000	1	0.00	
4	1	4	2024	0.0000	3	0.00	2024	0.0000	1	0.00	
5	1	5	2025	0.0000	3	0.00	2025	0.0000	1	0.00	
6	1	6	2026	0.0000	3	0.00	2026	0.0000	1	0.00	
7	1	7	2027	0.0000	3	0.00	2027	0.0000	1	0.00	
8	1	8	2028	0.0000	3	0.00	2028	0.0000	1	0.00	
9	1	9	2029	0.0000	3	0.00	2029	0.0000	1	0.00	
10	1	10	2030	0.0000	3	0.00	2030	0.0000	1	0.00	
11	1	11	2031	0.0000	3	0.00	2031	0.0000	1	0.00	
12	1	12	2032	0.0000	3	0.00	2032	0.0000	1	0.00	
13	1	13	2033	0.0000	3	0.00	2033	0.0000	1	0.00	
14	1	14	2034	0.0000	3	0.00	2034	0.0000	1	0.00	
15	1	15	2035	0.0000	3	0.00	2035	0.0000	1	0.00	
16	1	16	2036	0.0000	3	0.00	2036	0.0000	1	0.00	
17	1	17	2037	0.0000	1	0.00	2037	0.0000	1	0.00	
18	1	18	2038	0.0000	1	0.00	2038	0.0000	1	0.00	
19	1	19	2039	0.0000	1	0.00	2039	0.0000	1	0.00	
20	1	20	2040	0.0000	1	0.00	2040	0.0000	1	0.00	
21	1	21	2041	0.0000	1	0.00	2041	0.0000	1	0.00	
…	…	…	…	…	…	…	…	…	…	…	
…	…	…	…	…	…	…	…	…	…	…	
…	…	…	…	…	…	…	…	…	…	…	
63	1	63	2083	0.0000	1	0.00	2083	0.0000	1	0.00	
64	1	64	2084	0.0000	1	0.00	2084	0.0000	1	0.00	
65	1	65	2085	0.0000	1	0.00	2085	0.0000	1	0.00	
66	1	66	2086	0.0000	1	0.00	2086	0.0000	1	0.00	
67	1	67	2087	0.0000	1	0.00	2087	0.0000	1	0.00	
68	1	68	2088	0.0000	1	0.00	2088	0.0000	1	0.00	
69	1	69	2089	0.0000	1	0.00	2089	0.0000	1	0.00	
70	1	70	2090	0.0000	1	0.00	2090	0.0000	1	0.00	
Total Increased Cancer Risk						**6.4**				**0.17**	

* Third trimester of pregnancy

Attachment 4: Project Operation Emissions

Name — Gasoline Dispensing Operations VOC Calculator

Applicability	Use this spreadsheet to calculate VOC emissions from gasoline dispensing operations. Entries required in yellow areas, output in grey areas.			
Author or updater	Jay Witt	*Last Update*	February 2, 2021	
Facility:	Salida Commercial			
ID#:	Pirrone Road, Stanislaus County			
Project #:				

Inputs	gal/day	gal/yr	**Formula**
	4339.8	1584000	
Gasoline Throughput	1.81E-01	1.58E+03	Enter the **change** in gas station throughput in units of gallons/day and gallons/yr. Select the Phase I and Phase II type using the drop down provided. VOC emissions are calculated by the multiplication of Throughput Rates and Emission Factors.
Application Type	Type #		
EVR Phase I and EVR Phase II (VR-501 only) Installed Aboveground tank	6		

Substances	**lb VOC/ 1,000 gal**	**LB/HR**	**LB/YR**
Vapor Tank Filling Loss VOC	0.17	3.07E-02	2.69E+02
Vehicle Refueling VOC	0.38	6.87E-02	6.02E+02
Breathing Loss VOC	0.05	9.58E-03	8.40E+01
Spillage VOC	0.42	7.59E-02	6.65E+02
Total VOC	1.02	1.85E-01	1.62E+03

References:

* The emission factors are derived from Appendix A in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines* .

Name	Gasoline Dispensing Operations VOC from Vapor Vehicle Refueling			
Applicability	Use this spreadsheet for vapor VOC emissions from Vapor Vehicle Refueling. Entries required in yellow areas, output in grey areas.			
Author or updater	Jay Witt	*Last Update*	February 2, 2021	
Facility:				
ID#:				
Project #:				

Inputs	lb /hr	lb /yr	**Formula**
VOC Rate	6.87E-02	6.02E+02	Emissions are calculated by the multiplication of VOC Rates and Emission Factors.

Substances	CAS#	lbs/ lb VOC	LB/HR	LB/YR
Benzene	**71432**	3.00E-03	2.06E-04	1.81E+00
Ethyl Benzene	**100414**	1.60E-02	1.10E-03	9.63E+00
Toluene	**108883**	8.00E-02	5.50E-03	4.82E+01
Xylenes	**1330207**	2.40E-02	1.65E-03	1.44E+01

References:

* The emission factors are derived from the table, "Content of Reformulated Gasoline", in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines*.

Name	Gasoline Dispensing Operations VOC from Vapor Tank Filling Loss			
Applicability	Use this spreadsheet for vapor VOC emissions from Vapor Tank Filling Loss. Entries required in yellow areas, output in grey areas.			
Author or updater	Jay Witt	*Last Update*	February 2, 2021	
Facility:	Salida Commercial			
ID#:	Pirrone Road, Stanislaus County			
Project #:				

Inputs	lb /hr	lb /yr	**Formula**
VOC Rate	3.07E-02	2.69E+02	Emissions are calculated by the multiplication of VOC Rates and Emission Factors.

Substances	**CAS#**	**lbs/ lb VOC**	**LB/HR**	**LB/YR**
Benzene	**71432**	3.00E-03	9.22E-05	8.08E-01
Ethyl Benzene	**100414**	1.60E-02	4.92E-04	4.31E+00
Toluene	**108883**	8.00E-02	2.46E-03	2.15E+01
Xylenes	**1330207**	2.40E-02	7.38E-04	6.46E+00

References:

* The emission factors are derived from the table, "Content of Reformulated Gasoline", in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines*.

Name	Gasoline Dispensing Operations VOC from Liquid			
Applicability	Use this spreadsheet for liquid VOC emissions from gasoline dispensing operations' spillage processes. Entries required in yellow areas, output in grey areas.			
Author or updater	Jay Witt		*Last Update*	February 2, 2021
Facility:				
ID#:				
Project #:				

Inputs	lb /hr	lb/yr	Formula
VOC Rate	7.59E-02	6.65E+02	Emissions are calculated by the multiplication of VOC Rates and Emission Factors.

Substances	CAS#	lbs/ liquid vapor	LB/HR	LB/YR
Benzene	**71432**	1.00E-02	7.59E-04	6.65E+00
Ethyl Benzene	**100414**	1.60E-02	1.22E-03	1.06E+01
Toluene	**108883**	8.00E-02	6.08E-03	5.32E+01
Xylenes	**1330207**	2.40E-02	1.82E-03	1.60E+01

References:

* The emission factors are derived from the table, "Content of Reformulated Gasoline", in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines*.

Name	Gasoline Dispensing Operations VOC from Vapor Breathing Loss			
Applicability	Use this spreadsheet for vapor VOC emissions from Vapor Breathing Loss. Entries required in yellow areas, output in grey areas.			
Author or updater	Jay Witt	*Last Update*	February 2, 2021	
Facility:				
ID#:				
Project #:				

Inputs	lb /hr	lb /yr	Formula
VOC Rate	9.58E-03	8.40E+01	Emissions are calculated by the multiplication of VOC Rates and Emission Factors.

Substances	CAS#	lbs/ lb VOC	LB/HR	LB/YR
Benzene	**71432**	3.00E-03	2.88E-05	2.52E-01
Ethyl Benzene	**100414**	1.60E-02	1.53E-04	1.34E+00
Toluene	**108883**	8.00E-02	7.67E-04	6.72E+00
Xylenes	**1330207**	2.40E-02	2.30E-04	2.01E+00

References:

* The emission factors are derived from the table, "Content of Reformulated Gasoline", in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines*.

Gasoline Dispensing Operations VOC from Vapor Tank Filling Loss

Substances	CAS#	lbs/ lb VOC	LB/HR	LB/YR	g/s	Each Tank
Benzene	71432	0.003	9.222E-05	0.80784	1.162E-05	5.80981E-06
Ethyl Benzene	100414	0.016	0.0004918	4.30848	6.1971E-05	3.09857E-05
Toluene	108883	0.08	0.0024592	21.5424	0.00030986	0.000154928
Xylenes	1330207	0.024	0.0007378	6.46272	9.2957E-05	4.64785E-05

Gasoline Dispensing Operations VOC from Vapor Vehicle Refueling

Substances	CAS#	lbs/ lb VOC	LB/HR	LB/YR	g/s	Each Vol Source
Benzene	71432	0.003	0.0002061	1.80576	2.5973E-05	1.29866E-05
Ethyl Benzene	100414	0.016	0.0010994	9.63072	0.00013852	6.9262E-05
Toluene	108883	0.08	0.0054971	48.1536	0.00069262	0.00034631
Xylenes	1330207	0.024	0.0016491	14.44608	0.00020779	0.000103893

Gasoline Dispensing Operations VOC from Vapor Breathing Loss

Substances	CAS#	lbs/ lb VOC	LB/HR	LB/YR	g/s	Each Tank
Benzene	71432	0.003	2.875E-05	0.251856	3.6226E-06	1.81129E-06
Ethyl Benzene	100414	0.016	0.0001533	1.343232	1.932E-05	9.66023E-06
Toluene	108883	0.08	0.0007667	6.71616	9.6602E-05	4.83012E-05
Xylenes	1330207	0.024	0.00023	2.014848	2.8981E-05	1.44903E-05

Gasoline Dispensing Operations VOC from Liquid

Substances	CAS#	lbs/ liquid vap	LB/HR	LB/YR	g/s	Each Vol Source
Benzene	71432	0.01	0.0007595	6.6528	9.5691E-05	4.78455E-05
Ethyl Benzene	100414	0.016	0.0012151	10.64448	0.00015311	7.65528E-05
Toluene	108883	0.08	0.0060757	53.2224	0.00076553	0.000382764
Xylenes	1330207	0.024	0.0018227	15.96672	0.00022966	0.000114829

TOTAL

Substances	CAS#	LB/HR	LB/YR	g/s
Benzene	71432	0.001086577	9.518256	0.00013691
Ethyl Benzene	100414	0.002959744	25.926912	0.00037292
Toluene	108883	0.014798718	129.63456	0.00186461
Xylenes	1330207	0.004439615	38.890368	0.00055938

District Default Values						
Usage			Average Lb/week			
Facility Type	Description	Controls*	Hamburger	Poultry w/ skin	Poultry w/o skin	Pork
2	Flat Griddle	**0%**	**360**		**110**	**110**
*w/ District Required Control Equipment						

Emission Factors		Lb/Ton of meat											
		Hamburger			Poultry w/ skin			Poultry w/o skin			Pork		
Facility Type	Description	PM10	PM2.5	VOC	PM10	PM2.5	VOC	PM10	PM2.5	VOC	PM10	PM2.5	VOC
2	Flat Griddle	**10**	**7.6**	**0.14**			**0.8**			**0.8**			**0.8**

		Emissions											
Facility		lbs/week			**lbs/day**			Lbs/hr			g/s		
Type	Description	PM10	PM2.5	VOC	**PM10**	**PM2.5**	**VOC**	PM10	PM2.5	VOC	PM10	PM2.5	VOC
2	Flat Griddle	1.8	1.368	0.1132	**0.257143**	**0.195429**	**0.016171**	0.010714	0.008143	0.000674	0.00135	0.001026	8.49E-05
						Tons/year							
					0.046929	**0.035666**	**0.002951**						

Char Broil - Fast Food w/ Drive thru

District Default Values						
Usage			Average Lb/week			
Facility Type	Description	Controls*	Hamburger	Poultry w/ skin	Poultry w/o skin	Pork
2	Flat Griddle	**0%**	**360**		**110**	**110**
*w/ District Required Control Equipment						

Emission Factors		Lb/Ton of meat						
		Hamburger		Poultry w/ skin		Poultry w/o	Pork	
Facility Type	Description	PAH wo/Na-phthalene	Naph-thalene	PAH wo/Na-phthalene	Naph-thalene	PAH wo/Na-phthalene	PAH wo/Na-phthalene	Naph-thalene
2	Flat Griddle	**0.000054**	**0.012**			**0.000044**	**0.000044**	**0.002**

Emission Summary		Hamburger		Poultry w/ skin		Poultry w/o	Pork	
Facility Type	Description	PAH wo/Na-phthalene	Naph-thalene	PAH wo/Na-phthalene	Naph-thalene	PAH wo/Na-phthalene	PAH wo/Na-phthalene	Naph-thalene
2	Flat Griddle	5.05E-04	1.12E-01	0.00E+00	0.00E+00	1.26E-04	1.26E-04	5.72E-03

	lbs/week	lbs/day	lbs/hr	**g/s**
Naphthalene	0.00326	0.000465714	1.94E-05	**2.445E-06**

2022/2023 Fuel Delivery HHDT Emissions - DPM

Road Segment	RD Seg ID	Rd Seg Length (ft)	Rd Seg Length (m)	Modeled RD Width (ft)	Modeled RD Width (m)	Plume Vertical Height[a] (ft)	Plume Vertical Height[a] (m)	Initial Vertical Dispersion[a] (m)	Release Height[a] (ft)	Release Height[a] (m)	Fraction that are HHDT	No. of Daily Trucks	Travel Speed (mph)	DPM EF[b] (g/veh-mi)	Truck Travel DPM Emissions Daily (g/day)	Truck Travel DPM Emissions Hourly (g/s)	Truck Travel DPM Emissions Annual (lbs/yr)
Off-site Travel:																	
SB Pirrone Rd IN		1136	346.3	12	3.66	12	3.66	1.70	6	1.83	1	0.43	25	0.019579	0.001828	2.12E-08	0.001471
NB Pirrone Rout OUT		392.4	119.6	12	3.66	12	3.66	1.70	6	1.83	1	0.43	25	0.019579	0.000631	7.31E-09	0.000508
On-site:																	
Delivery Route		701.1	213.7	12	3.66	12	3.66	1.70	6	1.83	1	0.43	5	0.048637	0.002803	3.24E-08	0.002255

[a]Source Parameters from SJVAPCD *Guidance for Air Dispersion Modeling*

[b]Emissions Factor from CT_EMFAC2017

2022/2023 Fuel Delivery HDDT Idle Emissions - DPM

On-Site	Stack Height[a] (ft)	Stack Height[a] (m)	Stack Diameter[a] (ft)	Stack Diameter[a] (m)	Stack Velocity[a] (m/s)	Temp[a] (K)	Fraction of HHDT	No. of Daily Trucks	Idle Emissions Factor[b] (g/veh-hr)	Idle Emissions Daily (g/day)	Idle Emissions Hourly (g/s)	Idle Emissions Annual (g/yr)	Idle Emissions (lb/yr)
Fuel Delivery Trucks	12.6	3.84	0.33	0.1	51.71	366	1	0.43398	0.243185	0.026384	3.05374E-07	9.63029	0.021231

[a]Source Parameters from SJVAPCD *Guidance for Air Dispersion Modeling*

[b]Emissions Factor from CT_EMFAC2017

Truck Info

Total Fuel Truck Trips per day	=	0.86796	
Total Fuel Trucks per day	=	0.43398	3.0 deliveries a week
Customer Truck Trips per day	=	0	NO Trucks served by pumps
Total Customer Truck per day	=	0	
Operation Days	=	365	
Daily Operation Hours	=	24	

Truck Idle DPM Emission Information

Emissions Factor @ 5 mph (g/mi)	=	0.048637
HHDT Idle Emissions Rate (g/hr)	=	0.243185
Idle Time per truck (min)	=	15

Customer Traffic Vehicle Emissions - DPM

Road Segment	Segment ID	Segment length (ft)	Segment length (m)	Segment Width (ft)	Segment Width (m)	Plume Height[a] (ft)	Plume Height[a] (m)	Vertical Dispersion[a] (ft)	Vertical Dispersion[a] (m)	Release Height[a] (ft)	Release Height[a] (m)	Trip Distribution (%)	Trips per day	Speed (mph)	DPM Emissions Factors[b] Evaporative g/veh-hr	Evaporative g/veh-mi	Exhaust g/veh-mi	Total g/veh-mi	Customer DPM Emissions Daily (g/day)	Hourly (g/s)	Annual (lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0	0	0.002296	0.002296	0.272187	3.15E-06	0.219026
NB Pirrone North of Arborwood		608	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0	0	0.002487	0.002487	0.24118	2.79E-06	0.194075
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0	0	0.002296	0.002296	0.206829	2.39E-06	0.166433
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0	0	0.002487	0.002487	0.210437	2.44E-06	0.169336
WB Arborwood East of Pirrone		638	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0	0	0.002232	0.002232	0.088042	1.02E-06	0.070846
EB Arborwood East of Pirrone		640	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0	0	0.002232	0.002232	0.16132	1.87E-06	0.129812
On-site													Vehicles per day								
Large Loop		1034.12	315.2	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.006331	0.006331	1.429679	1.65E-05	1.150445
Small Loop		617	188.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.006331	0.006331	0.85273	9.87E-06	0.686182
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0	0	0.008969	0.008969	0.261687	3.03E-06	0.210576

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenace Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - Benzene

Road Segment	Segment ID	Segment length (ft)	(m)	Segment Width (ft)	(m)	Plume Height[a] (ft)	(m)	Vertical Dispersion[a] (ft)	(m)	Release Height[a] (ft)	(m)	Trip Distribution (%)	Trips per day	Speed (mph)	Benzene Emissions Factors[b] Evaporative g/veh-hr	Evaporative g/veh-mi	Exhaust g/veh-mi	Total g/veh-mi	Customer DPM Emissions Daily (g/day)	Hourly (g/s)	Annual (lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0.017348	0.000434	0.000785	0.001219	0.144475	1.67E-06	0.116257
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0.017348	0.000386	0.00072	0.001106	0.107209	1.24E-06	0.086269
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0.017348	0.000434	0.000785	0.001219	0.109784	1.27E-06	0.088341
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0.017348	0.000386	0.00072	0.001106	0.093543	1.08E-06	0.075273
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0.017348	0.000496	0.000899	0.001395	0.055013	6.37E-07	0.044268
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0.017348	0.000496	0.000899	0.001395	0.1008	1.17E-06	0.081113
													Vehicles per day								
On-site																					
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.017348	0.00347	0.005994	0.009464	2.25877	2.61E-05	1.817603
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.017348	0.00347	0.005994	0.009464	1.30721	1.51E-05	1.051898
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0.017348	0.00838	0.008492	0.016876	0.492403	5.7E-06	0.396231

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenace Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - Ethylbenzene

Road Segment	Segment ID	Segment length (ft)	(m)	Segment Width (ft)	(m)	Plume Height[a] (ft)	(m)	Vertical Dispersion[a] (ft)	(m)	Release Height[a] (ft)	(m)	Trip Distribution (%)	Trips per day	Speed (mph)	Ethylbenzene Emissions Factors[b] Evaporative g/veh-hr	Evaporative g/veh-mi	Exhaust g/veh-mi	Total g/veh-mi	Customer DPM Emissions Daily (g/day)	Hourly (g/s)	Annual (lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0.028451	0.000711	0.000303	0.001014	0.120241	1.39E-06	0.096756
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0.028451	0.000632	0.00028	0.000912	0.088466	1.02E-06	0.071188
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0.028451	0.000711	0.000303	0.001014	0.091368	1.06E-06	0.073523
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0.028451	0.000632	0.00028	0.000912	0.077189	8.93E-07	0.062113
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0.028451	0.000813	0.000346	0.001159	0.045713	5.29E-07	0.036784
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0.028451	0.000813	0.000346	0.001159	0.08376	9.69E-07	0.0674
On-site													Vehicles per day								
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.028451	0.00569	0.002231	0.007921	1.89063	2.19E-05	1.521366
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.028451	0.00569	0.002231	0.007921	1.09416	1.27E-05	0.880457
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0.028451	0.013751	0.003161	0.016912	0.49344	5.71E-06	0.397065

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - Formaldehyde

Road Segment	Segment ID	Segment length		Segment Width		Plume Height[a]		Vertical Dispersion[a]		Release Height[a]		Trip Distribution	Trips per day	Speed	Formaldehyde Emissions Factors[b]				Customer DPM Emissions		
															Evaporative		Exhaust	Total	Daily	Hourly	Annual
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(%)		(mph)	g/veh-hr	g/veh-mi	g/veh-mi	g/veh-mi	(g/day)	(g/s)	(lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0	0	0.001464	0.001464	0.173555	2.01E-06	0.139658
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0	0	0.00131	0.00131	0.127039	1.47E-06	0.102227
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0	0	0.001464	0.001464	0.131881	1.53E-06	0.106123
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0	0	0.00131	0.00131	0.110845	1.28E-06	0.089196
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0	0	0.001714	0.001714	0.067609	7.83E-07	0.054404
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0	0	0.001714	0.001714	0.123881	1.43E-06	0.099686
On-site													Vehicles per day								
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.013111	0.013111	3.12933	3.62E-05	2.518132
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.013111	0.013111	1.81103	2.1E-05	1.457314
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0	0	0.018574	0.018574	0.541933	6.27E-06	0.436087

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - Naphthalene

Road Segment	Segment ID	Segment length		Segment Width		Plume Height[a]		Vertical Dispersion[a]		Release Height[a]		Trip Distribution	Trips per day	Speed	Naphthalene Emissions Factors[b]				Customer DPM Emissions		
															Evaporative		Exhaust	Total	Daily	Hourly	Annual
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(%)		(mph)	g/veh-hr	g/veh-mi	g/veh-mi	g/veh-mi	(g/day)	(g/s)	(lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0.002429	6.07E-05	0.000024	8.47E-05	0.010044	1.16E-07	0.008082
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0.002429	5.4E-05	0.000022	7.6E-05	0.007368	8.53E-08	0.005929
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0.002429	6.07E-05	0.000024	8.47E-05	0.007632	8.83E-08	0.006142
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0.002429	5.4E-05	0.000022	7.6E-05	0.006429	7.44E-08	0.005173
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0.002429	6.94E-05	0.000027	9.64E-05	0.003803	4.4E-08	0.00306
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0.002429	6.94E-05	0.000027	9.64E-05	0.006967	8.06E-08	0.005607
On-site													Vehicles per day								
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.002429	0.000486	0.000178	0.000664	0.158436	1.83E-06	0.127491
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0.002429	0.000486	0.000178	0.000664	0.09169	1.06E-06	0.073783
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0.002429	0.001174	0.000252	0.001426	0.041612	4.82E-07	0.033485

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (2015)
[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - Acetaldehyde

Road Segment	Segment ID	Segment length		Segment Width		Plume Height[a]		Vertical Dispersion[a]		Release Height[a]		Trip Distribution	Trips per day	Speed	Acetaldehyde Emissions Factors[b]				Customer DPM Emissions		
															Evaporative		Exhaust	Total	Daily	Hourly	Annual
		(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(%)		(mph)	g/veh-hr	g/veh-mi	g/veh-mi	g/veh-mi	(g/day)	(g/s)	(lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0	0	0.000608	0.000608	0.072077	8.34E-07	0.058
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0	0	0.000541	0.000541	0.052464	6.07E-07	0.042217
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0	0	0.000608	0.000608	0.05477	6.34E-07	0.044073
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0	0	0.000541	0.000541	0.045777	5.3E-07	0.036836
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0	0	0.000716	0.000716	0.028243	3.27E-07	0.022727
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0	0	0.000716	0.000716	0.05175	5.99E-07	0.041642
On-site													Vehicles per day								
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.005661	0.005661	1.351166	1.56E-05	1.087266
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.005661	0.005661	0.78196	9.05E-06	0.629232
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0	0	0.00802	0.00802	0.233993	2.71E-06	0.188291

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Customer Traffic Vehicle Emissions - 1,3-Butadiene

Road Segment	Segment ID	Segment length (ft)	Segment length (m)	Segment Width (ft)	Segment Width (m)	Plume Height[a] (ft)	Plume Height[a] (m)	Vertical Dispersion[a] (ft)	Vertical Dispersion[a] (m)	Release Height[a] (ft)	Release Height[a] (m)	Trip Distribution (%)	Trips per day	Speed (mph)	1,3-Butadiene Emissions Factors[b] Evaporative g/veh-hr	Evaporative g/veh-mi	Exhaust g/veh-mi	Total g/veh-mi	Customer DPM Emissions Daily (g/day)	Hourly (g/s)	Annual (lb/year)
Off-Site																					
SB Pirrone North of Arborwood		624.34	190.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	22	1003	40	0	0	0.000161	0.000161	0.019086	2.21E-07	0.015359
NB Pirrone North of Arborwood		607.94	185.3	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	18	842	45	0	0	0.000148	0.000148	0.014353	1.66E-07	0.011549
SB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	21	951	40	0	0	0.000161	0.000161	0.014503	1.68E-07	0.011671
NB Pirrone South of Arborwood		500	152.4	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	19	894	45	0	0	0.000148	0.000148	0.012523	1.45E-07	0.010077
WB Arborwood East of Pirrone		638.45	194.6	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	7	326	35	0	0	0.000183	0.000183	0.007219	8.35E-08	0.005809
EB Arborwood East of Pirrone		640.1	195.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	13	596	35	0	0	0.000183	0.000183	0.013227	1.53E-07	0.010643
On-site													Vehicles per day								
Large Loop		1093	333.1	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.001186	0.001186	0.283074	3.28E-06	0.227786
Small Loop		632.55	192.8	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	50	1153	5	0	0	0.001186	0.001186	0.16382	1.9E-06	0.131826
Drive Thru		305.12	93.0	12	3.6576	8.5	2.6	3.95	1.21	4.25	1.30	66	505	5	0	0	0.00168	0.00168	0.049022	5.67E-07	0.039448

[a]Source Parameters from EPA *Transportation Conformity Guidance for Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (2015)

[b]Emissions Factors from CT_EMFAC2017

Vehicle Info		
Vehicles per day	=	2306
Trips per day	=	4612
Operation Days	=	365
Operation Hours	=	24

Attachment 5: Project Operation Health Risks

Stanislaus Co Pirrone Rd Gas/Market Commercial Development - Operation Without Mitigation
AERMOD Risk Modeling Parameters & Maximum TAC Concentrations & Non-Cancer Health Effects
Off-Site Residential & Worker Receptors (1.5m heights)

Receptor Information

Number of Receptors
Receptor Height = 1.5 meters
Receptor Distances = Variable - placed at nearby residences &workplaces as applicable

Meteorological Conditions

SJVAPCD Modesto Data 2013-2017
Land Use Classification Rural
Wind Speed = variable
Wind Direction = variable

Reference Exposure Levels (REL)

TAC	CPF	REL (µg/m3)	
		Acute	Chronic
	(mg/kg-day)^-1	(1-hour)	(annual avg)
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Residential MEI Concentrations

	TAC Concentrations (µg/m3)		
	2021	2022	2023
TAC	Max Period Average	Max Period Average	Max Period Average
DPM		0	0.00279
Benzene	0	0	0.01054
Ethylbenzene	0	0	0.02756
Formaldehyde	0	0	0.00492
Naphthalene	0	0	0.00032
1,3 Butadiene	0	0	0.00045
Acetaldehyde	0	0	0.00212

2021 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0	-	0	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0	0	0	0
TOTAL			**0.0000**	**0**

*Maximum for all receptors (residential and worker)

2022 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0	-	0	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0.00000	0	0	0
TOTAL			**0.0000**	**0.00000**

*Maximum for all receptors (residential and worker)

2023 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0.00279	-	0.000558	-
Benzene	0.01054	0.50917	0.00351333	0.0188581
Ethylbenzene	0.02756	-	0.00001378	-
Formaldehyde	0.00492	0.18222	0.00054667	0.0033131
Naphthalene	0.00032	-	3.5556E-05	-
1,3 Butadiene	0.00045	0.01666	0.000225	2.524E-05
Acetaldehyde	0.00212	0.07853	1.5143E-05	0.0001671
Toluene	0.10555	4.69224	0.00035183	0.0001268
Xylenes	0.03166	1.40767	4.5229E-05	6.399E-05
TOTAL			**0.0053**	**0.0890681**

*Maximum for all receptors (residential and worker)

Stanislaus Co Pirrone Rd Gas/Market Commercial Development - Operations Impacts
Maximum Residential Cancer Risk from Construction & Operations
70-Year Residential Exposure at MEI

Cancer Risk Calculation Method

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

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

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

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

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - < 2**	**2 - < 16**	**16 - 70**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	745	290
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	1.00

* 95th percentile breathing rates

Cancer Potency Factors and Reference Exposure Levels (REL)

		REL (µg/m3)	
TAC	**CPF $(mg/kg\text{-}day)^{-1}$**	**Acute (1-hour)**	**Chronic (annual avg)**
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Project Operation Cancer Risk - Maximum Project Operation Impact Receptor Location

				Maximum - Exposure Information Annual Conc (µg/m3)							Cancer Risk (per million)							
Exposure Year Age	**Initial Exposure Year**	**Exposure Duration (years)**	**Age Sensitivity Factor**	**DPM**	**Benzene**	**Ethylbenzene**	**Formaldehyde**	**Naphthalene**	**1,3 Butadiene**	**Acetaldehyde**	**DPM**	**Benzene**	**Ethylbenzene**	**Formaldehyde**	**Naphthalene**	**1,3 Butadiene**	**Acetaldehyde**	**TOTAL**
'-0.25 - 0*	2023	0.25	10	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	3.79E-02	1.30E-02	0.0	1.28E-03	4.75E-04	3.34E-03	0.00	0.06
0 - 1	2023	1	10	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	4.58E-01	1.57E-01	0.0	1.54E-02	5.73E-03	4.03E-02	0.00	0.72
1 - 2	2023	1	10	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	4.58E-01	1.57E-01	0.0	1.54E-02	5.73E-03	4.03E-02	0.00	0.72
2 - 16	2023	14	3	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	1.32E+00	4.52E-01	0.1	4.43E-02	1.65E-02	1.16E-01	0.01	2.06
17 - 70	2023	54	1	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	6.58E-01	2.26E-01	0.1	2.22E-02	8.24E-03	5.79E-02	0.00	1.03
Total Increased Cancer Risk											**2.93**	**1.01**	**0.2**	**0.10**	**0.04**	**0.26**	**0.02**	**4.58**

* Third trimester of pregnancy

Stanislaus Co Pirrone Rd Gas/Market Commercial Development - Construction & Operation Without Mitigation
AERMOD Risk Modeling Parameters & Maximum TAC Concentrations & Non-Cancer Health Effects
Off-Site Residential & Worker Receptors (1.5m heights)

Receptor Information

Number of Receptors
Receptor Height = 1.5 meters
Receptor Distances = Variable - placed at nearby residences &workplaces as applicable

Meteorological Conditions

SJVAPCD Modesto Data 2013-2017
Land Use Classification Rural
Wind Speed = variable
Wind Direction = variable

Reference Exposure Levels (REL)

TAC	CPF	REL (µg/m3)	
		Acute	Chronic
	$(mg/kg\text{-}day)^{-1}$	(1-hour)	(annual avg)
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Residential MEI Concentrations

	TAC Concentrations (µg/m3)		
	2021	2022	2023
TAC	Max Period Average	Max Period Average	Max Period Average
DPM	0.10778	0.13135	0.00297
Benzene	0	0	0.02381
Ethylbenzene	0	0	0.05556
Formaldehyde	0	0	0.00534
Naphthalene	0	0	0.00027
1,3 Butadiene	0	0	0.00049
Acetaldehyde	0	0	0.0023

2021 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
TAC	Period Avg (µg/m3)	1-Hour (µg/m3)	Chronic	Acute
DPM	0.10778	-	0.021556	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0	0	0	0
TOTAL			**0.0216**	**0**

*Maximum for all receptors (residential and worker)

2022 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
TAC	Period Avg (µg/m3)	1-Hour (µg/m3)	Chronic	Acute
DPM	0.13135	-	0.02627	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0.00000	0	0	0
TOTAL			**0.0263**	**0.00000**

*Maximum for all receptors (residential and worker)

2023 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
TAC	Period Avg (µg/m3)	1-Hour (µg/m3)	Chronic	Acute
DPM	0.00279	-	0.000558	-
Benzene	0.01054	0.50917	0.0035133	0.0188581
Ethylbenzene	0.02756	-	1.378E-05	-
Formaldehyde	0.00492	0.18222	0.0005467	0.0033131
Naphthalene	0.00032	-	3.556E-05	-
1,3 Butadiene	0.00045	0.01666	0.000225	2.524E-05
Acetaldehyde	0.00212	0.07853	1.514E-05	0.0001671
Toluene	0.10555	4.69224	0.0003518	0.0001268
Xylenes	0.03166	1.40767	4.523E-05	6.399E-05
TOTAL			**0.0053**	**0.0890681**

*Maximum for all receptors (residential and worker)

Stanislaus Co Pirrone Rd Gas/Market Commercial Development - Construction & Operations Impacts - Without Mitigation
Maximum Residential Cancer Risk from Construction & Operations
70-Year Residential Exposure at MEI

Cancer Risk Calculation Method

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

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

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

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

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - < 2**	**2 - < 16**	**16 - 70**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	745	290
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	1.00

* 95th percentile breathing rates

Cancer Potency Factors and Reference Exposure Levels (REL)

		REL (µg/m3)	
TAC	**CPF $(mg/kg\text{-}day)^{-1}$**	**Acute (1-hour)**	**Chronic (annual avg)**
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Project Operation Cancer Risk - Maximum Project Operation Impact Receptor Location

				Maximum - Exposure Information Annual Conc (µg/m3)							Cancer Risk (per million)							
Exposure Year Age	**Initial Exposure Year**	**Exposure Duration (years)**	**Age Sensitivity Factor**	**DPM**	**Benzene**	**Ethylbenzene**	**Formaldehyde**	**Naphthalene**	**1,3 Butadiene**	**Acetaldehyde**	**DPM**	**Benzene**	**Ethylbenzene**	**Formaldehyde**	**Naphthalene**	**1,3 Butadiene**	**Acetaldehyde**	**TOTAL**
'-0.25 - 0*	2021	0.25	10	0.108	0.00	0	0	0	0	0	1.47E+00	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	1.47
0 - 1	2021	1	10	0.108	0.00	0	0	0	0	0	1.77E+01	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	17.70
1 - 2	2022	1	10	0.131	0.00	0	0	0	0	0	2.16E+01	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	21.57
2 - 16	2023	14	3	0.003	0.02	0.05556	0.00534	0.00027	0.00049	0.0023	1.40E+00	1.02E+00	0.2	4.81E-02	1.39E-02	1.26E-01	0.01	2.83
17 - 70	2023	54	1	0.003	0.02	0.05556	0.00534	0.00027	0.00049	0.0023	7.01E-01	5.11E-01	0.1	2.41E-02	6.95E-03	6.31E-02	0.00	1.41
Total Increased Cancer Risk											**42.84**	**1.53**	**0.3**	**0.07**	**0.02**	**0.19**	**0.01**	**44.98**

* Third trimester of pregnancy

Stanislaus Co Pirrone Rd Gas/Market Commercial Development - Construction & Operation With Mitigation
AERMOD Risk Modeling Parameters & Maximum TAC Concentrations & Non-Cancer Health Effects
Off-Site Residential & Worker Receptors (1.5m heights)

Receptor Information

Number of Receptors
Receptor Height = 1.5 meters
Receptor Distances = Variable - placed at nearby residences &workplaces as applicable

Meteorological Conditions

SJVAPCD Modesto Data 2013-2017
Land Use Classification Rural
Wind Speed = variable
Wind Direction = variable

Reference Exposure Levels (REL)

TAC	CPF	REL (µg/m3)	
		Acute	Chronic
	(mg/kg-day)$^{-1}$	(1-hour)	(annual avg)
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Acetaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Residential MEI Concentrations

	TAC Concentrations (µg/m3)		
	2021	2022	2023
TAC	Max Period Average	Max Period Average	Max Period Average
DPM	0.01263	0.02515	0.00279
Benzene	0	0	0.01054
Ethylbenzene	0	0	0.02756
Formaldehyde	0	0	0.00492
Naphthalene	0	0	0.00032
1,3 Butadiene	0	0	0.00045
Acetaldehyde	0	0	0.00212

2021 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0.01263	-	0.002526	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0	0	0	0
TOTAL			**0.0025**	**0**

*Maximum for all receptors (residential and worker)

2022 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0.02515	-	0.00503	-
Benzene	0	0	0	0
Ethylbenzene	0	-	0	-
Formaldehyde	0	0	0	0
Naphthalene	0	-	0	-
1,3 Butadiene	0	0	0	0
Acetaldehyde	0	0	0	0
Toluene	0	0	0	0
Xylenes	0.00000	0	0	0
TOTAL			**0.0050**	**0.00000**

*Maximum for all receptors (residential and worker)

2023 - Maximum Non-Cancer Health Effects

	Maximum Concentration*		Hazard Index	
	Period Avg	1-Hour		
TAC	(µg/m3)	(µg/m3)	Chronic	Acute
DPM	0.00279	-	0.000558	-
Benzene	0.01054	0.50917	0.0035133	0.0188581
Ethylbenzene	0.02756	-	1.378E-05	-
Formaldehyde	0.00492	0.18222	0.0005467	0.0033131
Naphthalene	0.00032	-	3.556E-05	-
1,3 Butadiene	0.00045	0.01666	0.000225	2.524E-05
Acetaldehyde	0.00212	0.07853	1.514E-05	0.0001671
Toluene	0.10555	4.69224	0.0003518	0.0001268
Xylenes	0.03166	1.40767	4.523E-05	6.399E-05
TOTAL			**0.0053**	**0.0890681**

*Maximum for all receptors (residential and worker)

Stanislaus Co Pirrone Rd Gas/Market Comercial Development - Construction & Operations Impacts - With Mitigation
Maximum Residential Cancer Risk from Construction & Operations
70-Year Residential Exposure at MEI

Cancer Risk Calculation Method

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

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

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

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

Values

		Infant/Child		Adult
Age -->	3rd Trimester	0 - < 2	2 - < 16	16 - 70
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	745	290
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	1.00

* 95th percentile breathing rates

Cancer Potency Factors and Reference Exposure Levels (REL)

TAC	CPF $(mg/kg\text{-}day)^{-1}$	REL (µg/m3) Acute (1-hour)	Chronic (annual avg)
DPM	1.10E+00	-	5
Benzene	1.00E-01	27	3
Ethylbenzene	8.70E-03	-	2,000
Formaldehyde	2.10E-02	55	9
Naphthalene	1.20E-01	-	9
1,3 Butadiene	6.00E-01	660	2
Aceltaldehyde	1.00E-02	470	140
Toluene	-	37,000	300
Xylenes	-	22,000	700

Project Operation Cancer Risk - Maximum Project Operation Impact Receptor Location

Exposure Year Age	Initial Exposure Year	Exposure Duration (years)	Age Sensitivity Factor	Maximum - Exposure Information Annual Conc (µg/m3) DPM	Benzene	Ethylbenzene	Formaldehyde	Naphthalene	1,3 Butadiene	Aceltaldehyde	Cancer Risk (per million) DPM	Benzene	Ethylbenzene	Formaldehyde	Naphthalene	1,3 Butadiene	Aceltaldehyde	TOTAL
'-0.25 - 0*	2021	0.25	10	0.013	0.00	0	0	0	0	0	1.72E-01	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	0.17
0 - 1	2021	1	10	0.013	0.00	0	0	0	0	0	2.07E+00	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	2.07
1 - 2	2022	1	10	0.025	0.00	0	0	0	0	0	4.13E+00	0.00E+00	0.0	0.00E+00	0.00E+00	0.00E+00	0.00	4.13
2 - 16	2023	14	3	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	1.32E+00	4.52E-01	0.1	4.43E-02	1.65E-02	1.16E-01	0.01	2.06
17 - 70	2023	54	1	0.003	0.01	0.02756	0.00492	0.00032	0.00045	0.00212	6.58E-01	2.26E-01	0.1	2.22E-02	8.24E-03	5.79E-02	0.00	1.03
	Total Increased Cancer Risk										**8.35**	**0.68**	**0.2**	**0.066**	**0.025**	**0.174**	**0.01**	**9.46**

* Third trimester of pregnancy

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: June 11, 2019

CCaIC File #: 11104N
Re: Project: Commercial Improvements on APN 003-014-007 at intersection of Pirrone Rd. and Arborwood Dr., Stanislaus Co.; Tentative Parcel Map Application

Vionna Adams, PE
O'Dell Engineering
1165 Scenic Drive, Ste. A
Modesto, CA 95350

Email: vadams@odellengineering.com

Dear Ms. Adams,

We have conducted a records search as per your request for the above-referenced project area located on the Salida USGS 7.5-minute quadrangle map in Stanislaus County.

Search of our files includes review of our maps for the specific project area and the immediate vicinity of the project area, and review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), *California Inventory of Historic Resources* (DPR 1976), the *California Historical Landmarks* (1990), and the California Points of Historical Interest listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (HPDF) and the Archaeological Determinations of Eligibility (ADOE) (Office of Historic Preservation current computer lists dated 3-20-2014 and 4-05-2012, respectively), the *Survey of Surveys* (1989), GLO Plats and other historic maps on file for the area, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search:

Prehistoric or historic resources within the project area:

No prehistoric or historic-era archaeological resources or historic properties have been reported to the CCaIC at this time. However, this does not preclude their presence in this area.

Other historic information:

- GLO Plat T2S/R8E (sheet #44-113, dated 1852-1854) shows that the SW ¼ of Section 28 was already subdivided into several lots by that time.

- The 1906 map of Stanislaus Co. shows the highway, the road on the E. side of the property (going north to the river), and it references E. M. Murphy as the estate owner.

- The 1915 Salida USGS map (1:31680) does not show any cultural references in or directly adjacent, but it shows an access road to the north of the property, aligned SW to NE.

- The 1941 Modesto West USACE 15' map references SR 99 as "Stockton Road" and also shows an access road to the north (different alignment from 1915).

- The 1953 Salida USGS 7.5' map shows access road along the north boundary of the property as well, but nothing additional for the property.

- The 1969 Salida USGS 7.5' map shows an orchard, and access roads along the north and east side. Then the 1969 / Photo Revised 1976 map shows the SR 99 interchange encroaching on the area.

- The book *Annals of Stanislaus County, Volume I: River Towns and Ferries* (Brotherton 1982:53-55) contains a map (prepared for the book) that indicates that the property was at or very near an old road to and from the first location (1865) of Murphy's Ferry on the Stanislaus River. The road diverted from another road just south of the property.

Prehistoric or historic resources within the immediate vicinity of the project area:

None have been reported to the CCaIC.

Resources that are known to have value to local cultural groups:

None have been formally reported to the Information Center.

Previous investigations within the project area:

One has been reported to the CCaIC:

CCIC Report #ST-07235 **Author/Date** Blind, H. (2010)
Historic Property Survey Report for the Hammett Road/State Route 99 Interchange Reconstruction Project, Salida, Stanislaus County and San Joaquin County, California, Caltrans District 10 EA#10-0L320.

The above study involved an archaeological field survey and an architectural survey for cultural resources that included most of the subject property as part of the APE for a Caltrans project (included all of the property except the SE corner, or approximately the eastern half of Parcel 3).

Previous investigations within the immediate vicinity of the project area:

One has been reported:

CCaIC Report #ST-00926 **Author/Date** Peak & Associates, Inc. (1989)
Cultural Resource Assessment of the North Salida Specific Plan Area, Stanislaus County, California.

Recommendations/Comments:

Based on existing data in our files the project area has a low sensitivity for the possible discovery of historical resources, prehistoric or historic-era. The authors of report ST-07235 concluded at the end of their study that the area surveyed (most of the project area, and that closest to the river) had a low sensitivity for surface or subsurface prehistoric cultural deposits. We would like to caution, however, that this does not make their presence *impossible*, even under the agricultural plow zone: the project area is less than ½-mile from the southern terraces of the Stanislaus River, and there is at least one recorded Native American occupation site known to be within one mile of this property, in association with the river. We offer no recommendations for further study at this time, but please keep in mind the advisories below:

Please be advised that a historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over 45 years old. There may be unidentified features involved in your project that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate discipline. If you should need it, The Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at http://chrisinfo.org

We advise you that in accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, Sacramento (916-373-3710) are to be notified immediately for recommended procedures.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

We thank you for using the California Historical Resources Information System (CHRIS). Please let us know when we can be of further service. Please sign and return the attached Access Agreement Short Form.

Note: Billing ($150.00) will be transmitted separately via email from our Financial Services Office (lamarroquin@csustan.edu or MSR270@csustan.edu), payable within 60 days of receipt of the invoice.

Sincerely,

Robin Hards

R. L. Hards, Assistant Research Technician
Central California Information Center
California Historical Resources Information System

*Invoice to: Laurie Marroquin lamarroquin@csustan.edu, Financial Services

CAL SIERRA FINANCIAL
PIRRONE ROAD GAS STATION & CONVENIENCE STORE NOISE STUDY

FEBRUARY 15, 2021
Revised

PREPARED FOR:
CAL SIERRA FINANCIAL

PREPARED BY:
ACOUSTICS GROUP, INC.
CONSULTANTS IN ACOUSTICS, NOISE & VIBRATION

Cal Sierra Financial –
Pirrone Road Gas Station &
Convenience Store
Noise Study

Prepared for:
Mr. Baldev Grewal
Cal Sierra Financial Inc.
2807 G St.
Merced, CA 95340

Prepared by:
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ANGELICA NGUYEN – Senior Acoustical Consultant

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EXECUTIVE SUMMARY

Acoustics Group, Inc., (AGI) was retained to conduct a noise study of the future exterior operations from the Pirrone Road Gas Station and Convenience Store Project in Stanislaus County, CA. AGI has reviewed the Stanislaus County Noise Standards, conducted noise measurements, analyzed the noise levels from future noise sources at the site, assessed the impact of the future noise to determine compliance with the County's Exterior Noise Ordinance Standards, and recommended noise control measures.

Cal Sierra Financial proposes the construction of a Gas Station and Convenience Store that has the potential to affect neighboring properties. The maximum noise level (Lmax) from the rooftop condenser units would be as high as 34.7, 31.9 and 24.3 dBA at R1, R2, and R3, respectively. The Lmax from the air compressor would be as high as 26.0, 26.9, and 11.5 dBA at R1, R2, and R3, respectively. The noise level generated by future on-site operational traffic movements would result in a noise level of 41.5, 38.0, and 29.5 dBA at R1, R2, and R3, respectively. Cars starting would result in maximum noise levels as high as 33.3, 30.2, and 14.2 dBA at R1, R2, and R3, respectively. Car door slams would result in maximum noise levels as high as 32.8, 29.5, and 14.7 dBA at R1, R2, and R3, respectively. The drive through menu board would result in a noise level of 29.0, 21.8 and 13.8 dBA at R1, R2, and R3, respectively. Noise levels from the Gas Station and Convenience Store operations would comply with the daytime and nighttime standards of 50 and 45 dBA, respectively. Additionally, the operational noise will be significantly below the measured range in hourly ambient Leq of 54.7 to 62.0 dBA at NM1.

The Project's incremental increase in traffic noise will range from 0.2 to 1.9 dBA. The Project's greatest increase above Existing is not expected to generate an incremental increase of 3 dBA or greater; therefore, the Project traffic would not result in a significant traffic noise impact.

Additionally, noise levels from the Existing Plus Project and Cumulative plus Project cases were evaluated at the nearest noise sensitive receptors. Existing plus Project peak hour traffic noise levels would be as high 44.8, 45.3, and 37.0 dBA at R1, R2, and R3, respectively. The Existing plus Project 24-hour CNEL traffic noise levels would be as high as 47.2, 47.7, and 39.4 dB at the same receptor locations. Existing plus Project generated traffic noise levels would not exceed the County of Stanislaus CNEL Exterior Noise Guideline of 70 dB CNEL. Cumulative plus Project peak hour traffic noise levels would be as high as 44.9, 45.3, and 37.0 dBA at R1, R2, and R3, respectively. The Cumulative plus Project 24-hour CNEL traffic noise levels would be as high as 47.3, 47.7, and 39.4 dB, at the same receptor locations. The Project would comply with the Stanislaus County Noise Guideline of 70 dBA CNEL for Residential Land Uses.

This report has been organized into multiple sections for ease of reference. Section 1 introduces the Project and provides a general discussion on the Project Components. Section 2 discusses Noise Fundamentals, and Section 3 presents the Stanislaus County Noise Standards. Section 4 presents the Existing Noise Levels. Section 5 discusses the Noise Analysis and Section 6 discusses the Impact Assessment. Section 7 discusses the Conclusion.

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1. INTRODUCTION

Cal Sierra Financial proposes a new Gas Station, Convenience Store, and Mini-Storage in Stanislaus County, CA. Refer to Figure 1 for the general location of the future Gas Station and Convenience Store. Land uses immediately surrounding the site are residential and agricultural. The main noise concern is future Gas Station and Convenience Store operations affecting neighboring residential properties to the southeast (R1 and R2) and east (R3). Figure 2 shows the site plan and location of the proposed Gas Station and Convenience Store. Refer to the Appendix for the Project Drawings.

Figure 1. Location of the Project Site and Vicinity Map

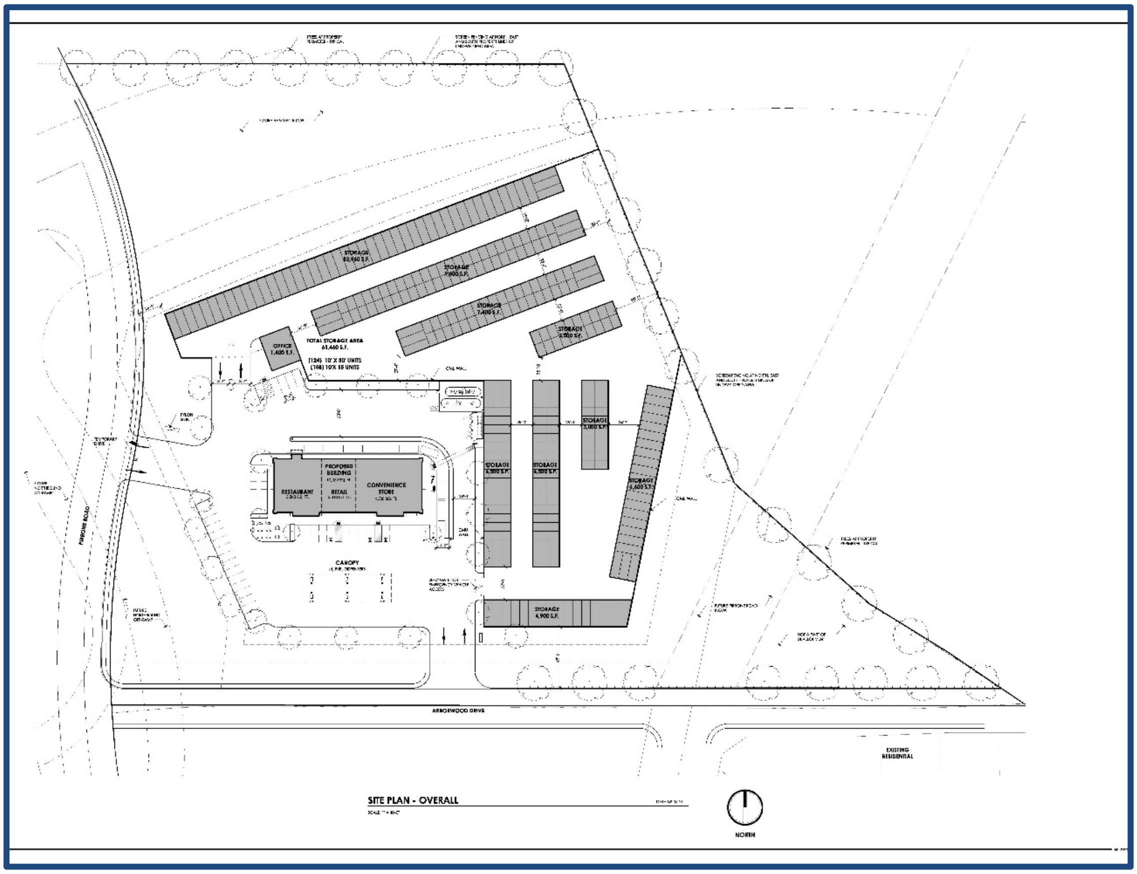
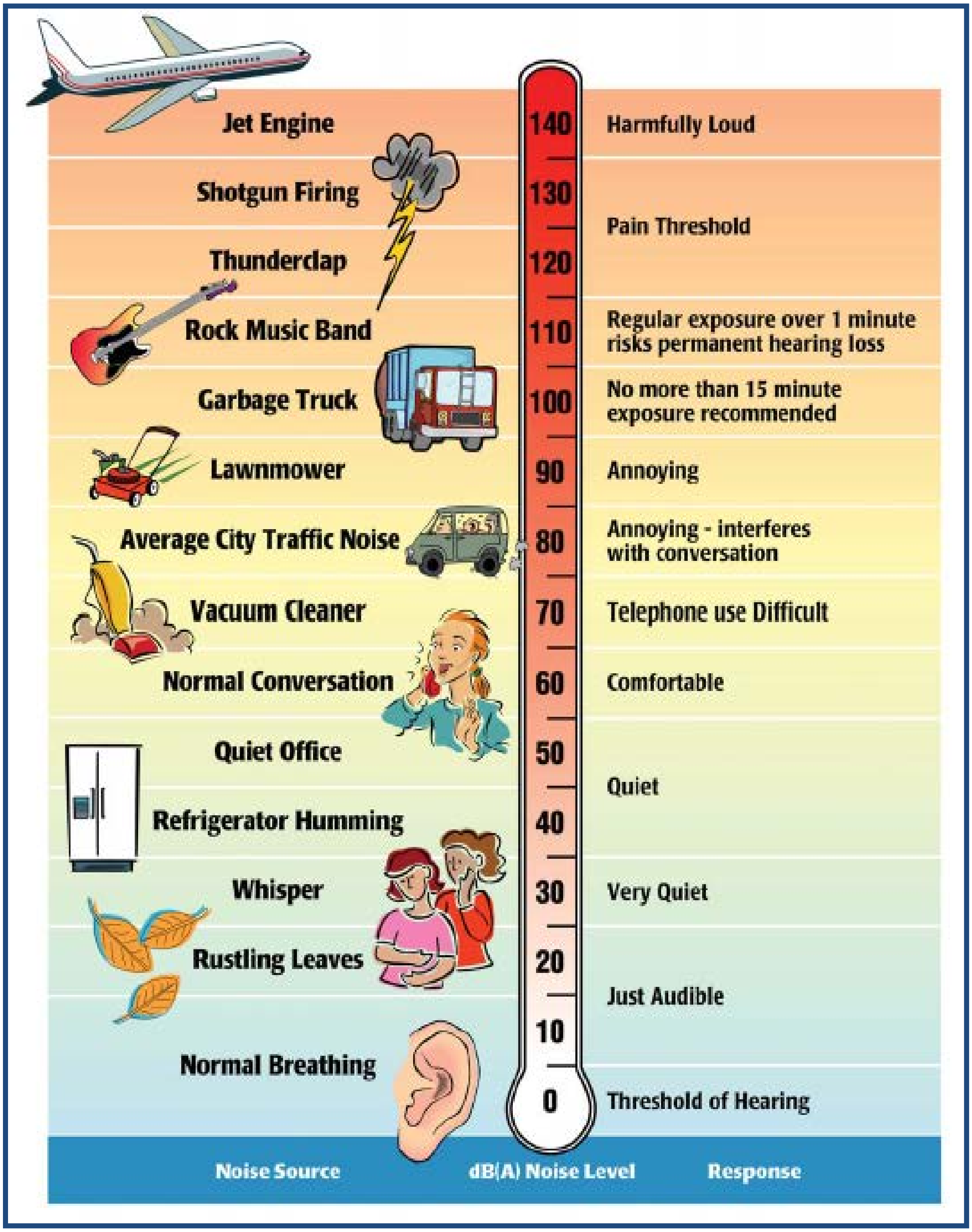


Figure 2. Site Plan and Location of Proposed Gas Station, Convenience Store, and Mini-Storage

2. NOISE

The magnitude by which noise affects its surrounding environment is measured on a logarithmic scale in decibels (dB). Because the human ear is limited to hearing a specific range of frequencies, the A-weighted filter system is used to form relevant results. A-weighted sound levels are represented as dBA. Figure 3 shows typical A-weighted exterior and interior noise levels that occur in human environments.

Several noise metrics have been developed to evaluate noise. L_{eq} is the energy average noise level and corresponds to a steady-state sound level that has the same acoustical energy as the sum of all the time-varying noise events. L_{max} is the maximum noise level measured during a sampling period, and L_{xx} are the statistical noise levels that are exceeded xx-% of the time of the measurement. L_{50} is the average noise level that is exceeded 50% of the time, 30 minutes in a 60-minute period.



Source: Melville Branch and R. Beland, 1970. EPA/ONAC 550/9-74-004, March 1974.

Figure 3. Typical A-weighted Sound Levels

3. NOISE STANDARDS

Stanislaus County has adopted regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise (Chapter 10.46 Noise Control). Stanislaus County limits the maximum noise level at the nearest residential property line to 50 and 45 dBA during the daytime and nighttime, respectively. These standards are intended to regulate intrusive noise from noise occurring on private property, commercial and industrial operations. Refer to Table 1 for the Stanislaus County noise standards.

Table 1. Stanislaus County Noise Standards

Land Use	Time Period	Maximum A-weighted Sound Level (Lmax), dBA
Residential	Daytime (7AM – 9:59PM)	50
	Nighttime (10PM – 6:59AM)	45

The County of Stanislaus General Plan (Chapter 4) establishes noise and land use compatibility guidelines for land uses. For residential land uses, the threshold separating conditionally acceptable compatibility with design and insulation and incompatibility noise exposure is 70 dB CNEL.

A significant impact would be identified if traffic generated by the project or project improvements/operations would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA CNEL or greater where the future noise level is compatible in terms of noise and land use compatibility, or b) the noise level increase is 3 dBA CNEL or greater where the future noise level exceeds the compatibility threshold. Refer to Figure 4 for the Land Use Compatibility Matrix.

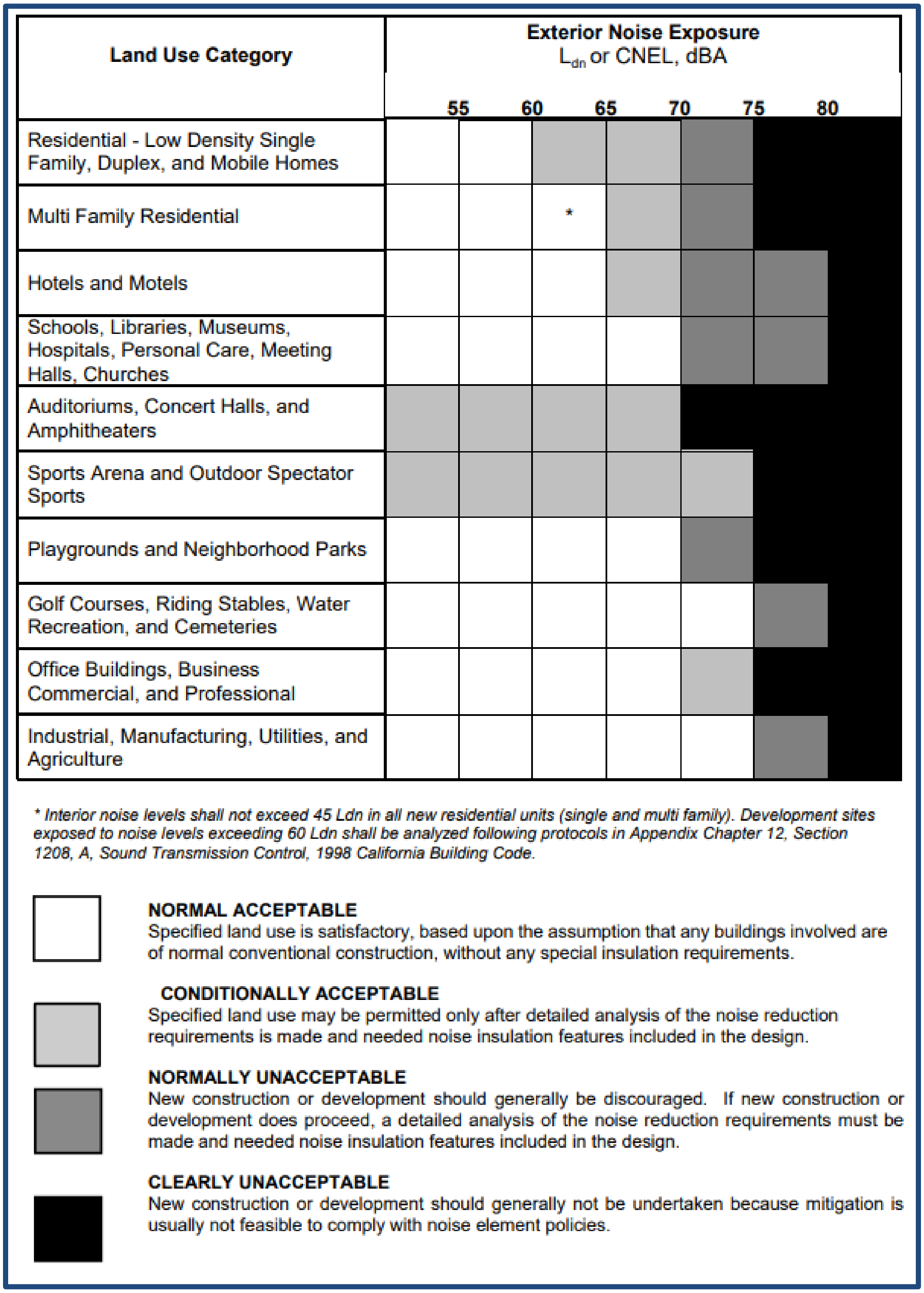


Figure 4. County of Stanislaus Land Use Compatibility for Community Noise Environments

4. EXISTING NOISE LEVELS

AGI conducted a site visit on March 2 through 3, 2020 to observe the project site and to conduct one long term ambient noise measurement. The ambient noise measurement was conducted along the east project site boundaries (NM1) to document baseline noise levels. Figure 5 shows the location of the noise measurement (NM1).

The hourly Leq measured at NM1 ranged from 58.6 to 61.0 dBA. The noise sources contributing to the ambient measurement data at NM1 was from vehicular traffic. Table 2 summarizes the noise measurement data from the survey. Refer to the Appendix for additional measurement data.

Table 2. Summary of Ambient Noise Measurements

Receiver	Location	Date and Time	Lmin, dBA	Lmax, dBA	Leq, dBA	CNEL, dB	Noise Sources
NM1	Project Site	3/2/20 11:00 AM – 3/3/20 11:00 AM	47.1	73.1	54.7 – 62.0	66.4	Vehicular Traffic

Figure 5. Noise Monitor Location

5. NOISE ANALYSIS

On-site Operational Noise

The future noise generated from the Gas Station and Convenience Store on-site operations has the potential to impact nearby properties. The methodology used to analyze and predict operational noise involved the use of the CadnaA computer noise model. CadnaA can simulate the physical environment by factoring in x, y, and z geometrics of a particular site to simulate the buildings, obstacles, and typography. The model uses industry recognized algorithms (ISO 9613) to perform acoustical analyses. The noise generated by future operations was calculated by inputting acoustical sources at the project site. AGI's industry acoustical database was used for the modeling inputs. Specific operating parameters for the Gas Station and Convenience Store were provided by Cal Sierra Financial.

The Gas Station and Convenience Store future operations were modeled with peak hour operational data. Rooftop condenser units (3-, 5-, 7- and 10-ton) were modeled operating continuously. A standard auto air compressor was modeled as per the project drawings. A traffic projected volume of 200 vehicles was modeled in CadnaA entering/exiting the Project per peak hour. The maximum noise source associated with customer vehicles are attributed to cars starting and car door slams. A car starting and a car door slam was modeled at the project property line adjacent to the nearest residence. Table 3 lists the acoustical source data used in the analysis.

Table 3. Acoustical Source Sound Power Level Data

Source	Sound Power Level, re 1 picoWatt, dB									Lmax @ 10 ft, dBA
	31.5	63.0	125	250	500	1k	2k	4k	8k	
3 Ton Rooftop Condenser[1]	-	79	85	79	79	77	71	67	58	60.0
5 Ton Rooftop Condenser[1]	-	80	86	84	85	83	79	73	67	66.1
7 Ton Rooftop Condenser[1]	-	92	96	92	89	85	80	76	69	69.6
10 Ton Rooftop Condenser[1]	-	89	87	91	85	80	77	73	66	66.0
Air Compressor[2]	97	100	84	87	79	77	76	80	76	65.1
Car Starting[2]	94	89	83	81	80	79	81	78	74	65.4
Car Door Slam[2]	99	90	84	83	82	81	79	76	70	65.0
Menu Board	81	77	71	70	78	80	83	69	40	64.9

Note: [1]Trane Packaged Rooftop Air Conditioners Precedent – Cooling and Gas/Electric, March 2015.
[2]AGI Noise Measurement Database, 2020.

The maximum noise level (Lmax) from the rooftop condenser units would be as high as 34.7, 31.9 and 24.3 dBA at R1, R2, and R3, respectively. The Lmax from the air compressor would be as high as 26.0, 26.9, and 11.5 dBA at R1, R2, and R3, respectively.

The noise level generated by future on-site operational traffic movements would result in a noise level of 41.5, 38.0, and 29.5 dBA at R1, R2, and R3, respectively. Cars starting would result in maximum noise levels as high as 33.3, 30.2, and 14.2 dBA at R1, R2, and R3, respectively. Car door slams would result in maximum noise levels as high as 32.8, 29.5, and 14.7 dBA at R1, R2, and R3, respectively. The drive through menu board would result in a noise level of 29.0, 21.8, and 13.8 dBA at R1, R2, and R3, respectively. Refer to Table 4 for the predicted maximum noise levels from facility operations.

Table 4. Predicted Noise Levels from Gas Station and Convenience Store

Noise Source	Maximum Noise Level at Receptor Location, dBA		
	R1	R2	R3
Rooftop Compressors	34.7	31.9	24.3
Air Compressor	26.0	26.9	11.5
On-site Traffic	41.5	38.0	29.5
Car Start	33.3	30.2	14.2
Car Door Slam	32.8	29.5	14.7
Menu Board Speaker	29.0	21.8	13.8

Project Generated Traffic Noise

The future noise generated from the Gas Station and Convenience Store project generated traffic on public roadways has the potential to significantly increase the overall traffic noise level. The peak hour Leq and CNEL generated by existing and future traffic on the roadways that serve the proposed Project site has been estimated using the FHWA Traffic Noise Prediction Model and forecasted traffic data from Pinnacle Traffic Engineering. The project related traffic data was added to the Existing traffic data to evaluate the traffic noise greatest increase. The existing Peak Hour Leq is estimated to range from a low of 56.4 dBA to a high of 66.8 dBA and the existing Peak Hour Leq with the Project is estimated to range from a low of 58.8 dBA to a high of 68.6 dBA. The existing CNEL ranges from 60.0 to 69.2 dBA and the existing CNEL with the Project ranges from 61.7 to 71.0 dBA. The Project's increase in CNEL traffic noise will range from 0.2 to 1.9 dBA. The greatest increase would be expected to occur on the SR-99 NB Off Ramp. Table 5 shows the Existing traffic noise levels, the Existing plus Project Related traffic noise levels, and the incremental increase. Refer to the Appendix for the traffic noise calculations for the existing, existing plus project, cumulative, and cumulative plus project cases.

Table 5. Existing Traffic and Existing Plus Project Traffic Noise Increase

Roadway Segment	Existing AM Peak Hour Leq @ 50 ft, dBA	Existing PM Peak Hour Leq @ 50 ft, dBA	Existing Traffic CNEL @ 50 ft, dBA	Existing Plus Project AM Peak Hour Leq @ 50 ft, dBA	Existing Plus Project PM Peak Hour Leq @ 50 ft, dBA	Existing Plus Project CNEL @ 50 ft, dBA	Project CNEL Incremental Traffic Noise Contribution, dB
Pirrone Rd	66.8	64.7	69.2	68.6	66.6	71.0	1.8
Hammett Road	66.6	64.8	69.0	67.4	66.0	69.8	0.8
SR-99 NB Off Ramp	57.6	56.4	60.0	59.5	58.6	61.9	1.9
SR-99 NB On Ramp	64.9	62.4	67.3	65.2	63.1	67.6	0.3
SR-99 SB Off Ramp	63.6	64.1	66.5	63.8	64.3	66.7	0.2
SR-99 SB On Ramp	58.6	57.9	61.0	59.3	58.8	61.7	0.7

Additionally, noise levels from the Existing Plus Project and Cumulative plus Project cases were evaluated at the nearest noise sensitive receptors. Existing plus Project peak hour noise levels would be as high 44.8, 45.3, and 37.0 dBA at R1, R2, and R3, respectively. The Existing plus Project 24-hour CNEL would be as high as 47.2, 47.7, and 39.4 dB at the same receptor locations. Cumulative plus Project peak hour noise levels would be as high as 44.9, 45.3, and 37.0 dBA at R1, R2, and R3, respectively. The Cumulative plus Project 24-hour CNEL would be as high as 47.3, 47.7, and 39.4 dB, at the same receptor locations. Refer to Table 6 for the predicted traffic noise levels at the nearest noise sensitive receptors.

Table 6. Traffic Noise Levels at Noise Sensitive Receptors

Case	Peak Hour Traffic Noise Levels, dBA				24-hr CNEL, dB		
	Time Period	R1	R2	R3	R1	R2	R3
Existing	AM	43.1	43.5	35.6	45.5	45.9	38.0
	PM	41.6	42.0	34.1			
Existing + Project	AM	44.8	45.3	37.0	47.2	47.7	39.4
	PM	43.4	43.9	35.6			
Cumulative	AM	43.4	43.8	35.8	45.8	46.2	38.2
	PM	41.6	42.0	34.0			
Cumulative + Project	AM	44.9	45.3	37.0	47.3	47.7	39.4
	PM	43.4	43.9	35.7			

6. IMPACT ASSESSMENT

On-site Operational Noise

The Lmax from the rooftop condenser units would be as high as 34.7, 31.9 and 24.3 dBA at R1, R2, and R3, respectively. The Lmax from the air compressor would be as high as 26.0, 26.9, and 11.5 dBA at R1, R2, and R3, respectively. The noise level generated by future on-site operational traffic movements would result in a noise level of 41.5, 38.0, and 29.5 dBA at R1, R2, and R3, respectively. Cars starting would result in maximum noise levels as high as 33.3, 30.2, and 14.2 dBA at R1, R2, and R3, respectively. Car door slams would result in maximum noise levels as high as 32.8, 29.5, and 14.7 dBA at R1, R2, and R3, respectively. The drive through menu board would result in a noise level of 29.0, 21.8 and 13.8 dBA at R1, R2, and R3, respectively. Noise levels from the Gas Station and Convenience Store operations would comply with the daytime and nighttime standards of 50 and 45 dBA, respectively. Additionally, the operational noise will be significantly below the measured range in hourly ambient Leq of 54.7 to 62.0 dBA at NM1. Refer to Table 7 for the assessment of the maximum noise levels from facility operations with Stanlilaus County Noise Standards.

Table 7. Assessment of the Predicted Noise Levels from the Gas Station and Convenience Store On-site Operations

Noise Source	Maximum Noise Level at Receptor Location, dBA			Lmax Standard (Daytime/ Nighttime), dBA	Assessment (Daytime/Nighttime)		
	R1	R2	R3		R1	R2	R3
Rooftop Compressors	34.7	31.9	24.3	50/45	Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance
Air Compressor	26.0	26.9	11.5		Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance
On-site Traffic	41.5	38.0	29.5		Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance
Car Start	33.3	30.2	14.2		Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance
Car Door Slam	32.8	29.5	14.7		Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance
Menu Board Speaker	29.0	21.8	13.8		Compliance/ Compliance	Compliance/ Compliance	Compliance/ Compliance

Project Generated Traffic Noise

Project generated CNEL traffic noise levels at Receptors R1, R2 and R3 are well below the 70 dB CNEL Guidelines for traffic noise. The Project's CNEL incremental increase in traffic noise will range from 0.2 to 1.9 dBA. The Project's greatest increase above Existing is not expected to generate an incremental increase of 3 dBA or greater. Therefore, the Project traffic would not result in a significant traffic noise impact. Refer to Table 8 for the incremental increase and impact assessment.

Table 8. Assessment of the Project Traffic Noise Incremental Increase

Roadway Segment	Existing Traffic CNEL @ 50 ft, dBA	Existing Plus Project Traffic CNEL @ 50 ft, dBA	Project Incremental Traffic Noise Contribution, dB	Project Incremental Noise Criteria, dB	Project Incremental Traffic Noise Contribution, dB
Pirrone Rd	69.2	71.0	1.8	≥ 3	Insignificant
Hammett Road	69.0	69.8	0.8	≥ 3	Insignificant
SR-99 NB Off Ramp	60.0	61.9	1.9	≥ 3	Insignificant
SR-99 NB On Ramp	67.3	67.6	0.3	≥ 3	Insignificant
SR-99 SB Off Ramp	66.5	66.7	0.2	≥ 3	Insignificant
SR-99 SB On Ramp	61.0	61.7	0.7	≥ 3	Insignificant

The Existing plus Project 24-hour CNEL would be as high as 47.2, 47.7, and 39.4 dB at the same receptor locations. Existing plus Project generated traffic noise levels would not exceed the County of Stanislaus CNEL Exterior Noise Guideline of 70 dB CNEL. The Cumulative plus Project 24-hour CNEL would be as high as 47.3, 47.7, and 39.4 dB, at the same receptor locations. The Project would comply with the Stanislaus County Noise Guideline of 70 dBA CNEL for Residential Land Uses. Refer to Table 9 for the assessment of the predicted traffic noise levels at the nearest noise sensitive receptors.

Table 9. Assessment of Traffic Noise Levels at Noise Sensitive Receptors

Case	24-hr CNEL Traffic Noise Level, dB			Residential Land Use Guideline, dBA	Assessment		
	R1	R2	R3		R1	R2	R3
Existing	45.5	45.9	38.0	70	Compliance	Compliance	Compliance
Existing + Project	47.2	47.7	39.4		Compliance	Compliance	Compliance
Cumulative	45.8	46.2	38.2		Compliance	Compliance	Compliance
Cumulative + Project	47.3	47.7	39.4		Compliance	Compliance	Compliance

7. CONCLUSION

AGI has conducted a noise study of the Pirrone Road Gas Station and Convenience Store Project in Stanislaus County, CA. The Project Site Plan has been reviewed, noise measurements performed, noise levels analyzed, and an impact assessment performed to determine compliance with the relevant Noise Standards.

The maximum noise level (Lmax) from the rooftop condenser units would be as high as 34.7, 31.9 and 24.3 dBA at R1, R2, and R3, respectively. The Lmax from the air compressor would be as high as 26.0, 26.9, and 11.5 dBA at R1, R2, and R3, respectively. The noise level generated by future on-site operational traffic movements would result in a noise level of 41.5, 38.0, and 29.5 dBA at R1, R2, and R3, respectively. Cars starting would result in maximum noise levels as high as 33.3, 30.2, and 14.2 dBA at R1, R2, and R3, respectively. Car door slams would result in maximum noise levels as high as 32.8, 29.5, and 14.7 dBA at R1, R2, and R3, respectively. The drive through menu board would result in a noise level of 29.0, 21.8 and 13.8 dBA at R1, R2, and R3, respectively. Noise levels from the Gas Station and Convenience Store operations would comply with the daytime and nighttime standards of 50 and 45 dBA, respectively. Additionally, the operational noise will be significantly below the measured range in hourly ambient Leq of 54.7 to 62.0 dBA at NM1.

The Project's incremental increase in traffic noise will range from 0.2 to 1.9 dBA. The Project's greatest increase above Existing is not expected to generate an incremental increase of 3 dBA or greater; therefore, the Project traffic would not result in a significant traffic noise impact.

Additionally, traffic noise levels from the Existing Plus Project and Cumulative plus Project cases were evaluated at the nearest noise sensitive receptors. The Existing plus Project 24-hour CNEL would be as high as 47.2, 47.7, and 39.4 dB at the same receptor locations. Existing plus Project generated traffic noise levels would not exceed the County of Stanislaus CNEL Exterior Noise Guideline of 70 dB CNEL. The Cumulative plus Project 24-hour CNEL would be as high as 47.3, 47.7, and 39.4 dB, at the same receptor locations. The Project would comply with the Stanislaus County Noise Guideline of 70 dBA CNEL for Residential Land Uses.

The final engineering design should be reviewed by a qualified acoustical consultant to ensure compliance with the noise standards.

8. REFERENCES

1. Melville Branch and R. Beland, 1970. EPA/ONAC 550/9-74-004, March 1974.
2. Stanislaus County Noise Standards.
3. Project Drawings, prepared by, Architecture Plus Inc, received February 9, 2021.
4. Pirrone Road Gas Station & C Store - Project Trip Generation Estimates (PTE #350-A, dated February 10, 2020.
5. Pirrone Retail Project (PLN2019-0079); Stanislaus County, California Supplemental Trip Generation Analysis, dated January 22, 2021
6. Trane Packaged Rooftop Air Conditioners Precedent – Cooling and Gas/Electric, March 2015.
7. Salida Gas Station & C-Store Traffic Impact Analysis, prepared by Larry D. Hail, Pinnacle Traffic Engineering, dated March 9, 2020.

APPENDIX

EXTERIOR NOISE STANDARDS

MODELING INPUT & OUTPUT

PROJECT DRAWINGS

NOISE STANDARDS

Chapter 10.46 NOISE CONTROL

Note

* Prior ordinance history: Ord. CS 973.

10.46.010 Title.

The ordinance codified in this chapter may be cited as the "Stanislaus County Noise Control Ordinance." (Ord. CS 1070 §2, 2010).

10.46.020 Findings and policy.

The Stanislaus County board of supervisors hereby finds that every person is entitled to an environment in which the noise is not detrimental to his or her life, health, and enjoyment or property; that the peace, health, safety, and welfare of its citizens require protection from disturbing, excessive, offensive and loud noises from any and all sources in the unincorporated areas of the county; and the establishment of maximum permissible noise levels will further the public health, safety, welfare and peace and quiet of county inhabitants.

In order to control unnecessary, excessive and annoying noise in the county, it is hereby declared to be the policy of the county to prohibit such noise generated from or by all sources as specified in this chapter. It shall be the policy of the county to maintain quiet in areas that exhibit low noise levels and to implement programs aimed to reduce noise in those areas within the county where noise levels are above acceptable values.

It is determined that certain noise levels are detrimental to the public health, welfare and safety, and are contrary to public interest. Therefore, the board of supervisors declares that creating, maintaining, causing or allowing to be created, caused or maintained, any noise in a manner prohibited by or not in conformity with the provisions of this chapter, is a public nuisance and shall be punishable as such. (Ref. California Noise Control Act of 1973, Division 28, Sections 46000 et seq., of the California Health and Safety Code.) (Ord. CS 1070 §2, 2010).

10.46.030 Definitions.

A. "Ambient noise level" means the all encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

B. "A-weighted sound level" means the total sound level in decibels of all sound as measured with a sound level meter with a reference pressure of twenty microPascals using the A-weighted network (scale) at slow response. The unit of measurement shall be defined as dB(A).

C. "Construction equipment" means any machine used in the construction, erection, enlargements, alteration, conversion or movement of any building, structures or land together with any scientific surveys associated therewith.

D. "Decibel (dB)" means a unit for measuring the amplitude of sounds, equal to twenty times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is twenty microPascals.

E. "Dwelling unit" means a single unit providing complete independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

F. "Impulsive noise" means a noise of short duration with an abrupt onset and rapid decay.

G. "Lmax" means the maximum A-weighted sound level recorded during a noise event.

H. "Person" means a person, firm, association, partnership, joint venture, corporation or any entity, public or private in nature.

I. “Pure tone noise” means any noise that is distinctly audible as a single pitch (frequency) or set of pitches. A pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by five decibels for center frequencies of five hundred Hertz and above and by eight decibels for center frequencies of between one hundred sixty and four hundred Hertz and fifteen decibels for center frequencies less than or equal to one hundred twenty-five Hertz.

J. “Sound level meter” means an instrument used for measurement of sound levels, which at a minimum meets the American National Standards Institute (ANSI) Standard S1.4-1983 (R2006) or S1.4a-1985 (R2006) “Specifications for Sound Level Meters,” Type 2, or most recent version thereof.

K. “Sound level” in decibels, means twenty times the logarithm to the base ten of the ratio of the pressure of the sound to a reference pressure that is twenty microPascals. (Ord. CS 1070 §2, 2010).

10.46.040 Sound level measurement.

A. Sound level measurements may be made anywhere within the boundaries of a property. Where practical, the point of measurement should be positioned three to five feet above the ground and away from reflective surfaces. The actual location of a sound level measurement shall be at the discretion of the enforcement official.

B. Sound level measurements shall be made with a sound level meter which has been certified as meeting the standards of the American National Standards Institute within the last twelve months and the measurement shall be performed by an enforcement official trained in the use of the sound level meter. (Ord. CS 1070 §2, 2010).

10.46.050 Exterior noise level standards.

A. It is unlawful for any person at any location within the unincorporated area of the county to create any noise or to allow the creation of any noise which causes the exterior noise level when measured at any property situated in either the incorporated or unincorporated area of the county to exceed the noise level standards as set forth below:

1. Unless otherwise provided herein, the following exterior noise level standards shall apply to all properties within the designated noise zone:

Table A

EXTERIOR NOISE LEVEL STANDARDS

Designated Noise Zone	**Maximum A-Weighted Sound Level as Measured on a Sound Level Meter (LMAX)**	
	7:00 a.m.—9:59 p.m.	10:00 p.m.—6:59 a.m.
Noise Sensitive	45	45
Residential	50	45
Commercial	60	55
Industrial	75	75

2. Exterior noise levels shall not exceed the following cumulative duration allowance standards:

Table B

CUMULATIVE DURATION ALLOWANCE STANDARDS

Cumulative Duration	**Allowance Decibels**
Equal to or greater than 30 minutes per hour	Table A plus 0 dB

Equal to or greater than 15 minutes per hour	Table A plus 5 dB
Equal to or greater than 5 minutes per hour	Table A plus 10 dB
Equal to or greater than 1 minute per hour	Table A plus 15 dB
Less than 1 minute per hour	Table A plus 20 dB

3. Pure Tone Noise, Speech and Music. The exterior noise level standards set forth in Table A shall be reduced by five dB(A) for pure tone noises, noises consisting primarily of speech or music, or reoccurring impulsive noise.

4. In the event the measured ambient noise level exceeds the applicable noise level standard above, the ambient noise level shall become the applicable exterior noise level standard.

B. Noise Zones Defined.

1. Noise Sensitive. Any public or private school, hospital, church, convalescent home, cemetery, sensitive wildlife habitat, or public library regardless of its location within any land use zoning district.

2. Residential. All parcels located within a residential land use zoning district.

3. Commercial. All parcels located within a commercial or highway frontage land use zoning district.

4. Industrial. All parcels located within an industrial land use zoning district.

5. The noise zone definition of any parcel not located within a residential, commercial, highway frontage, or industrial land use zoning district shall be determined by the director of Stanislaus County planning and community development department, or designee, based on the permitted uses of the land use zoning district in which the parcel is located. (Ord. CS 1070 §2, 2010).

10.46.060 Specific noise source standards.

The following sound sources are subject to the following additional standards. The failure to comply with these additional standards constitutes a separate violation of this chapter:

A. Motor Vehicle Sound Systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of ten p.m. and seven a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than fifty feet from the vehicle. (Ref. California Vehicle Code Section 27007.)

B. Power Tools and Equipment. No person shall operate any power tools or equipment between the hours of ten p.m. and seven a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than one hundred feet from the power tools or equipment.

C. Audio Equipment. No person shall operate any audio equipment, whether portable or not, between the hours of ten p.m. and seven a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than fifty feet from the equipment.

D. Sound-Amplifying Equipment and Live Music. No person shall install, use or operate sound-amplifying equipment, or perform, or allow to be performed, live music unless the sound emanating from the sound-amplifying equipment or live music shall not be audible to the human ear at a distance greater than two hundred feet. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control.

E. Construction Equipment. No person shall operate any construction equipment so as to cause at or beyond the property line of any property upon which a dwelling unit is located an average sound level greater than seventy-five decibels between the hours of seven p.m. and seven a.m.

F. Burglar Alarms. Any building burglar alarm must have an automatic cutoff, capable of terminating its operation within fifteen minutes of the time it is activated. Notwithstanding the requirements of this provision, any member of the sheriff's department shall have the right to take such steps as may be reasonable and necessary to disconnect any such alarm during the period of its activation. Any structure upon which a burglar alarm has been installed shall prominently display the telephone number at which communication may be made with the owner of such structure.

G. Vehicle Alarms. No owner of a motor vehicle shall have in operation an audible burglar alarm therein unless such burglar alarm shall be capable of terminating its operation within fifteen minutes of the time it is activated. Notwithstanding the requirements of this provision, any member of the sheriff's department of Stanislaus County shall have the right to take such steps as may be reasonable and necessary to disconnect any such alarm installed on a motor vehicle at any time during the period of its activation. (Ref. California Vehicle Code Section 22651.5.) (Ord. CS 1070 §2, 2010).

10.46.070 Vibration.

Operating or permitting the operation of any device that creates vibration that is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at one hundred fifty feet from the source if on a public space or public right-of-way is prohibited. For the purpose of this section, "vibration perception threshold" means the minimum ground-borne or structure-borne vibration motion necessary to cause a reasonable person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects, or a measured motion velocity of 0.01 in/sec over the range of one to one hundred Hertz. (Ord. CS 1070 §2, 2010).

10.46.080 Exemptions.

The following sources are exempt from the provisions of this chapter:

A. Sounds for the purpose of alerting persons to the existence of an emergency;

B. Radios, sirens, horns, and bells on police, fire, and other emergency response vehicles;

C. Parades, fireworks displays, and other special events for which a permit has been obtained from the county are exempted provided there is compliance with all conditions that have been noted in writing on the permit. Noise produced as a result of noncompliance with any condition specified on the permit is not exempted from the requirements of this chapter;

D. Activities on or in publicly owned property and facilities, or by public employees while in the authorized discharge of their responsibilities, are exempt provided that such activities have been authorized by the owner of such property or facilities or its agent or by the employing authority;

E. Religious worship activities, including, but not limited to, bells, organs, singing, and preaching;

F. Locomotives and other railroad equipment, and aircraft;

G. The collection of solid waste is exempted to the extent that the noise of such collection is regulated by the Stanislaus County refuse ordinance (Chapters 9.02, 9.04, 9.08, 9.09, 9.10 and 9.12). Noise not covered by the Stanislaus County refuse ordinance is not exempted from the requirements of this chapter.

H. Agricultural activity, as such term is defined in Section 9.32.010(B), and any operation, facility or appurtenances thereof, that are conducted or maintained on agricultural lands for commercial purposes in a manner consistent with proper and accepted customs and standards as established and followed by similar agricultural operations in Stanislaus County.

I. Federal or State Preempted Activities. This chapter shall not apply to any activity to the extent regulation thereof has been preempted by state or federal law.

J. Public Entity or Public Utility Activity. This chapter shall not apply to construction or maintenance activities performed by or at the direction of any public entity or public utility.

K. Residential Maintenance Activity. Noise associated with the maintenance of residential property, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such activity occurs between the hours of seven a.m. and ten p.m. (Ord. CS 1070 §2, 2010).

10.46.090 Waiver.

A. Application. The property owner may request a permit for a waiver from any provision of this chapter.

1. The application for a waiver shall be filed with the department of planning and community development for presentation to the planning commission in writing, on a form prescribed by the director and shall be signed by the owner or authorized agent.

2. The application shall include the information deemed necessary by the director, including, but not limited to:

a. The nature and location of the noise source for which such application is made;

b. The reason for which the waiver is requested, including the hardship that will result to the applicant, or the public if the permit of waiver is not granted;

c. The level of noise that will occur during the period of the waiver;

d. The section or sections of this chapter for which the waiver shall apply;

e. A description of interim noise control measures to be taken for the applicant to minimize noise and the impacts of such noise control measures; and

f. A specific schedule of the noise control measures that shall be taken to bring the source into compliance with this chapter within a reasonable time.

B. A filing fee, in such amount as may be fixed from time to time by resolution of the board of supervisors, shall be paid at the time the application is filed.

C. Notice. The director shall give notice of the request for waiver to all the surrounding properties that would be impacted by the exception, for example, those properties that would experience a noise level at their property line that exceeds the standards as set forth in this chapter.

D. Standard for Issuance of Waiver. A permit to allow a waiver from the provisions contained in all or a portion of this chapter may be issued by the planning commission if the commission determines that:

1. Noise levels occurring during the period of the waiver will not constitute a danger to public health;

2. Compliance with the ordinance would impose an unreasonable hardship on the applicant without equal or greater benefits to the public; and

3. Strict compliance would be unreasonable due to the circumstances of the requested exception.

E. Factors considered for all requests for waiver, other than construction or special events, shall include, but not be limited to, the following:

1. Conformance with the intent of this chapter and general plan policies;

2. Uses of property and existence of sensitive receptors within the area affected by sound;

3. The ability of the applicant to apply the best practical noise control measures;

4. Age and useful life of the existing sound source;

5. The time of the day or night the waiver or waivers will occur;

6. The duration of the waiver; and

7. The general public interest, welfare and safety.

F. Within thirty days of receipt of a completed application, the director shall refer the request directly to the planning commission for action at the next available board meeting. The planning commission may impose reasonable conditions that minimize the public detriment and may include, but are not limited to, restrictions on sound level, sound duration and operating hours, an approved method of achieving compliance and a time schedule for its implementation.

G. Where a request for waiver is associated with a discretionary permit, the waiver shall be processed concurrently with the discretionary permit. In which case the planning commission shall be the approving authority for the exception. The planning commission must consider those factors identified above. The planning commission shall either: (1) approve or conditionally approve such request in whole or in part; or (2) deny the request. The planning commission may impose reasonable conditions that minimize the public detriment and may include, but are not limited to, restrictions on sound level, sound duration and operating hours, an approved method of achieving compliance and a time schedule for its implementation.

H. Where a waiver has been approved by the planning commission and verified complaints are received related to the waiver the commission has the authority to amend, condition or revoke the waiver, as the commission deems necessary so as to secure the purpose of this chapter.

I. Any person aggrieved by the decision of the planning commission may appeal to the board of supervisors by filing written notice of appeal with the director within ten days of the decision. The board of supervisors' decision shall be final and shall be based upon the considerations set forth in this section. All appeals shall be accompanied by an appeal fee as established from time to time by resolution of the board of supervisors. (Ord. CS 1070 §2, 2010).

10.46.100 Enforcement.

Stanislaus County sheriff officers shall have the primary responsibility for enforcement of this chapter. Violations may be prosecuted as described in Section 10.46.120 of this chapter, but nothing in this chapter shall prevent the sheriff from engaging in efforts to obtain voluntary compliance by means of warnings, notices, educational programs or any other means. (Ord. CS 1070 §2, 2010).

10.46.110 Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the enforcement officials identified herein when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter. (Ord. CS 1070 §2, 2010).

10.46.120 Violations and penalties.

A. Any person violating provisions of this chapter is guilty of an infraction, and, upon conviction thereof, shall be punished as an infraction as set forth in Stanislaus County Code Section 1.36.020. Every violation of any provision of this chapter shall be construed as a separate offense for each day during which such violation continues and shall be punishable as provided in this section.

B. All violations of this chapter constitute a public nuisance which, in addition to or in lieu of the penalty provisions set forth above, may be abated in any manner set forth in the Stanislaus County Code, including Chapter 2.92, which may include, but is not limited to, abatement or issuance of administrative citations. (Ord. CS 1070 §2, 2010).

Chapter 4

NOISE ELEMENT

1.0 INTRODUCTION

1.1 Authority

"The purpose of the noise element is to limit the exposure of the community to excessive noise levels."[1] The 2003 Noise Element Guidelines requires local governments to "analyze and quantify noise levels and the extent of noise exposure" through field measurements or noise modeling, and "implement measures and possible solutions to existing and foreseeable noise problems." California Government Code Section 65302(f) requires that current and projected noise levels be analyzed and quantified for highways, freeways, primary arterials, and major local streets. Noise contours for current and projected conditions within the community are required to be prepared in terms of either the Community Noise Equivalent Level (CNEL) or the Day-Night Average Level (L_{dn}), which are descriptors of total noise exposure at a given location for an annual average day. CNEL and L_{dn} are generally considered to be equivalent descriptors of the community noise environment within plus or minus 1.0 dBA. Section 1.4 provides an explanation of the acoustical terminology used in this document.

It is intended that the noise exposure information developed for the Noise Element be incorporated into the General Plan to serve as a basis for achieving Land Use compatibility within the unincorporated areas of the County. It is also intended that the noise exposure information developed for the Noise Element be used to provide baseline levels for use in the development and enforcement of a local noise control ordinance to address noise levels generated by non-preempted noise sources within the County.

According to the Noise Element Requirements and Noise Element Guidelines, the following major noise sources should be considered in the preparation of a Noise Element:

1. Highways and freeways
2. Primary arterials and major local streets
3. Passenger and freight online railroad operations and ground rapid transit systems
4. Commercial, general aviation, heliport, helistop, and military airport operations, aircraft over flights, jet engine test standards, and all other ground facilities and maintenance functions related to airport operation
5. Local industrial plants, including, but not limited to, railroad classification yards
6. Other ground stationary sources identified by local agencies as contributing to the community noise environment

Noise-sensitive areas to be considered in the Noise Element should include areas containing the following noise sensitive land uses:

1. Schools
2. Hospitals
3. Convalescent homes
4. Churches
5. Sensitive wildlife habitat, including the habitat of rare, threatened, or endangered species
6. Other uses deemed noise sensitive by the local jurisdiction

[1] State of California General Plan Guidelines 2003, Governor's Office of Planning and Research (OPR), State of California, October 2003, p. 87.

1.2 Relationship to Other Elements of the General Plan

The Noise Element is most related to the Land Use and Circulation Elements of the General Plan. Its relationship to the Land Use Element is direct in that the implementation of either element has the potential to result in the creation or elimination of a noise conflict with respect to differing land uses. The Land Use Element must be consistent with the Noise Element in discouraging the development of incompatible adjacent land uses to prevent impacts upon noise sensitive uses and to prevent encroachment upon existing noise-generating facilities.

The Circulation Element is linked to the Noise Element in that traffic routing and volume directly affect community noise exposure. For example, increased traffic volume may produce increased noise in a residential area so that noise control measures are required to provide an acceptable noise environment. Similarly, rerouting traffic from a noise-impacted neighborhood may provide significant noise relief to that area. Implementation of the Circulation Element should include consideration of potential noise effects.

1.3 Noise and Its Effects on People

The Technical Reference Document, included in the General Plan Support Document, is an update of a previous technical reference document and provides a discussion of the fundamentals of noise assessment, the effects of noise on people and criteria for acceptable noise exposure. It is intended that the Technical Reference Document serve as a reference for Stanislaus County when reviewing documents or proposals which refer to the measurement and effects of noise within the County.

1.4 Acoustical Terminology

"Ambient noise levels" means the composite of noise from all sources near and far. In this context it represents the normal or existing level of environmental noise at a given location for a specific time of the day or night.

"A weighted sound level" means the sound level in decibels as measured with a sound level meter using the "A" weighted network (scale) at slow meter response. The unit of measurement is referred to herein as dBA.

"CNEL" means Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

"Decibel, dB" means a unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

"Equivalent Energy Level, L_{eq}" means the sound level corresponding to a steady state sound level containing the same total energy as time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

"Impulsive Noise" means a noise of short duration, usually less than one second, with an abrupt onset and rapid decay.

"L_{max}" means the maximum A-weighted noise level recorded during a noise event.

"Day/Night Average Sound Level, L_{dn}" is a 24-hour measure of the cumulative noise exposure in a community, with a 10 dBA penalty added to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels.

"Noise Exposure Contours" Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and L_{dn} are the decriptors utilized herein to describe community exposure to noise.

"Preempted Noise Source" means a noise source which cannot be regulated by the local jurisdiction due to existing state or federal regulations already applying to the source. Examples of such sources are vehicles operated on public roadways, railroad trains and aircraft.

"Pure Tone Noise" means any noise which is distinctly audible as a single pitch (frequency) or set of pitches. For the purposes of this document, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hz and above and by 8 dB for center frequencies between 160 and 400 Hz and 15 dB for center frequencies less than or equal to 125 Hz.

2.0 EXISTING AND FUTURE NOISE ENVIRONMENT

2.1 Overview of Sources

Based on discussion with County of Stanislaus Department of Planning and Community Development staff regarding potential major noise sources and field studies conducted by Brown Buntin Associates (1986) and updated by Illingworth & Rodkin (2004), it was determined that there are a number of potentially significant sources of community noise within Stanislaus County. These sources include traffic on state highways and major County roadways, railroad operations, airport operations and industrial activities. Specific noise sources selected for study are described in the Technical Reference Document.

2.2 Methods and Noise Exposure Maps

The California Department of Transportation (Caltrans) Noise Prediction Model LeqV2 was used in conjunction with field noise level measurements to develop L_{dn} contours for the state highways and major county roadways within the unincorporated areas of Stanislaus County. Annual average daily traffic volumes (AADT) and truck mixes for existing (2000) and future (2030) conditions were obtained from Caltrans and the Stanislaus County Department of Public Works. CNEL contours for operations at the Oakdale Municipal Airport and the Modesto City/County Airport were derived from existing Airport Master Plan reports.

Tabulated existing noise contours for the major railroad lines throughout the county are shown in Table 1. Figure 1 shows the locations and generalized L_{dn} 2030 noise contours of major roadway noise sources. Noise exposure contours for major transportation sources of noise within the unincorporated areas of Stanislaus County are also contained within Appendix A (Existing Noise Sources) and B (Future Noise Sources) of the Technical Reference Document (2004). Generalized

L_{dn} noise contours of major industrial noise sources can be found in Part C-7 (Existing Noise Environment, Industrial and Other Stationary Noise Sources) of the Technical Noise Document (2004). It should be noted that these contours are generally based upon annual average conditions, and are not intended to be site-specific where local topography, vegetation or intervening structures may significantly affect noise exposure at a particular location. The noise contour maps have been prepared to assist Stanislaus County with the implementation of the Noise Element through the project review and long range planning processes.

3.0 COMMUNITY NOISE SURVEY

As required by the Government Code and ONC Guidelines, a community noise survey was conducted to document noise exposure in areas of the County containing noise sensitive land uses. The following noise sensitive land uses have been identified within Stanislaus County:

1. Residential uses in Single-Family Residential, Medium-Density Residential and Multiple-Family Residential zones.
2. Schools
3. Long-term care medical facilities, such as hospitals, nursing homes, etc.

Noise monitoring sites were selected to be representative of typical conditions in the unincorporated areas of the County where noise sensitive land uses are located. A combination of short-term and long-term (24-hour) noise monitoring was used to document existing noise levels at these locations during July and August of 2004. A total of 30 monitoring sites were selected, including 20 long-term noise measurements and 10 short-term noise measurements. Measurement locations are shown in Figure 2.

Long-term noise measurements were conducted to show the daily trend in noise levels throughout a 24-hour to 48-hour period. Noise level data collected during continuous monitoring included the Leq, maximum noise level and the statistical distribution of noise levels for each hour of the sample period. The hourly fluctuations of noise levels at the long-term sites are summarized in graphic form in Appendix A of the Technical Reference Document (2004).

Short-term noise measurements were conducted in simultaneous intervals with traffic volume and speed observations. L_{dn} noise levels at each receiver were calculated by adjusting for differences in traffic conditions during measurements and the loudest existing hourly traffic conditions (based on the existing AADT traffic volumes). The data collected during the short-term sampling program included the L_{eq}, maximum noise level, minimum noise level and a description of major sources of noise which were audible. Long and short-term measured noise level data collected during the community noise survey are summarized in Tables 2 and 3.

The quietest areas of unincorporated Stanislaus County are those which are removed from major transportation-related noise sources and local industrial or other stationary noise sources. Good examples of these quiet areas are rural areas such as Hickman, Valley Home, and La Grange. The noisier areas surveyed were those located near state highways (Salida), major county roadways (Westport and Shackelford), or railroads (Empire). Typically, maximum noise levels observed during the survey were generated by local automobile traffic or heavy trucks. Other sources of maximum noise levels included occasional aircraft over flights and, in some areas, railroad operations (especially horns). Background noise levels in the absence of the above-described sources were caused by distant traffic, wind in the trees, running water, birds and distant industrial or other stationary noise sources.

4.0 LAND USE COMPATIBILITY GUIDELINES

Figure 3 is provided as reference concerning the sensitivity of different land uses to their noise environment. It is intended to illustrate the range of noise levels which will allow the full range of activities normally associated with a given land use. For example, exterior noise levels in the range of 50-60 L_{dn} (or CNEL) are generally considered acceptable for residential land uses, since these levels will usually allow normal outdoor and indoor activities such as sleep and communications to occur without interruption. Industrial facilities, however, can be relatively insensitive to noise and may generally be located in a noise environment of up to 75 L_{dn} (or CNEL) without significant adverse effects. Specific noise compatibility criteria in terms of L_{dn} or CNEL for residential and noise sensitive land uses in Stanislaus County are defined in Section 5.0.

Table 1: Noise Contour Distances for Major Railroad Lines (2004)

	Distance from Centerline of Roadway (in feet) Based on Traffic Noise Modeling			
Railroad Description*	**75-Ldn**	**70-Ldn**	**65-Ldn**	**60-Ldn**
Union Pacific Railroad (UPRR)	**70**	**150**	**320**	**680**
Burlington Northern and Santa Fe (BN & SF) Railway	**100**	**200**	**440**	**950**
Sierra Railroad	**	**	**	**80**
Tidewater Southern Railroad	**	**	**60**	**140**

**** Noise contour distances for the Modesto and Empire Traction Company Railroad were not calculated due to a lack of specific information regarding train movements along this track.***

***** Distances of less than 50 feet are not included in this table.***

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Figure 1: Noise Contours for Major Roadways (2030)

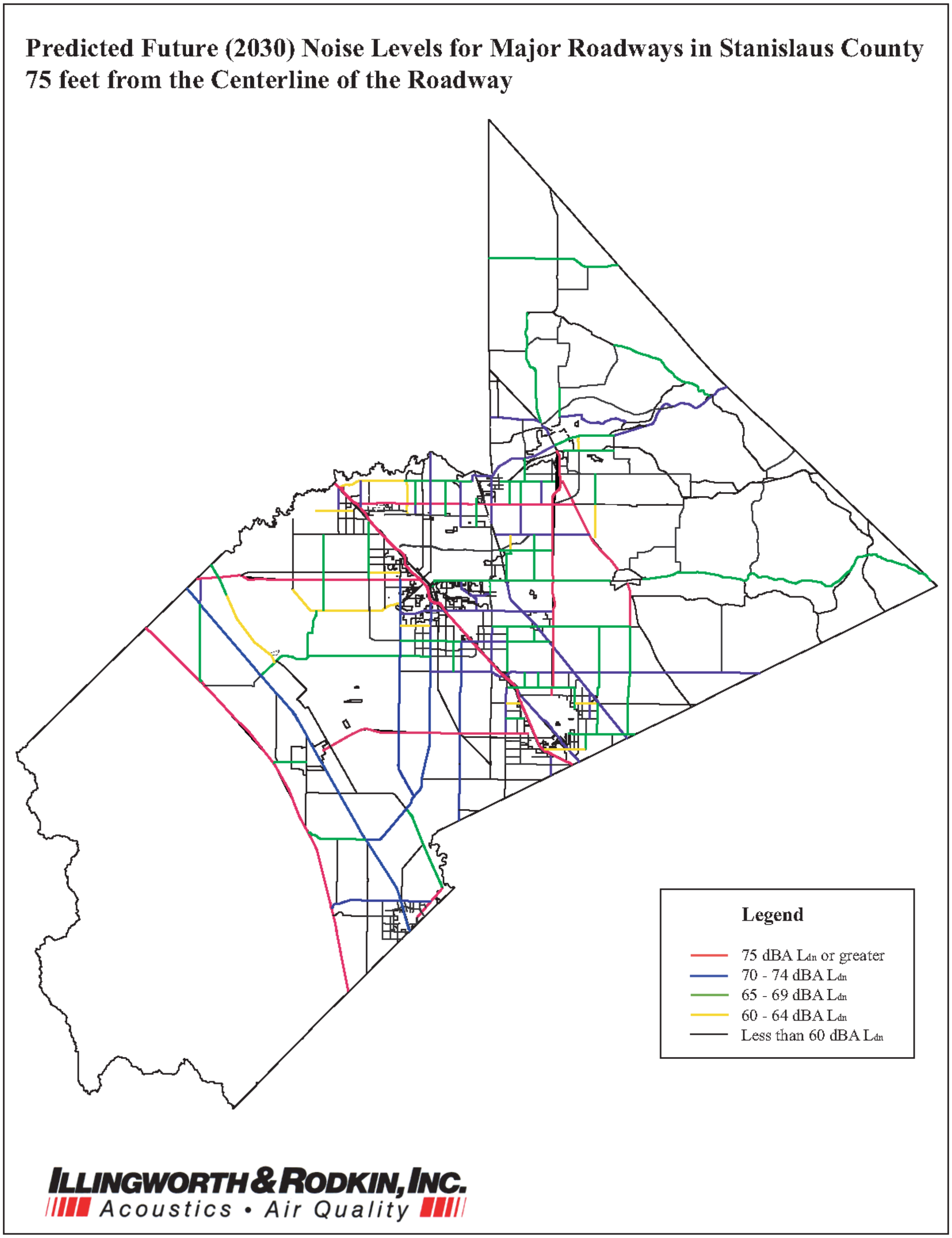

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Figure 2: Community Noise Survey Monitoring Sites

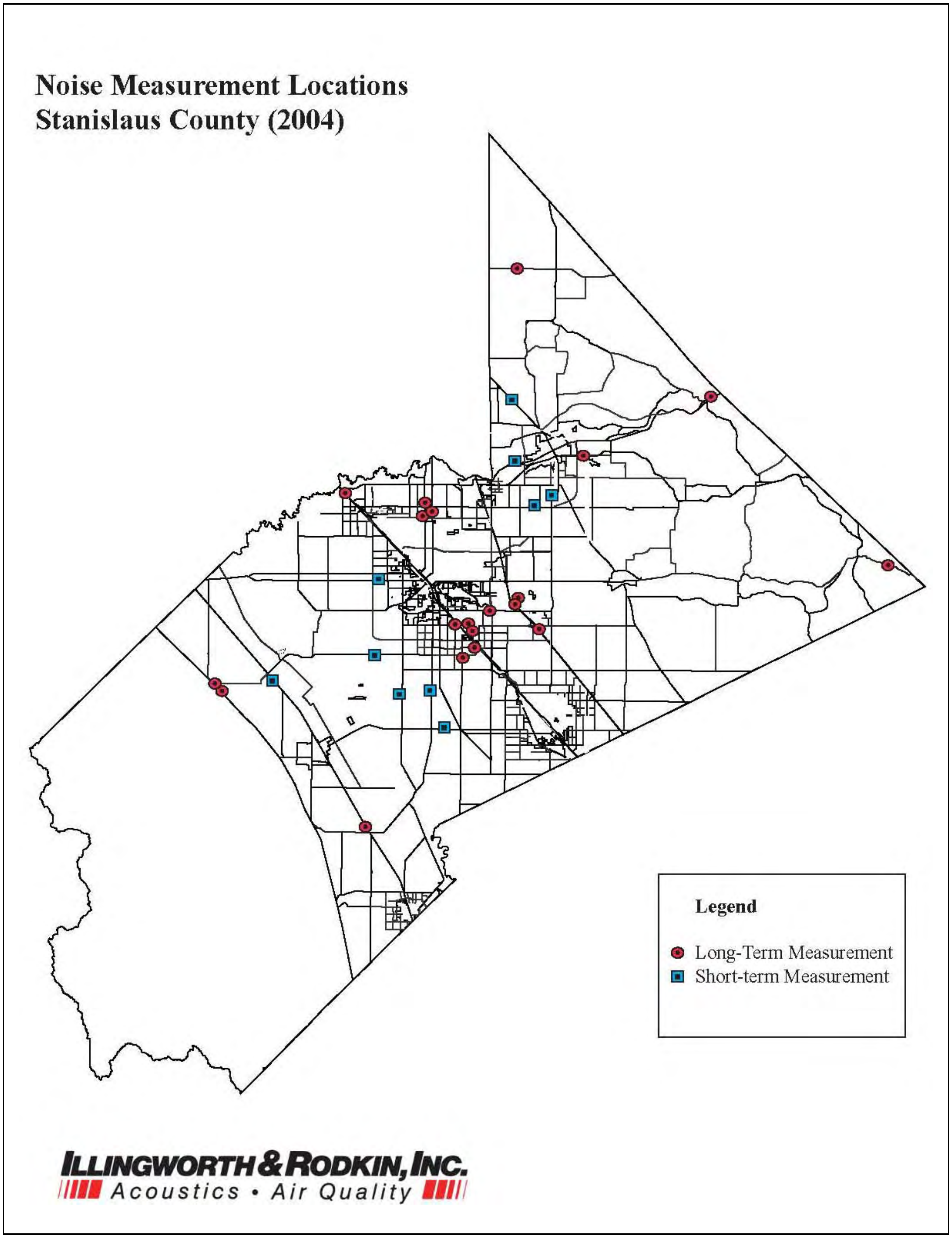

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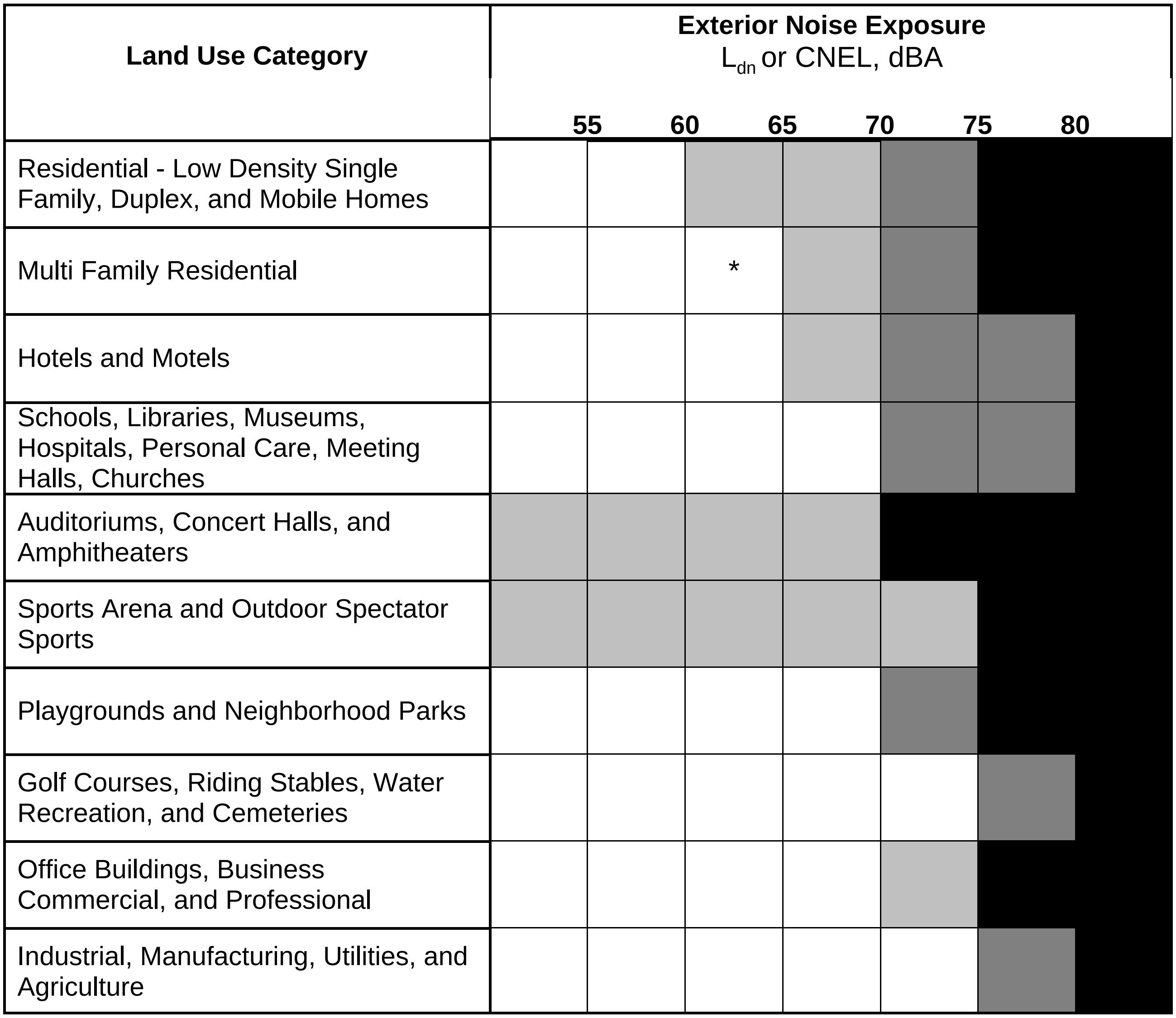
Table 2: Summary of Long-Term Noise Measurements

Site	Location	Date	Time	Daytime Noise Levels	**Nighttime Noise Levels**	L_{dn}
Long-Term Measurements				**dBA**	**dBA**	**dBA**
LT-1	Residential Land Use, 907 Kiernan Road ~ 60 ft from the centerline of Hwy 219 /Kiernan Road	7/20/04 to 7/21/04	11:00 am to 1:00 pm	65-68	56-65	**68**
LT-2	~50 feet from the centerline of Hwy 108, near intersection with Hwy 219	7/20/04 to 7/21/04	11:30 am to 12:30 pm	71-74	64-73	**76**
LT-3	~200 feet to center of SR 99 near lane, ~350 feet toUPRR Rail line	7/20/04 to 7/22/04	12:20 pm to 2:30 pm	72-75	69-75	**78**
LT-4	~30 feet from centerline of 132, near county line	7/20/04 to 7/21/04	12:00 pm to 4:00 pm	62-66	51-66	**68**
LT-5	~50 feet from centerline of 120, near County line	7/20/04 to 7/21/04	1:00 pm to 5:00 pm	70-73	62-72	**75**
LT-6	~45 feet from centerline of Hwy. 4	7/20/04 to 7/21/04	2:00 pm to 7:00 pm	64-67	54-67	**69**
LT-7	~30 feet from centerline of Central Ave, south of Ceres near Grayson Road	7/20/04 to 7/22/04	6:00 pm to 2:00 pm	67-70	59-69	**72**
LT-8	~65 feet from near lane of I-5	7/21/04 to 7/22/04	11:00 am to 12:00 pm	73-75	73-75	**80**
LT-9	~50 feet from centerline of SR 33, north of Crows Landing	7/21/04 to 7/22/04	11:30 am to 1:00 pm	66-70	57-69	**72**
LT-10a	~50 feet from the centerline of Santa Fe Ave., near Leedom	7/21/04 to 7/22/04	3:30 pm to 4:00 pm	68-75	62-76	**78**
LT-10b	~50 feet from the centerline of Santa Fe Avenue at Leedom	8/31/04 to 9/2/04	2:00 pm to 2:00 pm	69-75	60-74	**76**
LT-11	3831 Hatch Road, ~65 feet from centerline of Hatch Road	7/21/04 to 7/22/04	3:30 pm to 4:00 pm	68-71	62-71	**74**
LT-12	~20 feet west of SPTCo Railroad and ~105 feet west of SR 99, in Ceres	5/18/04 to 5/21/04	12:30 pm to 2:00 pm	77-81	71-79	**83**
LT-13	~30 feet from the edge of Service Road, at Service and Moffet in Ceres	5/18/04 to 5/21/04	1:00 pm to 2:00 pm	69-73	62-73	**75**
LT-14	2805 Evalee Lane ~270 feet east of SR 99, in Ceres	5/18/04 to 5/20/04	1:30 pm to 3:00 pm	66-69	60-69	**72**
LT-15	Little Orchard Mobile Home Park ~130 feet east of SR 99, in Ceres	5/18/04 to 5/20/04	2:30 pm to 3:00 pm	72-74	64-73	**78**
LT-16	~60 feet from near lane of I-5 in Westley	8/31/04 to 9/2/04	10:30 am to 10:30 am	72-74	71-75	**80**
LT-17	~150 feet from AT&SF Railroad in Hughson	8/31/04 to 9/2/04	1:00 pm to 2:00 pm	69-80	59-80	**81**
LT-18	~50 feet from the Sierra Railroad tracks east of Oakdale	8/31/04 to 9/2/04	3:00 pm to 3:00 pm	66-71	58-70	**72**
LT-19	~35 feet from the Tidewater Railroad, south of Del Rio	8/31/04 to 9/2/04	4:00 pm to 4:00 pm	63-70	43-63	**70**

Table 3: Summary of Short-Term Noise Measurements

Site	Location	Date	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
Short-Term Measurements				dBA	dBA	dBA	dBA	dBA
ST-1	~75 feet from the centerline of Maze Blvd/ Hwy. 132 at Garrison	7/20/04	12:55 pm to 1:00 pm	71	81	76	66	50
ST-2	~75 feet from the centerline of Grayson Road, east of Jennings Road	7/20/04	1:48 pm to 1:58 pm	61	75	63	45	37
ST-3	~80 feet from the centerline of Carpenter Road, at Monte Vista Avenue	7/20/04	2:22 pm to 2:32 pm	64	74	68	54	44
ST-4	~60 feet from the centerline of West Main Street, west of Blaker Road	7/20/04	3:00 pm to 3:10 pm	68	77	72	62	49
ST-5	~60 feet from the centerline of Crows Landing Road, at Zeering	7/20/04	3:33 pm to 3:43 pm	67	78	70	60	48
ST-6	~40 feet from the centerline of SR 33, south of Westley	7/21/04	10:50 am to 11:00 am	71	81	75	60	47
ST-7	~50 feet from the centerline of Albers, between Patterson and Claribel	7/21/04	5:50 pm to 6:00 pm	72	82	76	67	54
ST-8	~50 feet from the centerline of Claribel, between Albers and Hwy. 108	7/21/04	6:15 pm to 6:25 pm	69	78	74	62	50
ST-9	~60 feet from the centerline of Hwy. 108, at Orchard Ave.	7/21/04	6:40 pm to 6:50 pm	70	77	74	69	56
ST-10	~60 feet from the centerline of Valley Home Rd, at 12542 Valley Home Road	7/21/04	7:10 pm to 7:20 pm	65	76	71	52	42

Figure 3: Land Use Compatibility for Community Noise Environments



** Interior noise levels shall not exceed 45 Ldn in all new residential units (single and multi family). Development sites exposed to noise levels exceeding 60 Ldn shall be analyzed following protocols in Appendix Chapter 12, Section 1208, A, Sound Transmission Control, 1998 California Building Code.*

NORMAL ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

CONDITIONALLY ACCEPTABLE
Specified land use may be permitted only after detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

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GOALS, POLICIES AND IMPLEMENTATION MEASURES

GOAL ONE

Prevent the encroachment of incompatible land uses near known noise producing industries, railroads, airports and other sources to protect the economic base of the County.

POLICY ONE

It is the policy of Stanislaus County to utilize the noise exposure information contained within the General Plan to identify existing and potential noise conflicts through the Land Use Planning and Project Review processes.

IMPLEMENTATION MEASURE

1. Areas within Stanislaus County shall be designated as noise-impacted if exposed to existing or projected future noise levels exterior to buildings exceeding the standards in Figure 3 or the performance standards described by Table 4. Maps showing existing and projected future noise exposures exceeding 60 L_{dn} or CNEL for the major noise sources are depicted in Figure 1, Table 1, and are included in Appendix A and B of the Technical Reference Document (2004). ***Responsible Departments: Environmental Resources, Planning Department, Planning Commission, Board of Supervisors***

GOAL TWO

Protect the citizens of Stanislaus County from the harmful effects of exposure to excessive noise.

POLICY TWO

It is the policy of Stanislaus County to develop and implement effective measures to abate and avoid excessive noise exposure in the unincorporated areas of the County by requiring that effective noise mitigation measures be incorporated into the design of new noise generating and new noise sensitive land uses.

IMPLEMENTATION MEASURES

1. New development of noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to the following levels:

    a) For transportation noise sources such as traffic on public roadways, railroads, and airports, 60 L_{dn} (or CNEL) or less in outdoor activity areas of single family residences, 65 L_{dn} (or CNEL) or less in community outdoor space for multi-family residences, and 45 L_{dn} (or CNEL) or less within noise sensitive interior spaces. Where it is not possible to reduce exterior noise due to these sources to the prescribed level using a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 L_{dn} (or CNEL) will be allowed. Under no circumstances will interior noise levels be allowed to exceed 45 L_{dn} (or CNEL) with the windows and doors closed in residential uses.

b) For other noise sources such as local industries or other stationary noise sources, noise levels shall not exceed the performance standards contained within Table 4.

Responsible Departments: Environmental Resources, Planning Department, Building Inspections, Planning Commission, Board of Supervisors

2. New development of industrial, commercial or other noise generating land uses will not be permitted if resulting noise levels will exceed 60 L_{dn} (or CNEL) in noise-sensitive areas. Additionally, the development of new noise-generating land uses which are not preempted from local noise regulation will not be permitted if resulting noise levels will exceed the performance standards contained within Table 4 in areas containing residential or other noise sensitive land uses.
Responsible Departments: Environmental Resources, Planning Department, Planning Commission, Board of Supervisors

TABLE 4

MAXIMUM ALLOWABLE NOISE EXPOSURE - STATIONARY NOISE SOURCES[2]

	Daytime **7 a.m. to 10 p.m.**	**Nighttime** **10 p.m. to 7 a.m.**
Hourly L_{eq}, dBA	**55**	**45**
Maximum level, dBA	**75**	**65**

Each of the noise level standards specified in Table 4 shall be reduced by five (5) dBA for pure tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises. The standards in Table 4 should be applied at a residential or other noise-sensitive land use and not on the property of a noise-generating land use. Where measured ambient noise levels exceed the standards, the standards shall be increased to the ambient levels.

3. Prior to the approval of a proposed development of noise-sensitive land uses in a noise impacted area, or the development of industrial, commercial or other noise generating land use in an area containing noise-sensitive land uses, an acoustical analysis shall be required. Where required, an acoustical analysis shall:

[2] As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.

a) Be the responsibility of the applicant.

b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

c) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

d) Include estimated noise levels in terms of L_{dn} (or CNEL) and the standards of Table 4 (if applicable) for existing and projected future (10-20 years hence) conditions, with a comparison made to the adopted polices of the Noise Element.

e) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

f) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Responsible Departments: Planning Department, Environmental Resources, Planning Commission, Board of Supervisors

4. Projects which through the CEQA review process require an acoustical analysis shall include a monitoring program to specifically implement the recommended mitigation to noise impacts associated with the project.
Responsible Departments: Planning Department, Environmental Resources, Planning Commission, Board of Supervisors

5. Noise level criteria applied to land uses other than noise sensitive uses shall be consistent with the recommendations of Figure 3: Land Use Compatibility for Community Noise Environments.
Responsible Department: Planning Department, Environmental Resources, Planning Commission, Board of Supervisors

6. Stanislaus County shall enforce Sound Transmission Control Standards in the 1998 California Building Code, Appendix Chapter 12, Section 1208, and Chapter 35 of the Uniform Building Code concerning the construction of new multiple-occupancy dwellings such as hotels, apartments, and condominiums in areas where the existing or projected future noise environment exceeds 60 L_{dn} or CNEL.
Responsible Department: Building Inspection

7. Replacement of noise-sensitive land uses located in noise-impacted areas which are destroyed in a disaster shall not be considered in conflict with this element if replacement occurs within one year.
Responsible Departments: Building Inspections, Planning Department, Environmental Resources.

POLICY THREE

It is the objective of Stanislaus County to protect areas of the County where noise-sensitive land uses are located.

IMPLEMENTATION MEASURES

1. Require the evaluation of mitigation measures for projects that would cause the L_{dn} at noise-sensitive uses to increase by 3 dBA or more and exceed the "normally acceptable" level, cause the L_{dn} at noise-sensitive uses to increase 5 dBA or more and remain "normally acceptable," or cause new noise levels to exceed the noise ordinance limits (after adoption).
   Responsible Departments: Environmental Resources, Planning Department, Planning Commission, Board of Supervisors

2. In conjunction with or subsequent to a comprehensive update of the Noise Element, the County shall consider writing a community noise control ordinance based on the noise exposure information included in the research for the Noise Element. The "Model Community Noise Control Ordinance" prepared by the State Office of Noise Control should be considered for a guideline.
   Responsible Departments: Environmental Resources, Planning Department, Planning Commission, Board of Supervisors

3. New equipment and vehicles purchased by Stanislaus County shall comply with noise level performance standards of the industry and be kept in proper working order to reduce noise impacts.
   Responsible Department: County Executive Office

4. Stanislaus County should encourage the California Highway Patrol and local law enforcement officers to actively enforce existing sections of the California Vehicle Code relating to adequate vehicle mufflers[3], modified exhaust systems, and vehicle stereo systems[4].
   Responsible Department: Board of Supervisors

POLICY FOUR

It is the objective of Stanislaus County to ensure that the Noise Element is consistent with and does not conflict with other elements of the Stanislaus County General Plan.

IMPLEMENTATION MEASURES

1. The Noise Element shall be reviewed and updated as necessary to remain consistent with the Land Use and Circulation Elements of the General Plan.
   Responsible Departments: Planning Department, Department of Environmental Resources, Planning Commission, Board of Supervisors

2. The Land Use and Circulation Elements of the General Plan shall be continually reviewed to ensure consistency with the findings and policies of the Noise Element as they relate to the prevention of future noise conflicts.
   Responsible Department: Planning Department

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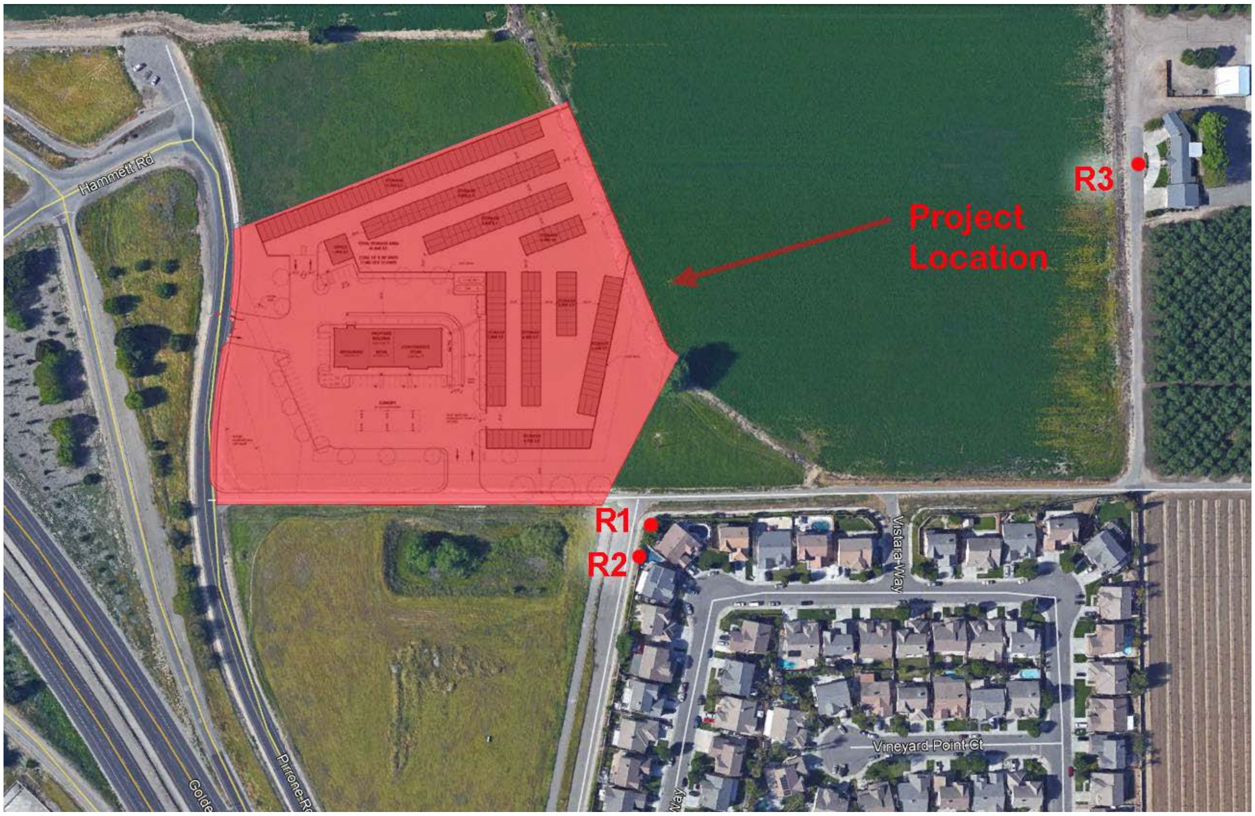
[3] Section 27150 of the California Motor Vehicle Code discusses the control of excessive exhaust noise.
[4] Section 27007 of the California Motor Vehicle Code prohibits amplified sound which can be heard 50 or more feet from a vehicle.

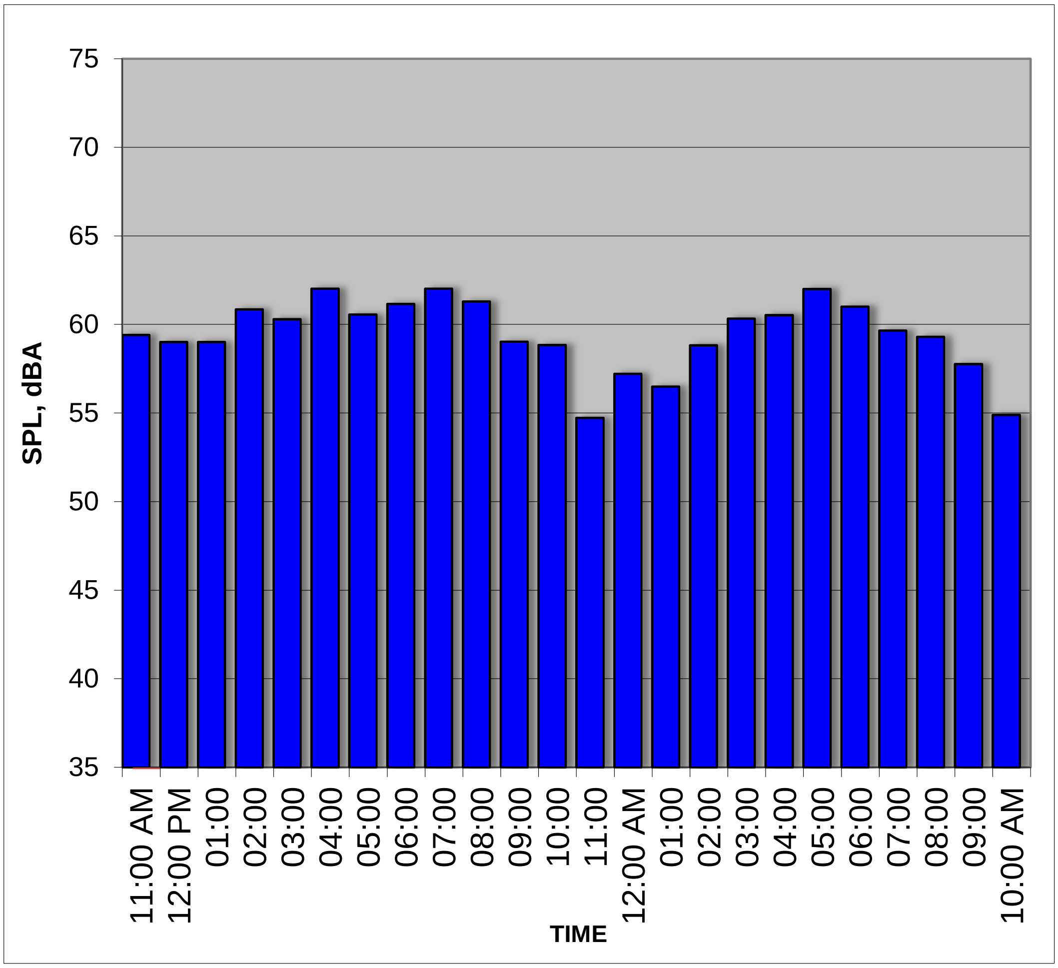
MODELING INPUT & OUTPUT

Figure A-1. Location of Sensitive Receptors (R1, R2, and R3)



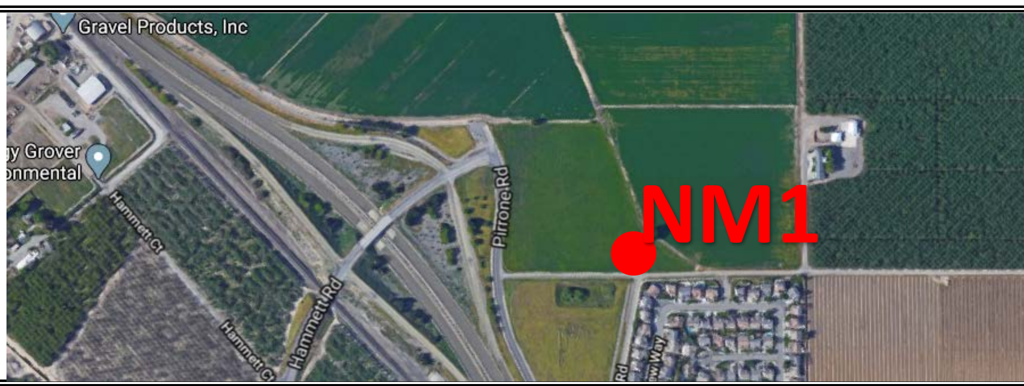
MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Cal Sierra Financial**		
Address:	**Hammett Rd and Pirrone Rd**	**Date:**	**3/2/20120 - 3/3/2020**
Location:			
Noise Sources:	Vehicular Traffic	**Position:**	**NM1**



TIME	*HNL, dB(A)*
11:00 - 12:00 PM	*59.4*
12:00 - 01:00 PM	*59.0*
01:00 - 02:00 PM	*59.0*
02:00 - 03:00 PM	*60.9*
03:00 - 04:00 PM	*60.3*
04:00 - 05:00 PM	*62.0*
05:00 - 06:00 PM	*60.6*
06:00 - 07:00 PM	*61.2*
07:00 - 08:00 PM	*62.0*
08:00 - 09:00 PM	*61.3*
09:00 - 10:00 PM	*59.0*
10:00 - 11:00 PM	*58.8*
11:00 - 12:00 AM	*54.7*
12:00 - 01:00 AM	*57.2*
01:00 - 02:00 AM	*56.5*
02:00 - 03:00 AM	*58.8*
03:00 - 04:00 AM	*60.3*
04:00 - 05:00 AM	*60.5*
05:00 - 06:00 AM	*62.0*
06:00 - 07:00 AM	*61.0*
07:00 - 08:00 AM	*59.7*
08:00 - 09:00 AM	*59.3*
09:00 - 10:00 AM	*57.8*
10:00 - 11:00 AM	*54.9*
CNEL:	***66.3***

Notes:



Source: Acoustics Group, Inc.

CadnaA Input Output
Project: Cal Sierra Financial

Receiver

Name	M.	ID	Level Lr Day (dBA)	Level Lr Night (dBA)	Limit. Value Day (dBA)	Limit. Value Night (dBA)	Land Use Type	Land Use Auto	Land Use Noise Type	Height (m)		Coordinates X (m)	Coordinates Y (m)	Coordinates Z (m)
R1			0	0	0	0		x	Total	1.5	r	551.94	243.58	1.5
R2			0	0	0	0		x	Total	1.5	r	542.94	223.09	1.5
R3			0	0	0	0		x	Total	1.5	r	793.77	416.24	1.5

Point Source

Name	M.	ID	Result. PWL Day (dBA)	Result. PWL Evening (dBA)	Result. PWL Night (dBA)	Lw / Li Type	Lw / Li Value	Lw / Li norm. dB(A)	Correction Day dB(A)	Correction Evening dB(A)	Correction Night dB(A)	Sound Reduction R	Sound Reduction Area (m²)	Attenuatio	Operating Time Day (min)	Operating Time Special (min)	Operating Time Night (min)	K0 (dB)	Freq. (Hz)	Direct.	Height (m)		Coordinates X (m)	Coordinates Y (m)	Coordinates Z (m)
3 Ton			81.2	81.2	81.2	Lw	T3		0	0	0							0		(none)	5.49	r	413.57	333	5.49
5 Ton			87.2	87.2	87.2	Lw	T5		0	0	0							0		(none)	5.49	r	429.01	333	5.49
7 Ton			90.8	90.8	90.8	Lw	T7		0	0	0							0		(none)	5.49	r	403.74	333	5.49
10 Ton			87.3	87.3	87.3	Lw	T10		0	0	0							0		(none)	5.49	r	440.83	333	5.49
Compressor			85.9	85.9	85.9	Lw	T1		0	0	0							0		(none)	1	r	390.88	284.23	1
Car Start			86.3	86.3	86.3	Lw	CS		0	0	0							0		(none)	1	r	516.47	296.87	1
Car Door Slam			86	86	86	Lw	CD		0	0	0							0		(none)	1	r	519.6	296.87	1
Menu Board			85.8	85.8	85.8	Lw	P1		0	0	0							0		(none)	1	r	452.92	333.51	1

Building

Name	M.	ID	Absorption left	Absorption right	Z-Ext. (m)	Cantilever horz. (m)	Cantilever vert. (m)	Height Begin (m)		Height End (m)
Building								6.1	r	

Sound Levels

Name	ID	Type	Oktave Spectrum (dB) Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	Source
Car Start	CS	Lw		93.8	88.9	82.7	80.6	80.2	79.2	80.9	78.3	74	86.3	95.9	Imax
Car Door Slam	CD	Lw		99.3	90.4	83.9	83.2	81.8	81.4	78.8	75.5	69.6	86	100.2	Imax
10 Ton	T10	Lw		0	89	87	91	85	80	77	73	66	87.3	94.8	Trane
5 Ton	T5	Lw		0	80	86	84	85	83	79	73	67	87.2	91.4	Trane
3 Ton	T3	Lw		0	79	85	79	79	77	71	67	58	81.2	87.9	Trane
7 Ton	T7	Lw		0	92	96	92	89	85	80	76	69	90.8	99.2	Trane
Compressor @ 1ft	T1	Lw		96.7	99.5	84.2	87	79.2	76.5	76.4	79.6	76.3	85.9	101.7	Field Measurement

Result Table

Source Name	M.	ID	R1	R2	R3
Car Start			33.4	33	19.1
Car Door Slam			32.7	32.3	19
3 Ton			19.4	19	12.1
5 Ton			25.5	25.1	18.2
7 Ton			28.6	28.4	21.2
10 Ton			25.7	25.1	18
Compressor			26.4	26.2	17.8
Traffic Counts			40.3	39.9	30.9

Source Name	M.	ID	Partial Level Day R1	R2	R3
3 Ton			22.3	19.2	11.8
5 Ton			29.2	25.6	18.1
7 Ton			30.9	28.5	21.1
10 Ton			28.5	25.9	18
Compressor			26	26.9	11.5
Car Start			33.3	21.8	11.7
Car Door Slam			32.8	24.7	14.6
Menu Board			29	21.8	13.8
Onsite Traffic			41.5	38.0	29.5

FHWA TRAFFIC NOISE CALCULATOR

Pirrone Road Gas Station & Convenience Store - EXISTING TRAFFIC NOISE

ROADWAY	Time Period	Peak Hour Volume	Vehicle Distribution			Vehicle Speed mph	Receiver Distance CL, ft	Grade %		CNEL Correction	PREDICTED TRAFFIC NOISE LEVEL, dBA		DISTANCE TO CNEL CONTOURS				
			%Auto	%MT	%HT			NL	FL		Leq @ Rec.	CNEL @ Rec.	80	75	70	65	60
Pirrone Rd	AM	846	98	1	1	45	50	0	0	2.4	66.8	69.2	5	15	43	106	226
Hammett Road	AM	861	98	1	1	45	50	0	0	2.4	66.6	69.0	5	14	40	101	216
NB Off Ramp	AM	61	87	7	7	45	50	0	0	2.4	57.6	60.0	1	2	6	21	50
NB On Ramp	AM	544	97	2	2	45	50	0	0	2.4	64.9	67.3	3	10	28	75	164
SB Off Ramp	AM	420	98	1	1	45	50	0	0	2.4	63.6	66.0	3	8	21	59	132
SB On Ramp	AM	83	89	5	5	45	50	0	0	2.4	58.6	61.0	1	3	8	24	58
Pirrone Rd	PM	569	98	1	1	45	50	0	0	2.4	64.7	67.1	3	10	27	73	160
Hammett Road	PM	581	98	1	1	45	50	0	0	2.4	64.8	67.2	3	10	28	74	163
NB Off Ramp	PM	83	98	1	1	45	50	0	0	2.4	56.4	58.8	1	2	5	17	41
NB On Ramp	PM	333	98	1	1	45	50	0	0	2.4	62.4	64.8	2	6	17	48	110
SB Off Ramp	PM	444	97	2	2	45	50	0	0	2.4	64.1	66.5	3	8	24	65	144
SB On Ramp	PM	105	96	2	2	45	50	0	0	2.4	57.9	60.3	1	2	7	22	53

FHWA TRAFFIC NOISE CALCULATOR

Pirrone Road Gas Station & Convenience Store - EXISTING + PROJECT TRAFFIC NOISE

ROADWAY	Time Period	Peak Hour Volume	Vehicle Distribution			Vehicle Speed mph	Receiver Distance CL, ft	Grade %		CNEL Correction	PREDICTED TRAFFIC NOISE LEVEL, dBA		DISTANCE TO CNEL CONTOURS				
			%Auto	%MT	%HT			NL	FL		Leq @ Rec.	CNEL @ Rec.	80	75	70	65	60
Pirrone Rd	AM	1040	96	2	2	45	50	0	0	2.4	68.6	71.0	8	22	61	144	300
Hammett Road	AM	1033	98	1	1	45	50	0	0	2.4	67.4	69.8	6	17	48	117	247
NB Off Ramp	AM	115	91	4	4	45	50	0	0	2.4	59.5	61.9	1	3	9	29	68
NB On Ramp	AM	597	97	2	2	45	50	0	0	2.4	65.2	67.6	4	11	31	80	174
SB Off Ramp	AM	447	98	1	1	45	50	0	0	2.4	63.8	66.2	3	8	23	62	138
SB On Ramp	AM	110	91	4	4	45	50	0	0	2.4	59.3	61.7	1	3	9	28	66
Pirrone Rd	PM	767	96	2	2	45	50	0	0	2.4	66.6	69.0	5	14	41	102	218
Hammett Road	PM	756	98	1	1	45	50	0	0	2.4	66.0	68.4	4	12	35	91	196
NB Off Ramp	PM	138	98	1	1	45	50	0	0	2.4	58.6	61.0	1	3	8	25	59
NB On Ramp	PM	387	98	1	1	45	50	0	0	2.4	63.1	65.5	2	7	19	54	122
SB Off Ramp	PM	471	97	2	2	45	50	0	0	2.4	64.3	66.7	3	9	25	68	150
SB On Ramp	PM	131	97	2	2	45	50	0	0	2.4	58.8	61.2	1	3	8	25	61

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing AM

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing AM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	829	72	8	72	8	72	0	0	0	0
	point6	6	829	72	8	72	8	72	0	0	0	0
	point7	7	829	72	8	72	8	72	0	0	0	0
	point8	8	829	72	8	72	8	72	0	0	0	0
	point9	9	829	72	8	72	8	72	0	0	0	0
	point10	10	829	72	8	72	8	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	843	72	9	72	9	72	0	0	0	0
	point13	13	843	72	9	72	9	72	0	0	0	0
	point14	14	843	72	9	72	9	72	0	0	0	0
	point15	15	843	72	9	72	9	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	53	72	4	72	4	72	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	527	72	8	72	8	72	0	0	0	0
	point30	30	527	72	8	72	8	72	0	0	0	0
	point31	31	527	72	8	72	8	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	410	72	5	72	5	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	74	72	5	72	5	72	0	0	0	0
	point36	36	74	72	5	72	5	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing AM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing AM
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	43.1	66	43.1	10	----	43.1	0	8	-8
R2	3	1	0	43.5	66	43.5	10	----	43.5	0	8	-8
R3	4	1	0	35.6	66	35.6	10	----	35.6	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

Cal Sierra Financial 12-Feb-21
AGI TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing PM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing PM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	558	72	6	72	6	72	0	0	0	0
	point6	6	558	72	6	72	6	72	0	0	0	0
	point7	7	558	72	6	72	6	72	0	0	0	0
	point8	8	558	72	6	72	6	72	0	0	0	0
	point9	9	558	72	6	72	6	72	0	0	0	0
	point10	10	558	72	6	72	6	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	569	72	6	72	6	72	0	0	0	0
	point13	13	569	72	6	72	6	72	0	0	0	0
	point14	14	569	72	6	72	6	72	0	0	0	0
	point15	15	569	72	6	72	6	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	81	72	1	72	1	72	0	0	0	0
	point26	26	81	72	1	72	1	72	0	0	0	0
	point27	27	81	72	1	72	1	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	326	72	3	72	3	72	0	0	0	0
	point30	30	326	72	3	72	3	72	0	0	0	0
	point31	31	326	72	3	72	3	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	429	72	8	72	8	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	101	72	2	72	2	72	0	0	0	0
	point36	36	101	72	2	72	2	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing PM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:	Pirrone Road Gas Station & C-Store
RUN:	Existing PM
BARRIER DESIGN:	INPUT HEIGHTS
ATMOSPHERICS:	20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	41.6	66	41.6	10	----	41.6	0	8	-8
R2	3	1	0	42	66	42	10	----	42	0	8	-8
R3	4	1	0	34.1	66	34.1	10	----	34.1	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project AM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project AM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	998	72	21	72	21	72	0	0	0	0
	point6	6	998	72	21	72	21	72	0	0	0	0
	point7	7	998	72	21	72	21	72	0	0	0	0
	point8	8	998	72	21	72	21	72	0	0	0	0
	point9	9	998	72	21	72	21	72	0	0	0	0
	point10	10	998	72	21	72	21	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	1010	72	11	72	11	72	0	0	0	0
	point13	13	1010	72	11	72	11	72	0	0	0	0
	point14	14	1010	72	11	72	11	72	0	0	0	0
	point15	15	1010	72	11	72	11	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	105	72	5	72	5	72	0	0	0	0
	point26	26	105	72	5	72	5	72	0	0	0	0
	point27	27	105	72	5	72	5	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	579	72	9	72	9	72	0	0	0	0
	point30	30	579	72	9	72	9	72	0	0	0	0
	point31	31	579	72	9	72	9	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	436	72	5	72	5	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	100	72	5	72	5	72	0	0	0	0
	point36	36	100	72	5	72	5	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project AM

Receiver Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria			NR Goal	Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l		
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:	Pirrone Road Gas Station & C-Store
RUN:	Existing + Project AM
BARRIER DESIGN:	INPUT HEIGHTS
ATMOSPHERICS:	20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	44.8	66	44.8	10	----	44.8	0	8	-8
R2	3	1	0	45.3	66	45.3	10	----	45.3	0	8	-8
R3	4	1	0	37	66	37	10	----	37	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project PM

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project PM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	737	72	15	72	15	72	0	0	0	0
	point6	6	737	72	15	72	15	72	0	0	0	0
	point7	7	737	72	15	72	15	72	0	0	0	0
	point8	8	737	72	15	72	15	72	0	0	0	0
	point9	9	737	72	15	72	15	72	0	0	0	0
	point10	10	737	72	15	72	15	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	741	72	8	72	8	72	0	0	0	0
	point13	13	741	72	8	72	8	72	0	0	0	0
	point14	14	741	72	8	72	8	72	0	0	0	0
	point15	15	741	72	8	72	8	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	136	72	1	72	1	72	0	0	0	0
	point26	26	136	72	1	72	1	72	0	0	0	0
	point27	27	136	72	1	72	1	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	380	72	4	72	4	72	0	0	0	0
	point30	30	380	72	4	72	4	72	0	0	0	0
	point31	31	380	72	4	72	4	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	455	72	8	72	8	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	127	72	2	72	2	72	0	0	0	0
	point36	36	127	72	2	72	2	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project PM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Existing + Project PM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	43.5	66	43.5	10	----	43.5	0	8	-8
R2	3	1	0	44	66	44	10	----	44	0	8	-8
R3	4	1	0	35.7	66	35.7	10	----	35.7	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative AM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative AM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	842	72	9	72	9	72	0	0	0	0
	point6	6	842	72	9	72	9	72	0	0	0	0
	point7	7	842	72	9	72	9	72	0	0	0	0
	point8	8	842	72	9	72	9	72	0	0	0	0
	point9	9	842	72	9	72	9	72	0	0	0	0
	point10	10	842	72	9	72	9	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	856	72	9	72	9	72	0	0	0	0
	point13	13	856	72	9	72	9	72	0	0	0	0
	point14	14	856	72	9	72	9	72	0	0	0	0
	point15	15	856	72	9	72	9	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	53	72	4	72	4	72	0	0	0	0
	point26	26	53	72	4	72	4	72	0	0	0	0
	point27	27	53	72	4	72	4	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	531	72	8	72	8	72	0	0	0	0
	point30	30	531	72	8	72	8	72	0	0	0	0
	point31	31	531	72	8	72	8	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	419	72	5	72	5	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	74	72	5	72	5	72	0	0	0	0
	point36	36	74	72	5	72	5	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative AM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative AM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	43.4	66	43.4	10	----	43.4	0	8	-8
R2	3	1	0	43.8	66	43.8	10	----	43.8	0	8	-8
R3	4	1	0	35.8	66	35.8	10	----	35.8	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative PM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative PM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	571	72	6	72	6	72	0	0	0	0
	point6	6	571	72	6	72	6	72	0	0	0	0
	point7	7	571	72	6	72	6	72	0	0	0	0
	point8	8	571	72	6	72	6	72	0	0	0	0
	point9	9	571	72	6	72	6	72	0	0	0	0
	point10	10	571	72	6	72	6	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	583	72	6	72	6	72	0	0	0	0
	point13	13	583	72	6	72	6	72	0	0	0	0
	point14	14	583	72	6	72	6	72	0	0	0	0
	point15	15	583	72	6	72	6	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	81	72	1	72	1	72	0	0	0	0
	point26	26	81	72	1	72	1	72	0	0	0	0
	point27	27	81	72	1	72	1	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	334	72	3	72	3	72	0	0	0	0
	point30	30	334	72	3	72	3	72	0	0	0	0
	point31	31	334	72	3	72	3	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	101	72	2	72	2	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	74	72	5	72	5	72	0	0	0	0
	point36	36	74	72	5	72	5	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative PM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative PM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	41.6	66	41.6	10	----	41.6	0	8	-8
R2	3	1	0	42	66	42	10	----	42	0	8	-8
R3	4	1	0	34	66	34	10	----	34	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

Cal Sierra Financial 12-Feb-21
AGI TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project AM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project AM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	1011	72	21	72	21	72	0	0	0	0
	point6	6	1011	72	21	72	21	72	0	0	0	0
	point7	7	1011	72	21	72	21	72	0	0	0	0
	point8	8	1011	72	21	72	21	72	0	0	0	0
	point9	9	1011	72	21	72	21	72	0	0	0	0
	point10	10	1011	72	21	72	21	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	1023	72	11	72	11	72	0	0	0	0
	point13	13	1023	72	11	72	11	72	0	0	0	0
	point14	14	1023	72	11	72	11	72	0	0	0	0
	point15	15	1023	72	11	72	11	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	105	72	5	72	5	72	0	0	0	0
	point26	26	105	72	5	72	5	72	0	0	0	0
	point27	27	105	72	5	72	5	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	583	72	9	72	9	72	0	0	0	0
	point30	30	583	72	9	72	9	72	0	0	0	0
	point31	31	583	72	9	72	9	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	445	72	6	72	6	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	100	72	5	72	5	72	0	0	0	0
	point36	36	100	72	5	72	5	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project AM

Receiver Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project AM
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	44.9	66	44.9	10	----	44.9	0	8	-8
R2	3	1	0	45.3	66	45.3	10	----	45.3	0	8	-8
R3	4	1	0	37	66	37	10	----	37	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

Cal Sierra Financial 12-Feb-21
AGI TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project PM

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
Pirrone Road	3.7	point5	5	404.2	54.3	20.7				Average	
		point6	6	372.4	110.5	20.7				Average	
		point7	7	344.6	174.8	20.7				Average	
		point8	8	326.4	257.4	20.7				Average	
		point9	9	333.8	338	20.7				Average	
		point10	10	336.5	411.1	20.7				Average	
		point11	11	327	429.4	20.7					
Hammett Road	3.7	point12	12	323.7	435.5	20.7				Average	
		point13	13	258	405.7	21.3				Average	
		point14	14	169.3	348.8	26.8				Average	
		point15	15	122.6	299.4	30.2				Average	
		point16	16	99.8	268.5	29.3					
SR-99 NB Off Ramp	3.7	point25	25	349.1	102.6	21				Average	
		point26	26	308.9	198.4	21				Average	
		point27	27	285.9	280.9	21				Average	
		point28	28	258	396	21.3					
SR-99 NB On Ramp	3.7	point29	29	247.3	415.8	21.3				Average	
		point30	30	200.2	447.4	21.9				Average	
		point31	31	154.7	459.2	21.3				Average	
		point32	32	64.8	466.6	21					
SR-99 SB Off Ramp	3.7	point33	33	26.2	357	28.7				Average	
		point34	34	92.1	270.8	30.5					
SR-99 SB On Ramp	3.7	point35	35	100.6	260.1	30.2				Average	
		point36	36	189.5	185.2	25.6				Average	
		point37	37	303	72.3	21.3					

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project PM

Roadway Name	Points Name	No.	Segment

			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
Pirrone Road	point5	5	751	72	15	72	15	72	0	0	0	0
	point6	6	751	72	15	72	15	72	0	0	0	0
	point7	7	751	72	15	72	15	72	0	0	0	0
	point8	8	751	72	15	72	15	72	0	0	0	0
	point9	9	751	72	15	72	15	72	0	0	0	0
	point10	10	751	72	15	72	15	72	0	0	0	0
	point11	11										
Hammett Road	point12	12	755	72	8	72	8	72	0	0	0	0
	point13	13	755	72	8	72	8	72	0	0	0	0
	point14	14	755	72	8	72	8	72	0	0	0	0
	point15	15	755	72	8	72	8	72	0	0	0	0
	point16	16										
SR-99 NB Off Ramp	point25	25	136	72	1	72	1	72	0	0	0	0
	point26	26	136	72	1	72	1	72	0	0	0	0
	point27	27	136	72	1	72	1	72	0	0	0	0
	point28	28										
SR-99 NB On Ramp	point29	29	388	72	4	72	4	72	0	0	0	0
	point30	30	388	72	4	72	4	72	0	0	0	0
	point31	31	388	72	4	72	4	72	0	0	0	0
	point32	32										
SR-99 SB Off Ramp	point33	33	461	72	8	72	8	72	0	0	0	0
	point34	34										
SR-99 SB On Ramp	point35	35	127	72	2	72	2	72	0	0	0	0
	point36	36	127	72	2	72	2	72	0	0	0	0
	point37	37										

INPUT: RECEIVERS
PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project PM

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1	1	1	551.9	243.6	20.73	1.5	0	66	10	8	Y
R2	3	1	542.9	223.1	20.73	1.5	0	66	10	8	Y
R3	4	1	793.8	416.2	20.73	1.5	0	66	10	8	Y

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Pirrone Road Gas Station & C-Store
RUN: Cumulative + Project PM
BARRIER DESIGN: INPUT HEIGHTS

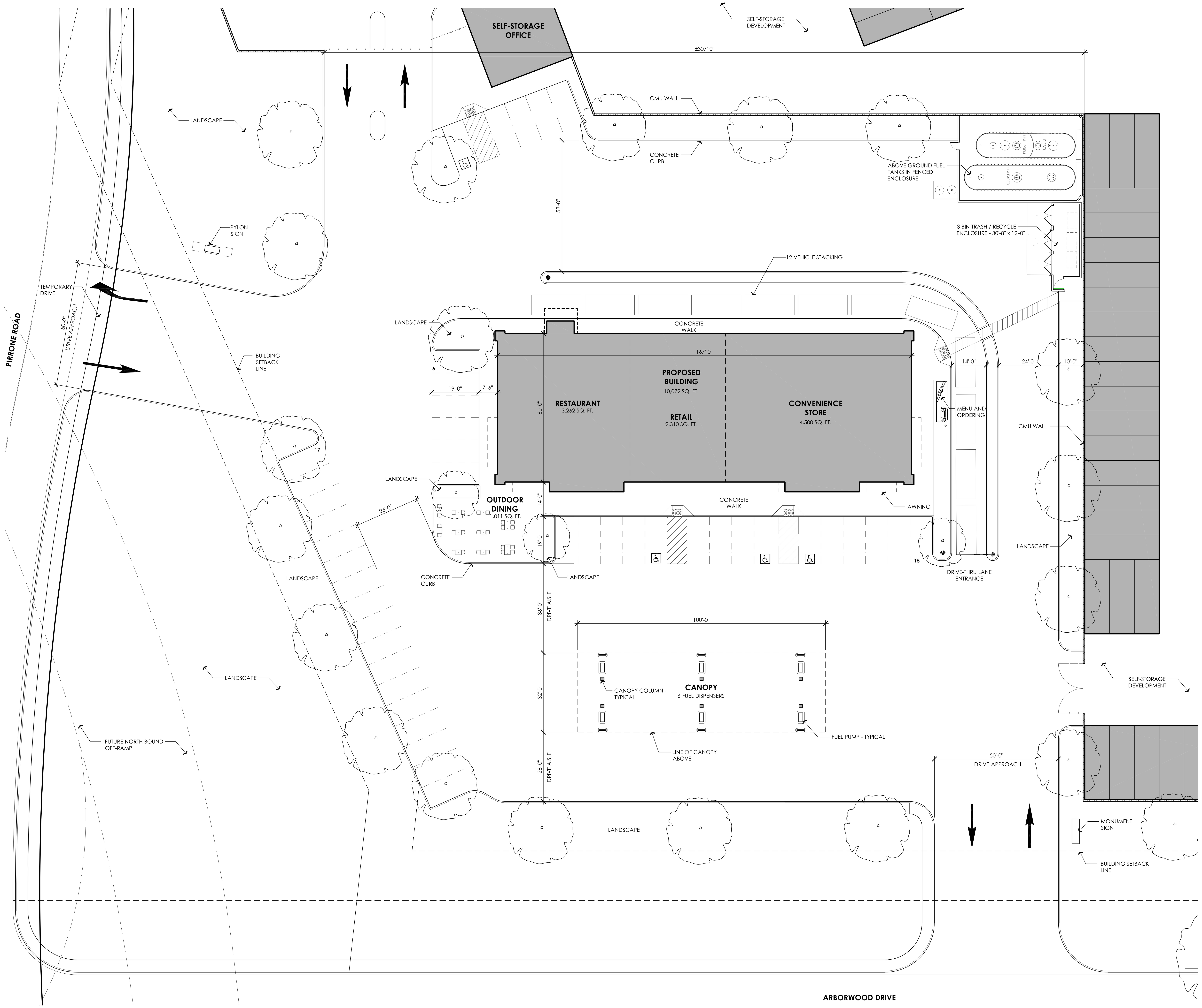
ATMOSPHERICS: 20 deg C, 50% RH

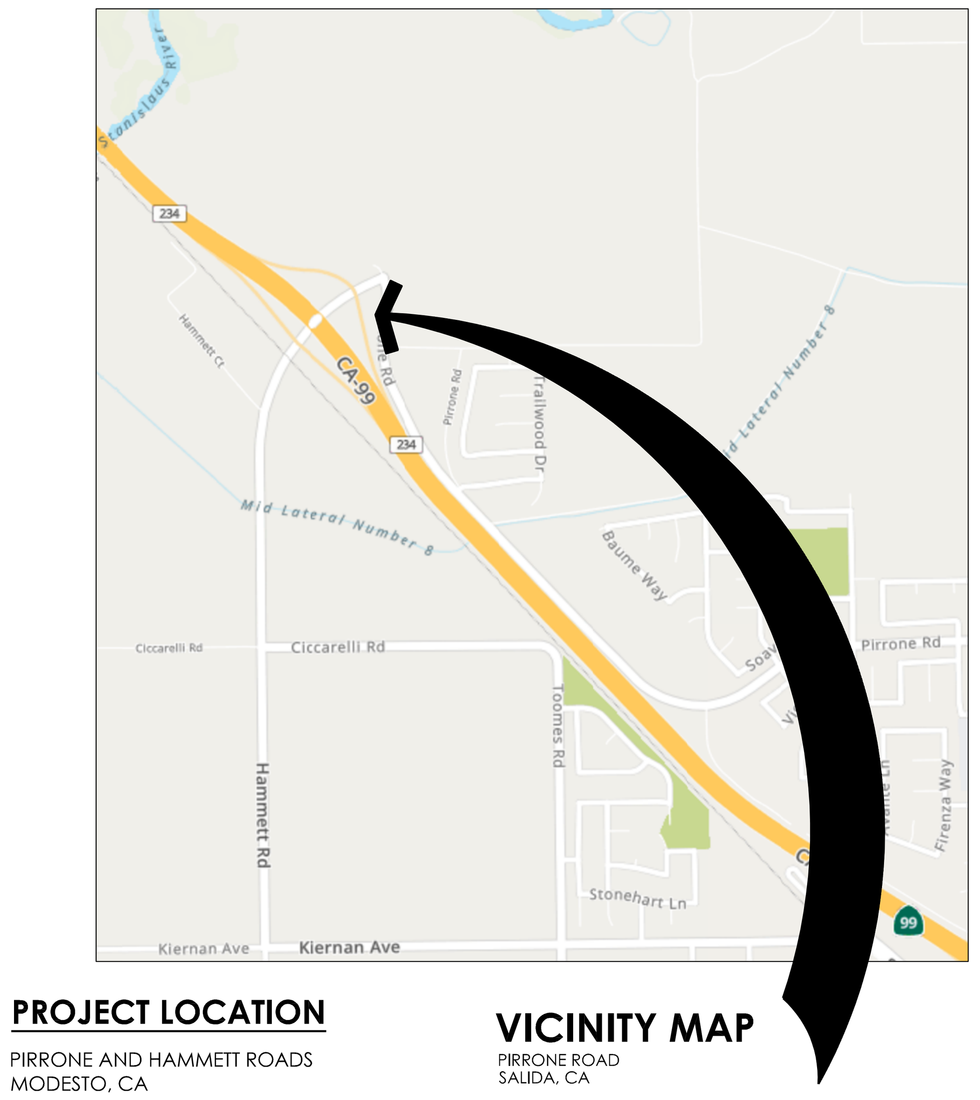
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0	43.4	66	43.6	10	----	43.6	0	8	-8
R2	3	1	0	43.9	66	44	10	----	44	0	8	-8
R3	4	1	0	35.7	66	35.8	10	----	35.8	0	8	-8

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0

PROJECT DRAWINGS





VICINITY MAP

PIRRONE ROAD
SALIDA, CA

PROJECT LOCATION

PIRRONE AND HAMMETT ROADS
MODESTO, CA

PROJECT TEAM

PROJECT CONTACT:
BALDEV GREWAL
(209) 658-7987
CONTACT: BALDEV GREWAL

ARCHITECT:
API
4335-B NORTH STAR WAY
MODESTO, CA 95356
(209) 577-4661
CONTACT: RODNEY ALONZO
rod@apiarc.com

PROJECT DESCRIPTION

RETAIL DEVELOPMENT:	NEW 10,072 SQ. FT. CONVENIENCE STORE / RESTAURANT BUILDING WITH SITE DEVELOPMENT
STORAGE DEVELOPMENT:	9 SELF-STORAGE UNIT BUILDINGS, 61,460 SQ. FT. TOTAL, AND 1,400 SQ. FT. OFFICE BUILDING, AND SITE DEVELOPMENT

SITE DATA

JURISDICTION:	COUNTY OF STANISLAUS
ADDRESS:	PIRRONE AND HAMMETT ROADS
ASSESSORS PARCEL NUMBER:	003-014-007
PROPERTY AREA:	418,176 SQ. FT. / 9.60 AC
DEVELOPMENT AREA:	RETAIL - 144,154 SQ. FT. / 3.3 AC STORAGE - 182,531 SQ. FT. / 4.19 AC
BUILDING COVERAGE:	RETAIL - 10,072 SQ. FT. (.069% OF RETAIL DEVELOPMENT AREA) STORAGE - 62,820 SQ. FT. (.34% OF STORAGE DEVELOPMENT AREA)
CURRENT ZONE:	SALIDA COMMUNITY PLAN C-2
GENERAL PLAN:	SALIDA COMMUNITY PLAN C-2

BUILDING DATA

RETAIL DEVELOPMENT AREA:	
BUILDING AREA:	10,072 SQ. FT.
BUILDING USE:	CONVENIENCE STORE / RESTAURANT / RETAIL
STORIES:	1
SELF-STORAGE DEVELOPMENT:	62,820 SQ. FT.
BUILDING USE:	RENTED STORAGE UNITS
STORIES:	1

PARKING DATA

RETAIL DEVELOPMENT

PARKING REQUIRED	
CONVENIENCE STORE - 1 STALL/300 SQ. FT.:	15 STALLS
RETAIL - 1 STALL/300 SQ. FT.:	8 STALLS
RESTAURANT - 1 STALL/4 SEATS:	15 STALLS
TOTAL PARKING REQUIRED:	38 STALLS
PARKING PROVIDED	
STANDARD:	35 STALLS
ACCESSIBLE:	3 STALL
TOTAL PARKING PROVIDED:	38 STALLS

STORAGE DEVELOPMENT

PARKING PROVIDED	
OFFICE - 1 STALL/300 SQ. FT.:	5 STALLS
TOTAL PARKING REQUIRED:	5 STALLS
PARKING PROVIDED	
STANDARD:	4 STALLS
ACCESSIBLE:	1 STALL
TOTAL PARKING PROVIDED:	5 STALLS

PROPOSED NEW DEVELOPMENT:

PIRRONE RETAIL

PIRRONE ROAD AND HAMMETT ROAD SALIDA, CA.

PLANNING
ARCHITECTURE

api

ARCHITECTURE PLUS INC.
4335-B NORTH STAR WAY
MODESTO, CA 95356

ph. 209.577.4661
fx. 209.577.0213

www.apiarc.com

SITE PLAN - PROJECT AREA

02-05-21

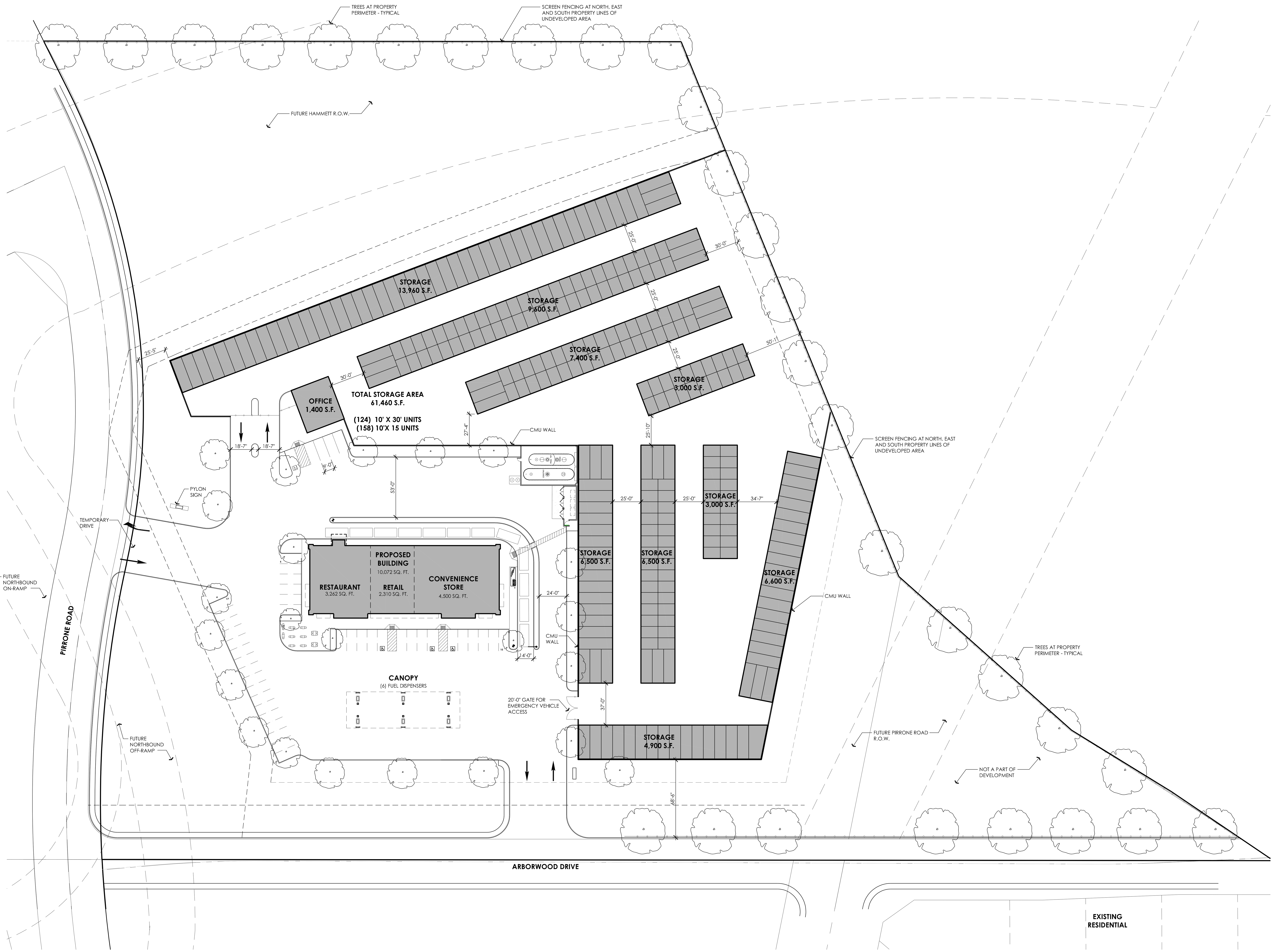
SCALE: 1" = 20'-0"

NORTH

SHEET:

A1

OF 2



SITE PLAN - OVERALL

SCALE: 1" = 40'-0"

DATE: 02-05-21

NORTH

PROPOSED NEW DEVELOPMENT:

PIRRONE RETAIL

PIRRONE ROAD AND HAMMETT ROAD SALIDA, CA.

PLANNING
ARCHITECTURE
api

ARCHITECTURE PLUS INC.
4335-B NORTH STAR WAY
MODESTO, CA 95356

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SHEET:

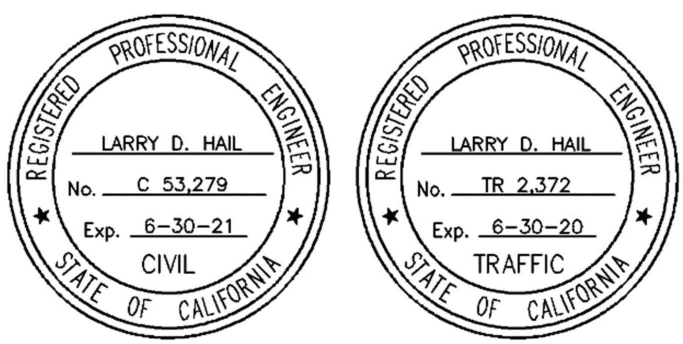
A2

OF 2

SALIDA GAS STATION & C-STORE
- Stanislaus County, California -

"TRAFFIC IMPACT ANALYSIS"

Prepared for:
CAL SIERRA FINANCIAL, INC.
2807 G Street, Ste. B
Merced, CA 95340



Larry D. Hail, CE, TE
PINNACLE TRAFFIC ENGINEERING
831 C Street
Hollister, CA 95023
(831) 638-9260 • PinnacleTE.com

March 9, 2020

EXECUTIVE SUMMARY

The Traffic Impact Analysis (TIA) presents an evaluation of the potential impacts associated with the proposed Salida Gas Station & C-Store project in Stanislaus County. The project site (APN: 003-014-007) is located east of the State Route (SR) 99 / Hammett Road interchange and the existing Pirrone Road in the unincorporated area north of the Salida community. The project includes the development of a new gas station with 10 gas pumps (20 fueling positions); a convenience market (4,500 SF); a small retail space (1,500 SF) and a sit-down restaurant (4,000 SF). Project access will be provided via a full access driveway on Arborwood Drive (east of existing Pirrone Road) and a secondary right-turn-only driveway on the existing Pirrone Road (between Hammett Road and Arborwood Drive). On-site parking will be provided for +/-42 vehicles (marked spaces) plus the 20 available spaces adjacent the gas pump islands. Parking will also be available along the northerly and easterly perimeters adjacent to the grape vine buffers.

The project will generate a total of approximately 4,612 daily trips, with 291 trips during the AM peak hour and 325 trips during the PM peak hour. However, a portion of the project trips will be internal "captured" trips (5%) which will not exit and re-enter the site. A significant portion of the trips will be "pass-by" and/or "diverted-link" trips coming from traffic already on the adjacent street system (e.g. 80-85% of gas station trips). The total trip generation estimates were adjusted to reflect the "pass-by" trips (Caltrans limits pass-by trip reduction to 15%). Based on the project location (unincorporated County), it's anticipated that very few of the project trips will be new "single purpose" trips attracted from other local communities (e.g. Ceres, Modesto, Ripon or Manteca). A majority (if not all) of the project trips to and from SR 99 will already be on the freeway. Though pass-by trips will come from SR 99 and Pirrone Road, the SR 99 ramp intersections will experience 100% of the project external demands (the project trips still need to exit and re-enter the freeway). The actual number of pass-by trips is anticipated to the much higher than the 15%. Therefore, the number of single purpose primary trips represents a worse-case scenario.

The project trips were assigned to the study street system was based on a review of the traffic count data, the project location and the locations of other local land uses in the Salida area. It's noted the County has conditioned the project site and the parcel south of the project site to take primary access off of Arborwood Drive. Eventually, the existing Pirrone Road on the west side of these parcels will be vacated and the New Pirrone Road will be improved and extended along the east side of these parcels to intersect a short extension of Hammett Road (east of SR 99). The project trips were also assigned to the study network assuming the future improvement of the New Pirrone Road alignment.

<u>Existing Conditions</u>

The Project TIA scope was defined in consultation with County and Caltrans staff. The evaluation of potential project impacts focuses on an evaluation of peak hour operations at the SR 99 / Hammett Road interchange ramp and Pirrrone Road / Arborwood Drive intersections. New traffic count data was collected to document existing conditions during the morning and afternoon commuter periods. The evaluation of existing conditions indicates average vehicle delays are currently within acceptable limits as defined by the County (LOS C or better), except at the SR 99 Northbound Ramps intersection during the AM peak hour (LOS D). Caltrans endeavors to maintain a target LOS at the transition between LOS C and D. Therefore, average delays in the LOS D range may be considered acceptable during short peak demand periods (e.g. 15-30 minutes within the peak hour).

The existing conditions analysis also identified significant queuing during the AM peak hour on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps. Observations of actual traffic operations did notice the eastbound queuing issue during the AM peak hour. Peak hour volumes at the SR 99 Northbound Ramps intersection are below the minimum 70% "peak hour" volume traffic signal warrant criteria in the 2014 California MUTCD. Peak hour volumes at the SR 99 Southbound Ramps intersection exceed the minimum 70% "peak hour" volume signal warrant criteria but are below the 100% signal warrant criteria. Therefore, the installation of traffic signal control is not recommended under existing conditions since average vehicle delays are in the LOS B-C range with the existing all-way stop control.

Existing Plus Project Conditions

A review of the existing plus project volumes at the Pirrone Road / Arborwood Drive intersection was conducted to determine the appropriate traffic control and required improvements. The existing plus project peak hour volumes will not exceed the minimum MUTCD signal warrant criteria. However, the AM and PM peak hour volumes will warrant the installation of an exclusive left turn only lane on the southbound approach of Pirrone Road at Arborwood Drive. An evaluation of existing plus project conditions demonstrates average vehicle delays at the Pirrone Road / Arborwood Drive intersection will be within acceptable limits (LOS C or better). However, delays on the Arborwood Drive (stop sign controlled) will be in the LOS D range during the AM peak hour. The provision of a southbound acceleration lane on Pirrone Road for the westbound left turn from Arborwood Drive would only slightly reduce delays to the LOS C range. Therefore, the installation of a southbound acceleration lane on Pirrone Road is not recommended.

Similar to the existing conditions analysis, average delays under the existing plus project scenario will remain within acceptable limits at the SR 99 Southbound Ramps intersection. However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour. Therefore, the project will have a potentially significant impact at the SR 99 Northbound Ramps intersection during the AM peak hour. Vehicle queues (95^{th} percentile) on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps intersection will also exceed the distance between the ramps during the AM peak hour. The existing plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria but only marginally satisfy the minimum 100% criteria. Therefore, the installation of signal control at the ramp intersections is not recommended under the existing plus project conditions (delays will remain in the LOS B-C range with the existing all-way stop control).

The Project TIA analysis includes an evaluation of access on the existing Pirrone Road. The average southbound speed on Pirrone Road near Arborwood Drive was recorded at +/-40 mph (85^{th} percentile speed of 45 mph). The average northbound speed was recorded at +/44 mph (85^{th} percentile speed of

48 mph). Pirrone Road south of Hammett Road has a relatively level vertical alignment. There is a horizontal curve to the west on Pirrone Road south of Hammett Road followed by a short tangent section and a horizontal curve to the east. The area along Pirrone Road north of Arborwood Drive (both sides) is relatively free of fixed objects that obstruct the visibility of vehicles on Pirrone Road (southbound) or vehicles exiting Arborwood Drive (westbound). Southbound stopping sight distance on Pirrone Road is acceptable for the 85^{th} percentile speed (45 mph) near Arborwood Drive. Corner sight distance looking north is acceptable for vehicles exiting Arborwood Drive (westbound left turn).

Field observations identified the controlling line-of-sight south of Arborwood Drive as an existing chain link fence on the east side of Pirrone Road. The northbound stopping sight distance for vehicles on Pirrone Road is adequate for +/-47 mph. However, the corner sight distance for vehicles exiting Arborwood Drive looking south is only adequate for +/-32 mph (well below the 85^{th} percentile speed of northbound traffic, 48 mph). The southbound left turn lane improvements on the existing Pirrone Road will also require transition taper improvements south of Arborwood Drive. The existing chain link fence on the east side of Pirrone Road south of Arborwood Drive will need to be relocated east to provide acceptable corner sight distance for vehicles exiting Arborwood Drive.

<u>Cumulative and Cumulative Plus Project Conditions</u>

The Project TIA presents an evaluation of future cumulative conditions. Cumulative conditions are typically comprised of existing traffic plus traffic generated by other known future developments. The evaluation of cumulative conditions is based on future projects listed on the County's website. The list of projects selected for the cumulative analysis was developed in consultation with County staff. A majority of the cumulative projects are local light industrial or warehouse type projects. However, the Lark Landing (PLN2019-0131) parcel located south of the project site has a potential to develop various commercial and office uses (e.g. gas station, fast-food restaurant, retail space, hotel, carwash & office space). As previously stated, the County has conditioned the Lark Landing parcel to take primary access off of Arborwood Drive. Development of the Lark Landing parcel(s) would more than likely trigger the New Pirrone Road improvements. The Lark Landing property owner has some uncertainty about the scope of the future development. Therefore, due to the location of the Lark Landing parcel(s) and development potential, it was deemed reasonable to analyze the cumulative conditions "without" and "with" the possible future development of the Lark Landing parcel(s).

It's noted that long range infrastructure improvements in this portion of the County initially included a reconstruction of the SR 99 / Hammett Road interchange. Hammett Road was also to extended east with an expressway section. Caltrans had prepared various environmental documents (PSR and EIR). Caltrans recently completed extensive improvements along SR 219, east of SR 99. Caltrans staff has indicated that the SR 99 / Hammett Road interchange improvements will not be constructed in the foreseeable future. Therefore, cumulative analysis does not assume that any major improvements will be constructed by Caltrans or the County at the SR 99 / Hammett Road interchange.

The cumulative conditions analysis (without the Lark Landing development) indicates average delays at the Pirrone Road / Arborwood Drive intersection will be within acceptable limits (LOS C or better). Average delays at the SR 99 Southbound Ramps intersection will remain with acceptable limits.

However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour. Therefore, the project will have a potentially significant impact at the SR 99 Northbound Ramps intersection during the AM peak hour. Vehicle queues (95^{th} percentile) on the eastbound Hammett Road approach at the SR 99 Northbound Ramps intersection will also exceed the distance between the ramps during the AM peak hour. The cumulative plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria (MUTCD). However, the AM peak hour volumes will only marginally satisfy the minimum 100% signal warrant criteria. Therefore, the installation of signal control at the SR 99 Southbound Ramps intersection is not recommended under the cumulative plus project conditions (average delays will remain in the LOS B-C range with the existing all-way stop control).

In response to SB 743, Project TIA includes data relative to the project's Vehicle Miles Traveled (VMT) as requested by Caltrans staff. Though the County nor Caltrans have any formal VMT analysis standards or "level of significance" criterion, the LOS analysis software does produce Measures of Effectiveness (MOE) data. Unfortunately, the MOE data is only produced for the local network analyzed in the Project TIA and not a larger network including the entire County or Tri-County area. In addition, the MOE data does not account for the large percentage of project related pass-by trips (e.g. 80-85% of the trips attracted to a gas station). The potential Transportation Demand Management (TDM) strategies to reduce VMT for a gas station are somewhat limited. However, the TDM strategies to reduce the project's VMT could include implementing a rideshare program for employees and/or an incentive based program for employees to use local transit.

Total Cumulative Conditions

An evaluation of total cumulative traffic demands was performed assuming the future development of the Lark Landing parcel(s) and completion of the New Pirrone Road. The Lark Landing development could generate up to 16% more AM peak hour trips and 65% more PM peak hour trips than the Salida Gas Station & C-Store project. The total cumulative analysis assumes the installation of traffic signal control at the New Pirrone Road / Arborwood Drive intersection and north-south left turn lanes on New Pirrone Road at Arborwood Drive.

Average delays at the New Pirrone Road / Arborwood Drive intersection will be within acceptable limits. However, average delays at both SR 99 ramp intersections will exceed the County's LOS C threshold during the AM peak hour. The total cumulative volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume traffic signal warrant criteria. However, the total cumulative volumes will only marginally satisfy the minimum peak hour (100%) signal warrant criteria. The minor restriping of Hammett Road at the ramp intersection approaches would reduce the potential need for future signal control. As previously stated, Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities. Therefore, average delays in the LOS D range may be considered acceptable during short peak demand periods (30-45 minutes).

Mitigation Measures

The evaluation of existing plus project and cumulative plus project conditions identifies a potentially significant project impact at the SR 99 Northbound Ramps intersection during the AM peak hour. The east and westbound Hammett Road approaches have a single 20' lane at both SR 99 ramp intersections. The proposed project mitigation includes restriping the eastbound approach on Hammett Road at SR 99 Northbound Ramps intersection with one (1) through lane and an exclusive left turn only lane, which could be accomplished within the existing roadway width (40'). Average delays will be within acceptable limits with the proposed mitigation (LOS C or better) under both "plus" project scenarios. The 95th percentile queues on the eastbound approach will also be significantly reduced during the AM peak hour (eliminating existing queuing issue). The cumulative plus project volumes will exceed the minimum 70% "peak hour" volume signal warrant criteria, but not the 100% criteria. Therefore, the installation of signal control is not recommended under the cumulative plus project conditions (average delays will be in the LOS B-C range with existing all-way stop control). The potential project impact will be reduced to a level of "less than significant" under both "plus" project scenarios.

As previously stated, the analysis of total cumulative traffic demands assumes the future development of the Lark Landing parcel(s) and New Pirrone Road. The analysis demonstrates that average vehicle delays will exceed the County's LOS C threshold at the both SR 99 ramp intersections during the AM peak hour. The analysis determined that the addition of an exclusive westbound right turn only lane on Hammett Road at the SR Northbound Ramps intersection would be required to provide acceptable delays (LOS C or better). This improvement could be accomplished with a minor widening of the north side of Hammett Road east of the intersection. The total cumulative analysis was also conducted assuming the addition of an exclusive westbound left turn lane on Hammett Road at the southbound ramps. Average delays would still be in the LOS D range but may be considered acceptable by Caltrans during short peak demand periods (30-45 minutes). The future installation of traffic signal control should only be considered if it's fully demonstrated that signal control is required to maintain safe access. The evaluation of long range infrastructure improvements at the SR 99 / Hammett Road interchange was beyond the scope defined for the Project TIA.

Development projects in Stanislaus County are subject to the Regional Traffic Impact Fee (RTIF) as outlined in the Comprehensive Public Facilities Impact Fee Update Study - Administrative Draft (Sept. 15, 2017). Payment of the project's RTIF provides a fair-share contribution towards the costs associated with the future regional and local infrastructure improvements. Therefore, the project applicant shall negotiate and pay the applicable RTIF as required by Stanislaus County.

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- HCM Level of Service (LOS) LOS Descriptions
- Synchro 10 “Level of Service” (LOS) and Measure of Effectiveness (MOE) Worksheets
- California MUTCD Traffic Signal Warrant Data and Graphs
- TRB Left Turn Lane Warrant Graph
- Pirrone Road Vehicle Speed Data
- Cumulative Projects List, Location Map and Trip Generation Estimates

1.0 INTRODUCTION

The Traffic Impact Analysis (TIA) presents an evaluation of the potential impacts associated with the Salida Gas Station & C-Store project in Stanislaus County. The project site (APN: 003-014-007) is located east of the State Route (SR) 99 / Hammett Road interchange and the existing Pirrone Road in the unincorporated area north of the Salida community. The project includes the development of a new gas station and convenience market, a small retail space and a sit-down restaurant. Project access will be provided via a full access driveway on Arborwood Drive, east of the existing Pirrone Road. A right-turn-only driveway will be provided on the existing Pirrone Road, between Hammett Road and Arborwood Drive. All parking associated with the project will be accommodated on-site. The general location of the project site is illustrated on Figure 1 (Project Location Map).

The Project TIA scope was defined in consultation with County and Caltrans staff. The evaluation of potential project impacts focuses on an analysis of traffic operations during the morning (AM) and afternoon (PM) commuter peak hours at the following study intersections:

- Pirrone Road / Arborwood Drive
- Hammett Road / SR 99 Northbound Ramps
- Hammett Road / SR 99 Southbound Ramps

New peak period traffic count data was collected for the Project TIA. Existing traffic operations were observed during the morning and afternoon commuter peak periods. Information regarding future development projects in the Salida Area was provided by County staff. The Project TIA includes an evaluation of access on Pirrone Road and cumulative conditions. The Project TIA was conducted according to the Caltrans guidelines, “Guide for the Preparation of Traffic Impact Studies” (December 2002).

LEGEND

= Project Site

NORTH

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FIGURE 1
PROJECT LOCATION MAP

2.0 EXISTING CONDITIONS

The local roadway network serving the project site includes SR 99, Hammett Road, Pirrone Road and Arborwood Drive. The following is a brief description of the local roadway network and an evaluation of existing traffic operations.

Network Description

SR 99 is a north-south freeway in Stanislaus County providing regional access between Sacramento and Bakersfield. SR 99 north and south of Hammett Road has three (3) travel lanes in each direction, with a posted 65 miles-per-hour (mph) speed limit. Access to and from Hammett Road is provided via a "grade-separated" interchange. The north and southbound ramps at SR 99 / Hammett Road interchange are relatively long (northbound off-ramp +/-1,300'; northbound on-ramp +/-1,500'; southbound off-ramp +/-1,400'; & southbound on-ramp +/-1,400'). Recent improvements at the SR 99 / Hammett Road interchange included the installation of "all-way" stop control at both ramp intersections and ramp metering on both on-ramps. The approaches at both ramp intersections are striped for a single lane (shared left-through-right lane).

Hammett Road extends west from Pirrone Road and south to Beckwith Road with a single travel lane in each direction and a 55 mph speed limit. Hammett Road is classified as a minor arterial (MA) in the County's General Plan (GP) Circulation Element (Road Circulation Diagram). Hammett Road is stop sign control with a single approach lane at the SR 99 north and southbound ramp intersections. The bridge decks over SR 99 and the Union Pacific Railroad (UPRR) both have a width of +/-40'.

Pirrone Road extends south from Hammett Road with a single travel lane in each direction and a 45 mph posted speed limit. Pirrone Road is classified as a MA in the County's GP Circulation Element (Road Circulation Diagram). The Hammett Road-to-Pirrone Road connection is free-flowing with no traffic control (e.g. a stop sign). There are curve advisory 15 mph signs posted for both directions of travel. There is also a small paved area on the north side of Hammett Road opposite Pirrone Road, which does not have any traffic control. Pirrone Road south of Gateway Drive transitions to a 5-lane section (2 lanes in each direction with a two-way left turn lane).

Arborwood Drive is currently a single lane driveway extending east from Pirrone Road. This narrow driveway serves the Salida Sanitary District (6200 Pirrone Road) and local agricultural fields. There is no traffic control for vehicles exiting this driveway (e.g. a stop sign). There is a connection to the Vizcaya residential subdivision via Vistara Way (east of the New Pirrone Road alignment), which is currently closed.

The existing traffic control and approach lane geometrics at the study intersections are graphically illustrated on Figure 2A.

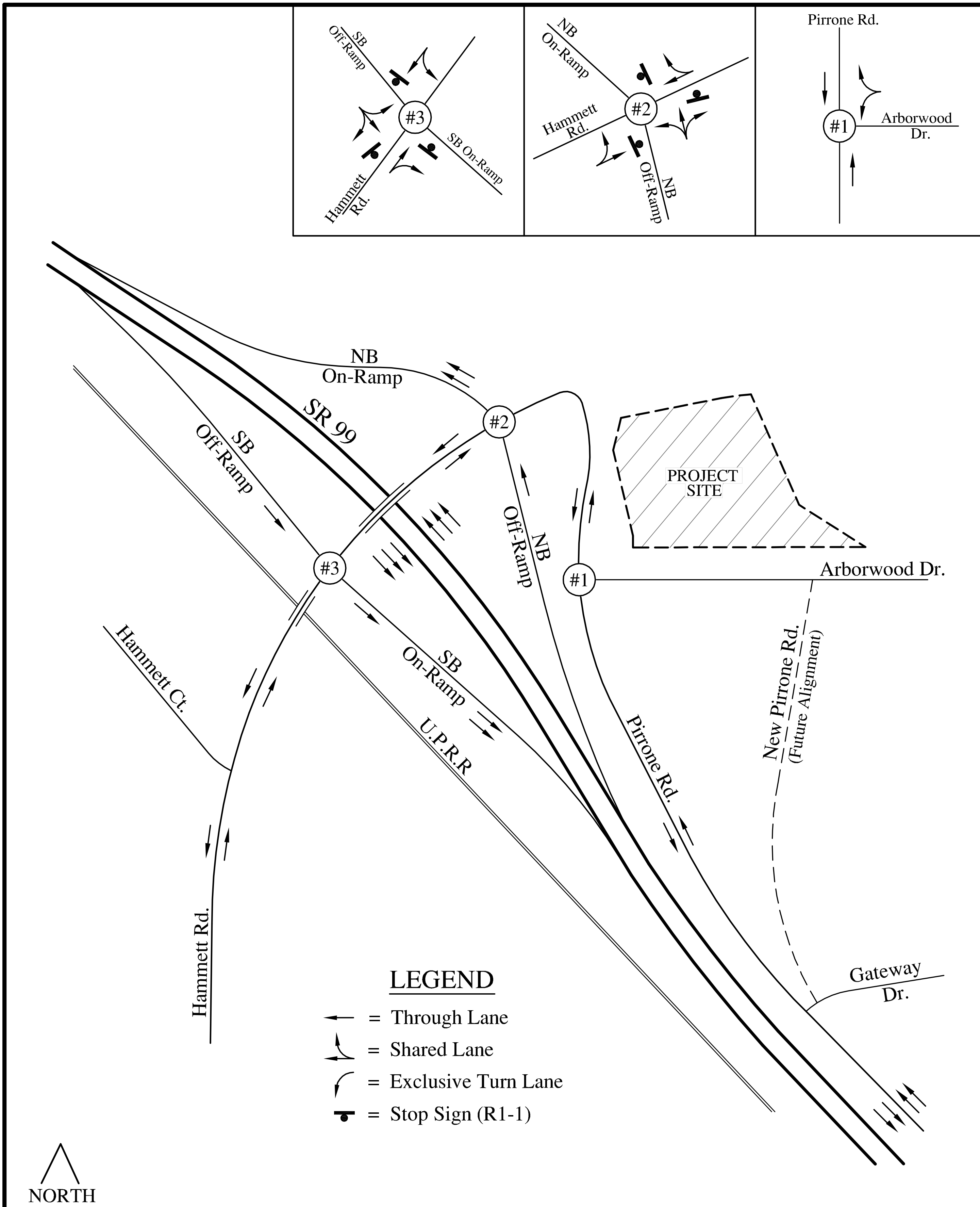

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FIGURE 2A
EXISTING GEOMETRICS

Traffic Volumes

New traffic count data was collected at the study intersections to document existing conditions during the morning and afternoon commuter periods. As requested by Caltrans staff, the data was collected between 5:30 & 8:30 AM and 3:30 & 6:30 PM. The data collection also included the appropriate truck traffic data, and vehicle queue data on Hammett Road (westbound at SR 99 Northbound Ramps) and Pirrone Road (northbound at Hammett Road). The morning peak hour for both the ramp intersections occurred between 7:30 & 8:30 AM. The afternoon peak hour for the SR 99 Northbound Ramps intersection occurred between 3:30 & 4:30 PM, which was attributable to the higher westbound right turn demand entering SR 99 from Hammett Road and Pirrone Road. The other approach movements had relatively stable volumes over the 3-hour period. The short spike in demands for only 1 movement (WBRT) at an intersection is typical of the afternoon peak associated with local school traffic. The peak hour at the SR 99 Southbound Ramps intersection occurred between 4:45 & 5:45 PM.

Consultation with County staff indicated the operational analysis should focus on the peak hour within the typical afternoon commuter period for the local street system (4:00 & 6:00 PM). The afternoon peak hour for the combined volumes at both ramp intersections occurred between 4:45 & 5:45 PM. The peak hour volumes were balanced between the ramp intersections to represent actual operations. The existing AM and PM peak hour traffic volumes at the study intersections are illustrated on Figure 2B. It's noted that negligible traffic was observed using the paved area on the north side of Hammett Road (opposite Pirrone Road) and the Salida Sanitary District driveway. Copies of the traffic count data summary, raw traffic count data and queue data are included with the Appendix Material.

Level of Service Analysis

Various "level of service" (LOS) methodologies are used to evaluate traffic operations. Operating conditions range from LOS "A" (free-flowing) to LOS "F" (forced-flow). Brief descriptions of the LOS values are included in the Appendix Material. Stanislaus County has adopted the LOS C standard as the lower limit for acceptable operations at intersections (GP Circulation Element). Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities.

The evaluation of "peak hour" operations at the study intersections is based on analyses methodologies in the Highway Capacity Manual (HCM, 6th Edition). The methodologies evaluate operations based on vehicle "control" delay. Control delay is the principal service measure for evaluating LOS. Control delay includes the delay associated with vehicles slowing down in advance of an intersection, time spent stopped on an intersection, time spent moving up in the queue and the time needed for a vehicle to accelerate to their desired speed. Delay for "all-way" stop controlled and "signalized" intersections is evaluated for the overall peak hour as an "average." The analysis of un-signalized intersections also estimates delay for the each "critical" movement (e.g. stop sign controlled approaches and main line left turn). Table 1 presents the LOS and vehicle control delay criterion for signalized and un-signalized intersections.

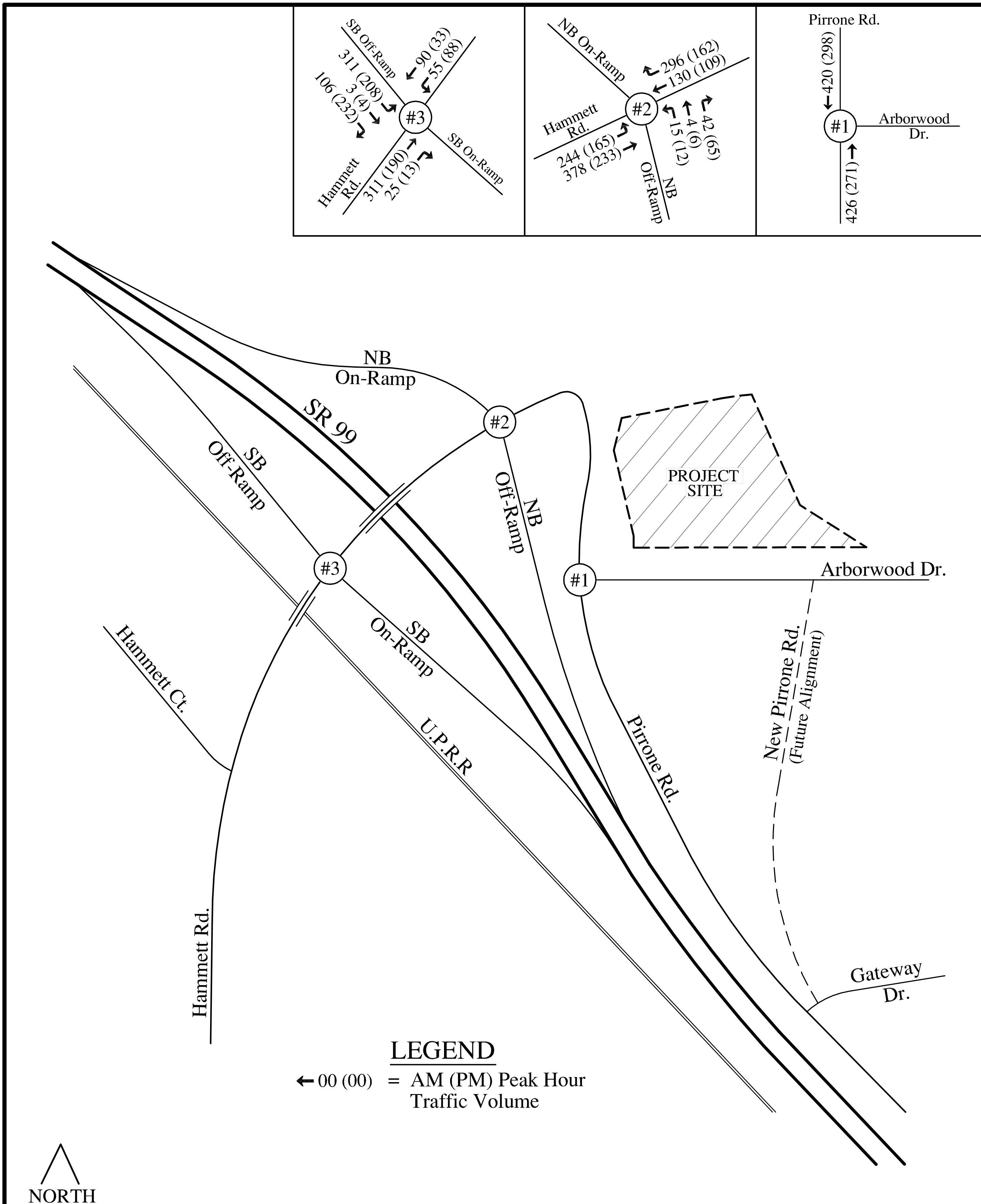

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FIGURE 2B
EXISTING
TRAFFIC VOLUMES

Table 1 - LOS and Vehicle Control Delay Criterion

LOS Value	Intersection Control Type	
	Signalized Control	Two-Way & All-Way Stop Sign Control
	Control Delay per Vehicle (seconds / vehicle)	
A	< or = 10.0	< or = 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Again, it's noted that average vehicle delays are reported when evaluating unsignalized intersections. Some agencies also review the delays on the stop sign controlled approaches for analysis purposes (e.g. use highest delay on a stop sign controlled approach). When side street approach delays near the LOS D-F range many agencies require an evaluation of the traffic signal warrants to determine if traffic control improvements may be appropriate. The installation of traffic signal control at a stop sign controlled intersection will typically reduce vehicle delays on the side street approaches (stop controlled) but will increase delays on the main street approaches. However, the benefits associated with traffic signal control may also address existing safety issues.

The Synchro 10 software was used to perform the intersection LOS analysis (HCM, 6th Edition). The existing peak hour factors (PHF) and actual truck traffic percentages were also used to accurately model current operations (represents peak 15-minute flow conditions). The results of the existing intersection LOS analysis are presented in Table 2, with copies of the Synchro 10 worksheets included with the Appendix Material.

Table 2 - Existing Intersection LOS Analysis

Study Intersection	Average Delay - LOS	
	AM Peak Hour	PM Peak Hour
SR 99 NB Ramps / Hammett Rd.	33.7 - D	10.8 - B
SR 99 SB Ramps / Hammett Rd.	20.2 - C	12.4 - B

The data in Table 2 indicates average vehicle delays are currently within acceptable limits as defined by the County (LOS C or better), except at the SR 99 Northbound Ramps intersection during the AM peak hour (LOS D). As previously noted, Caltrans endeavors to maintain a target LOS at the transition between LOS C and D. Therefore, vehicle delays in the LOS D range may be considered acceptable during short peak demand periods (e.g. 15-30 minutes within the peak hour).

The Synchro 10 analysis also estimates vehicle queues on each approach at the ramp intersections. The LOS analysis estimates significant queuing during the AM peak hour on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps (95th percentile queue of 16 vehicles, +/-400'). There is approximately 570' between the north and southbound ramp intersections on Hammett Road. The Synchro 10 analysis did not identify any other significant queuing on the other approaches. The actual vehicle queue data on Hammett Road (westbound at SR 99 Northbound Ramps) and Pirrone Road (northbound at Hammett Road) documented maximum queues of seven (7) vehicles during the morning period (8:00 & 8:15 AM) and the (10) vehicles during the afternoon period (3:45 PM). A nine (9) vehicle queue was also observed around 5:15 PM.

Traffic volumes at the SR 99 Northbound Ramps intersection are below the minimum 70% "peak hour" volume traffic signal warrant criteria in the 2014 California Manual on Uniform Traffic Control Devices (MUTCD, Warrant #3). The AM and PM peak hour volumes at the SR 99 Southbound Ramps intersection currently exceed the minimum 70% "peak hour" volume traffic signal warrant criteria. However, the AM and PM peak hour volumes are below the 100% warrant criteria. The installation of traffic signal control at the SR 99 Southbound Ramps intersection is not recommended under existing conditions since average vehicle delays are in the LOS B-C range with the existing all-way stop control.

Observations of Peak Period Operations

Traffic operations were observed during the morning and afternoon commuter peak periods. Overall peak period operations were relatively good at both ramp intersections. However, significant queuing was observed during the AM peak hour on the eastbound Hammett Road approach at the northbound ramps during peak demand periods (15-20 minutes). During the AM peak hour the eastbound queue backed up between the north and southbound ramp intersections a couple of times.

3.0 PROJECT CONDITIONS

The following is a brief description of the proposed project, an estimate of the project trip generation quantities, an assignment of project trips to the study street system and an evaluation of the potential impacts on existing operations.

Description

The project includes the development of a new gas station with 10 gas pumps (20 fueling positions); a convenience market (4,500 SF); a small retail space (1,500 SF) and a sit-down restaurant (4,000 SF). Project access will be provided via a full access driveway on Arborwood Drive, east of the existing Pirrone Road. The project will also construct improvements on Arborwood Drive to allow two-way travel between Pirrone Road and the project driveway. A right-turn-only driveway will be provided on the existing Pirrone Road (between Hammett Road and Arborwood Drive). On-site parking will be provided for +/-42 vehicles (marked spaces) plus the 20 available spaces adjacent the gas pump islands. Parking will also be available along the northerly and easterly perimeters adjacent to the grape vine buffers. A copy of the project site plan is provided on Figure 3.

Project Trip Generation Estimates

The project trip generation estimates have been derived using data in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) and Trip Generation Handbook (3rd Edition). The applicable ITE trip generation rates are provided in Table 3. It's noted that the land use description for ITE category #945 (Gasoline/Service Station with Convenience Markets) states the stations may also have ancillary facilities (e.g. a car wash).

Table 3 - Applicable ITE Trip Generation Rates

Land Use Category	Trip Generation Rate				
	AM Pk. Hr.		PM Pk. Hr.		Daily
	In	Out	In	Out	
ITE #820 - General Retail (a)	0.58	0.36	1.83	1.98	37.75
ITE #932 - High Turnover Sit Down Restaurant (a)	5.47	4.47	6.06	3.71	112.18
ITE #945 - Service Station w/ Conv. Market (b)	6.36	6.11	7.13	6.86	205.36

(a) Number of vehicle trips per 1,000 SF
(b) Number of vehicle trips per fueling position

Mixed-use developments will have some interaction between the uses, which are considered internal "captured" trips. These trips are internal to the project site and do not exit and then re-enter the site. Caltrans allows a 5% percent reduction to account for internal "captured" trips (95% of the total project trips will be external to the site).

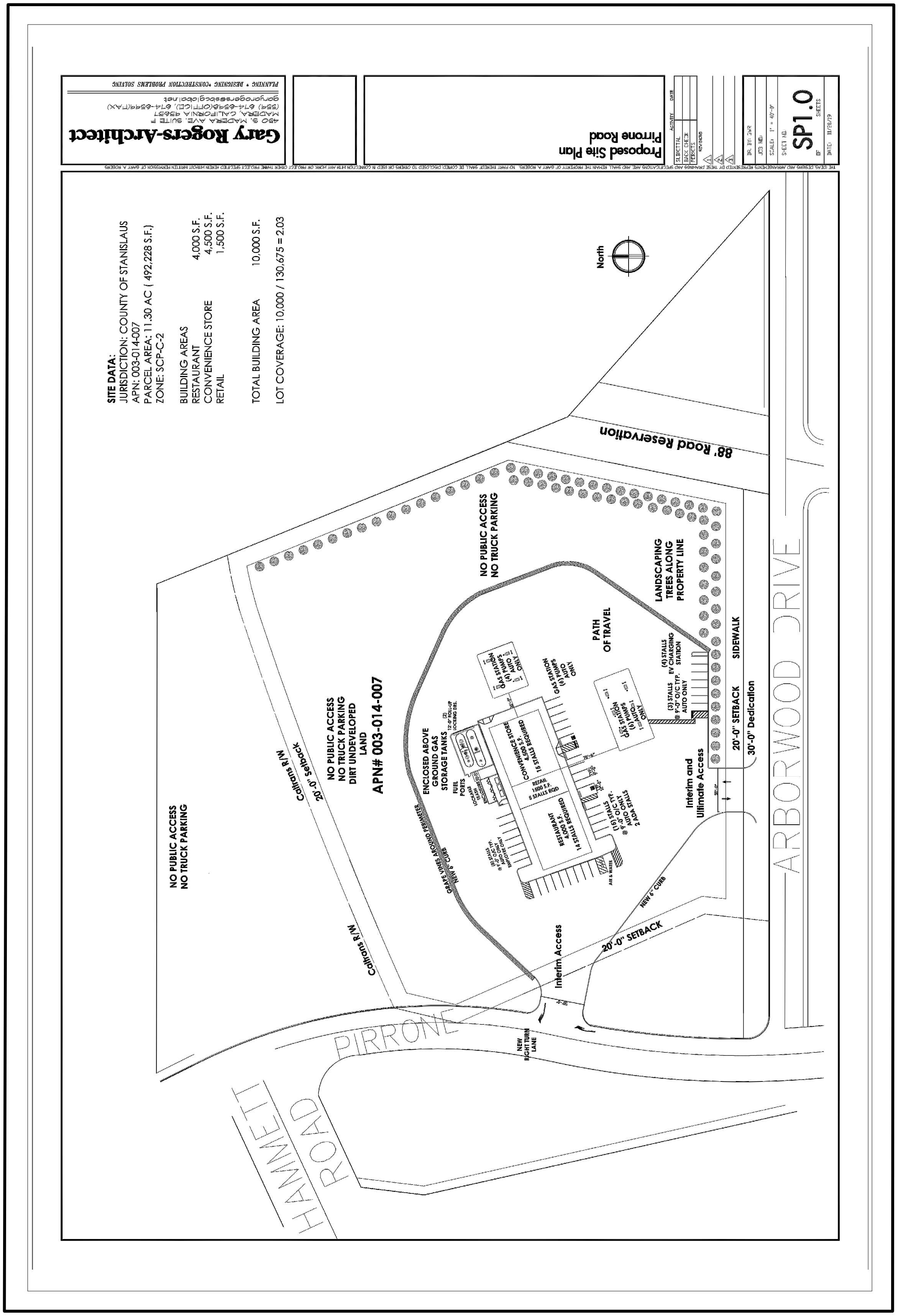

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FIGURE 3
PROJECT
SITE PLAN

Data in the ITE Trip Generation Handbook demonstrates a significant portion of retail related trips are "pass-by" and/or "diverted-link" trips coming from traffic already on the adjacent street system (80-85% of the trips attracted to a gas station). Based on the project location (unincorporated County), it's anticipated that very few of the project trips will be new "single purpose" trips attracted from other local communities (e.g. Ceres, Modesto, Ripon or Manteca). Therefore, the majority (if not all) of project trips to and from SR 99 will already be on the freeway. Though the pass-by trips will come from SR 99 and Pirrone Road, the SR 99 ramp intersections will experience 100% of the project external demands (the trips still need to exit and re-enter the freeway). Caltrans limits the pass-by trip reduction to 15%. The project trip generation estimates are presented in Table 4.

Table 4 - Project Trip Generation Estimates

Land Use	Number of Vehicle Trips				
	AM Pk. Hr.		PM Pk. Hr.		Daily
	In	Out	In	Out	
Retail (1,500 SF)	1	1	3	3	56
Sit Down Restaurant (4,000 SF)	22	18	24	15	448
Service Station with Conv. Market (20 F.P.)	127	122	143	137	4,108
Total Project Site Trips:	150	141	170	155	4,612
External Project Demands (95% of Total):	143	134	162	147	4,382
Project Pass-By Trips (15%):	-23	-21	-26	-23	-692
Project "Primary" (Single Purpose) Trips:	120	113	136	124	3,690

The data in Table 4 indicates the project will generate approximately 4,612 daily trips, with 291 trips during the AM peak hour (150 in & 141 out) and 325 trips during the PM peak hour (170 in & 155 out). The external demands are estimated at 95% of the total project trips (277 AM peak hour trips & 309 PM peak hour trips). The actual number of project related pass-by trips is anticipated to the much higher than the 15% allowed by Caltrans. Therefore, the number of primary and external trips in Table 4 represents a worse-case scenario.

Project Traffic Volumes

The assignment of project trips to the study street system was based on a review of the traffic count data and the locations of other local land uses in the Salida area. Based on the project location (east side of SR 99), it's anticipated that more trips will come from the SR 99 northbound lanes than the southbound lanes. Project trips are expected to exit SR 99 from one direction and then continue their trip in the same direction after visiting the project site (e.g. exit NB off-ramp & re-enter NB on-ramp). The trip assignment percentages and project "primary" trips are illustrated on Figure 4A. The project "pass-by" and "external" trips (95% of the total) are shown on Figures 4B and 4C, respectively.

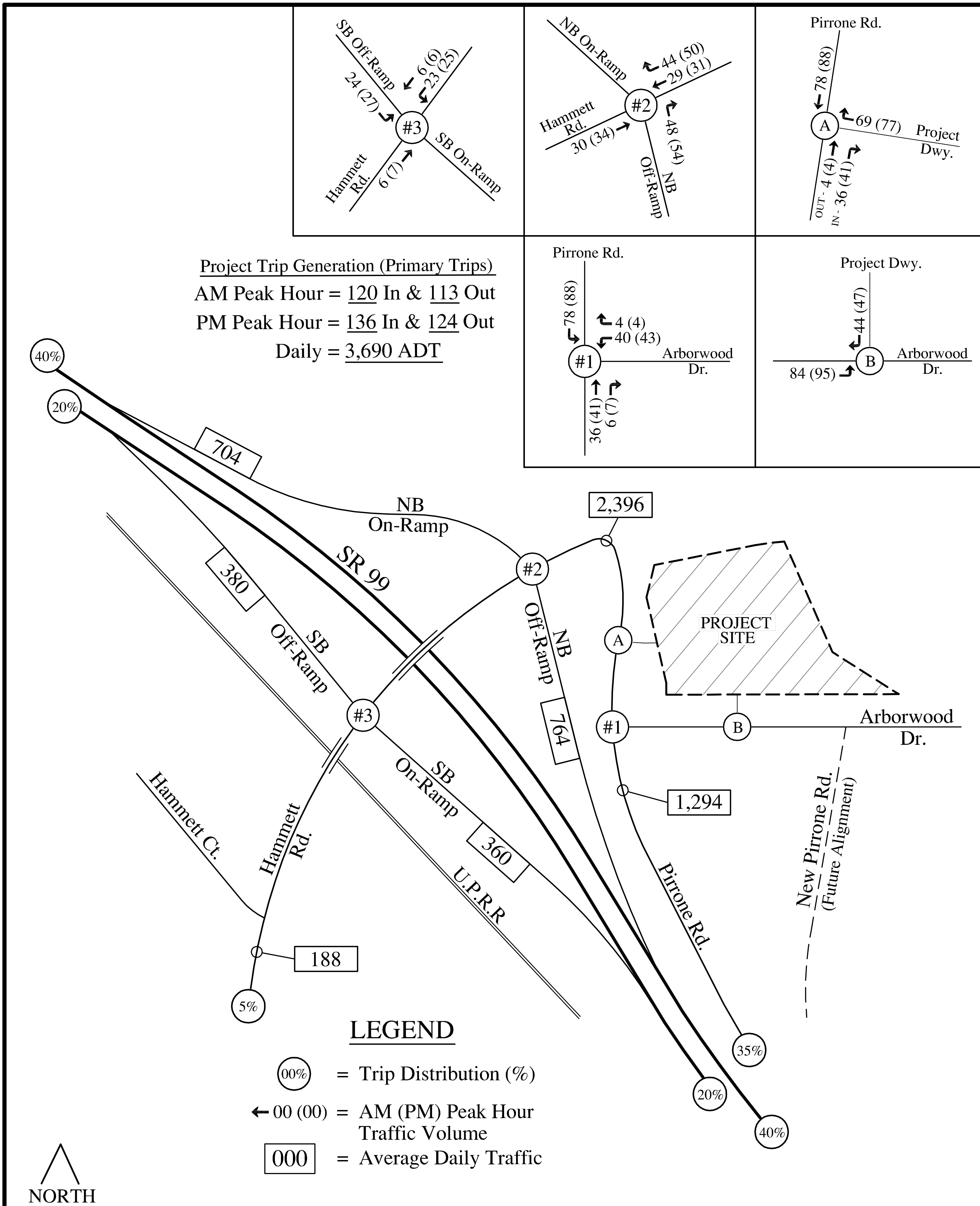

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FIGURE 4A
PROJECT
"PRIMARY" TRIPS

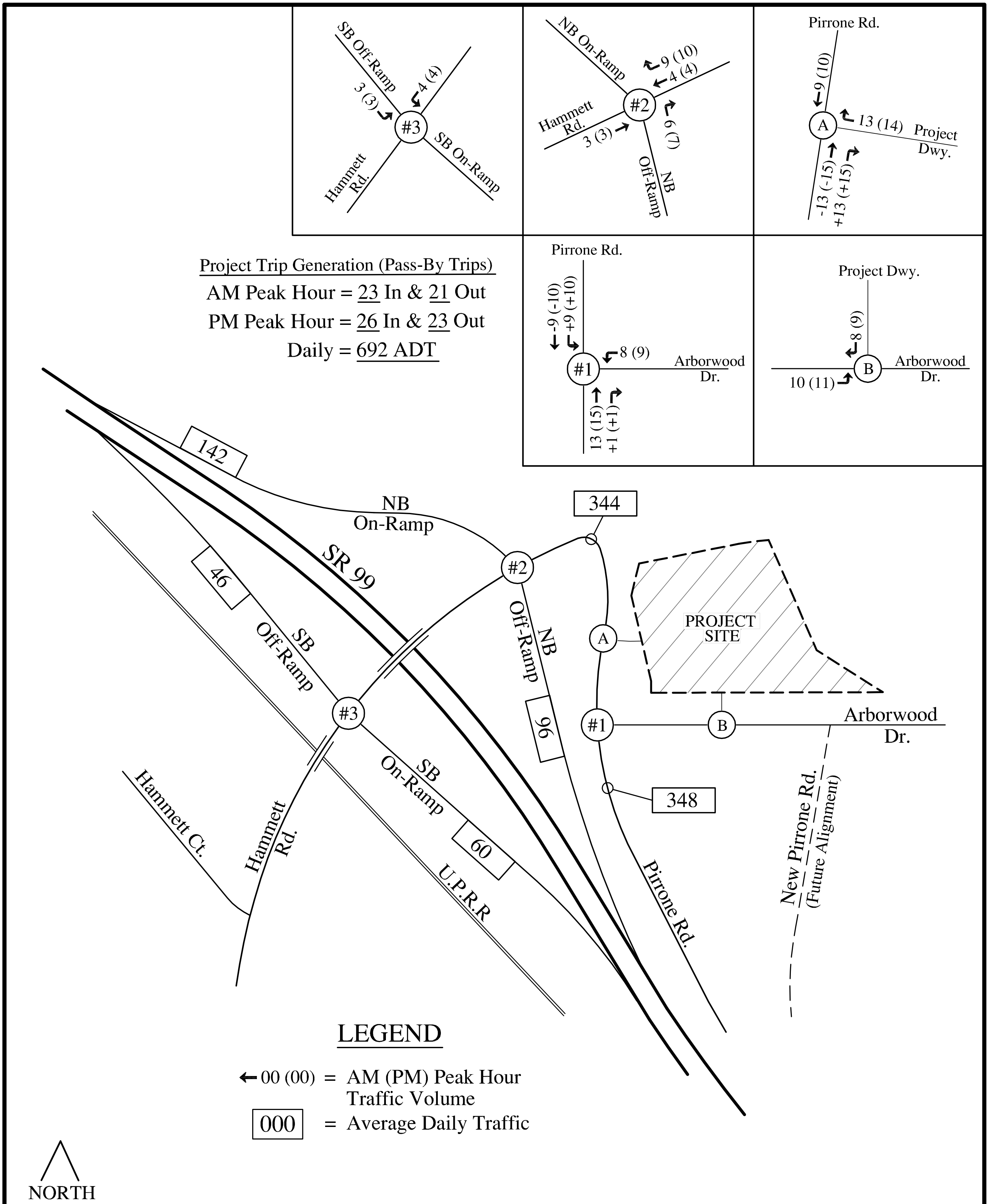

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FIGURE 4B
PROJECT
"PASS-BY" TRIPS

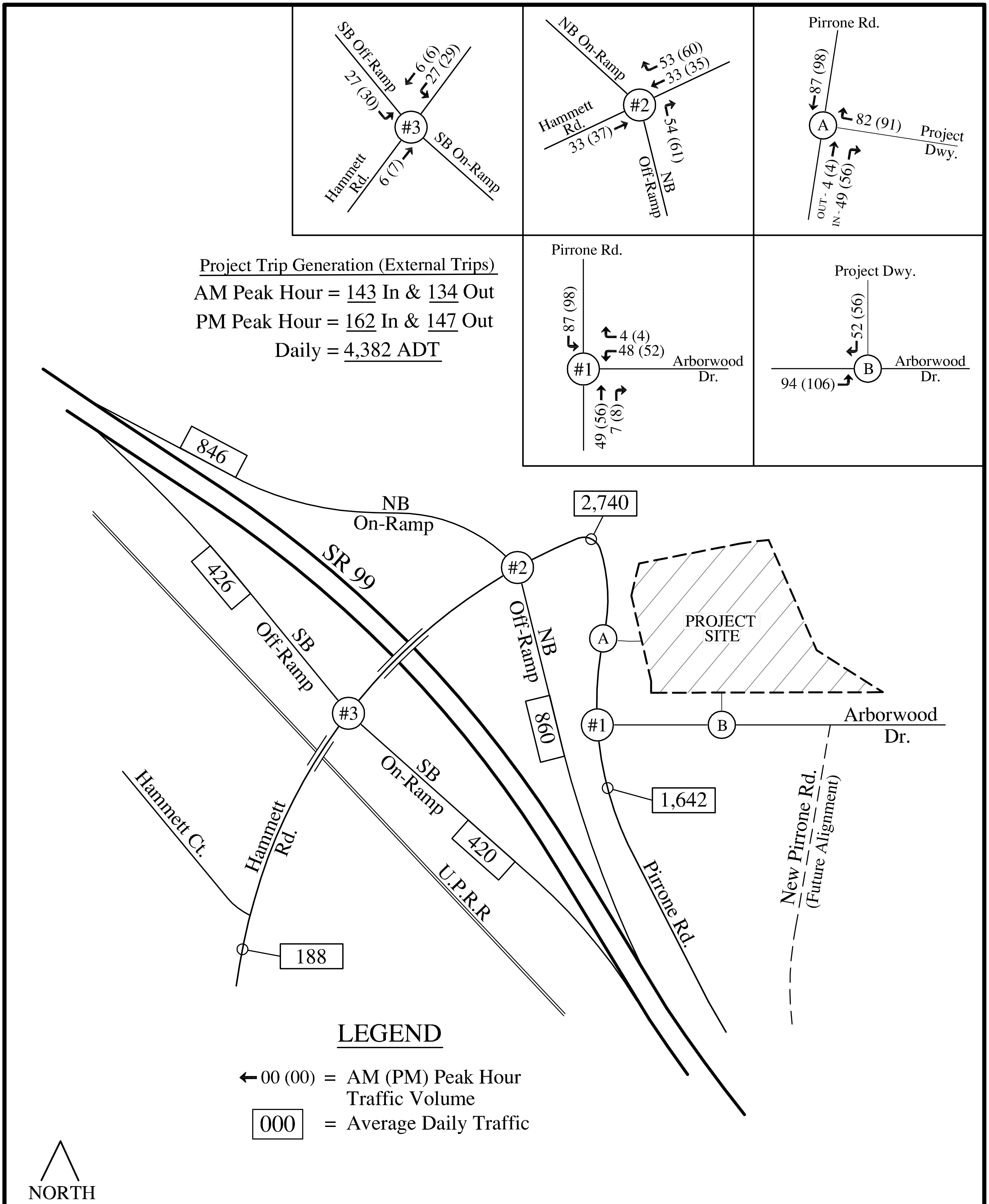

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FIGURE 4C
PROJECT
"EXTERNAL" TRIPS

It's noted the County has conditioned the project site and the parcel south of the project site to take primary access off of Arborwood Drive. Eventually, the existing Pirrone Road on the west side of these parcels will be vacated and the New Pirrone Road will be improved and extended along the east side of these parcels to intersect a short extension of Hammett Road (east of the existing Pirrone Road). County staff has indicated there could be an interim condition where the existing Pirrone Road is used north of Arborwood Drive and the New Pirrone Road is used south of Arborwood Drive. However, traffic signal control would more than likely be required on Arborwood Drive to accommodate access for these parcels. The external project trips on Figure 4C were redistributed assuming the future improvement of the New Pirrone Road alignment. The project "external" trips associated with the New Pirrone Road alignment are illustrated on Figure 4D. A discussion and an evaluation of this access scenario are presented under cumulative conditions.

Existing Plus Project Traffic Volumes

As previously stated, the project conditions analysis presents an evaluation of the potential impacts on existing operations. The existing peak hour traffic volumes on Figure 2B were combined with the project "external" trips on Figure 4C to derive the existing plus project traffic volumes. The existing plus project traffic volumes are illustrated on Figure 5.

Level of Significance Criterion

The evaluation of potential project impacts is based on standard "level of significance" criterion. A traffic impact is considered potentially significant if it renders an unacceptable LOS or worsens an already unacceptable condition. At an unsignalized intersection, a traffic impact may be considered "adverse but not significant" if the LOS standard is exceeded but traffic conditions do not satisfy the minimum traffic signal warrants. Under this condition, several options are available to reduce delays on the stop sign controlled approaches (e.g. add a turn lane, add an acceleration lane or add two-way left turn lanes). As previously stated, the installation of signal control will typically reduce delays on the side street approaches (stop controlled) but increase delays on the main street approaches. If the installation of traffic signal control is not warranted the project impact would be considered "adverse but not significant."

Level of Service Analysis

Similar to the existing conditions analysis, the existing plus project volumes (Figure 5) were evaluated using the Synchro 10 software. A review of the existing plus project volumes at the Pirrone Road / Arborwood Drive intersection was conducted to determine the appropriate traffic control and required improvements. The existing plus project volumes will not exceed the minimum 70% "peak hour" volume traffic signal warrant criteria in the MUTCD (Warrant #3). Therefore, Arborwood Drive will be stop sign controlled on the westbound approach at the existing Pirrone Road. The AM and PM peak hour volumes at the Pirrone Road / Arborwood Drive intersection will warrant the installation of

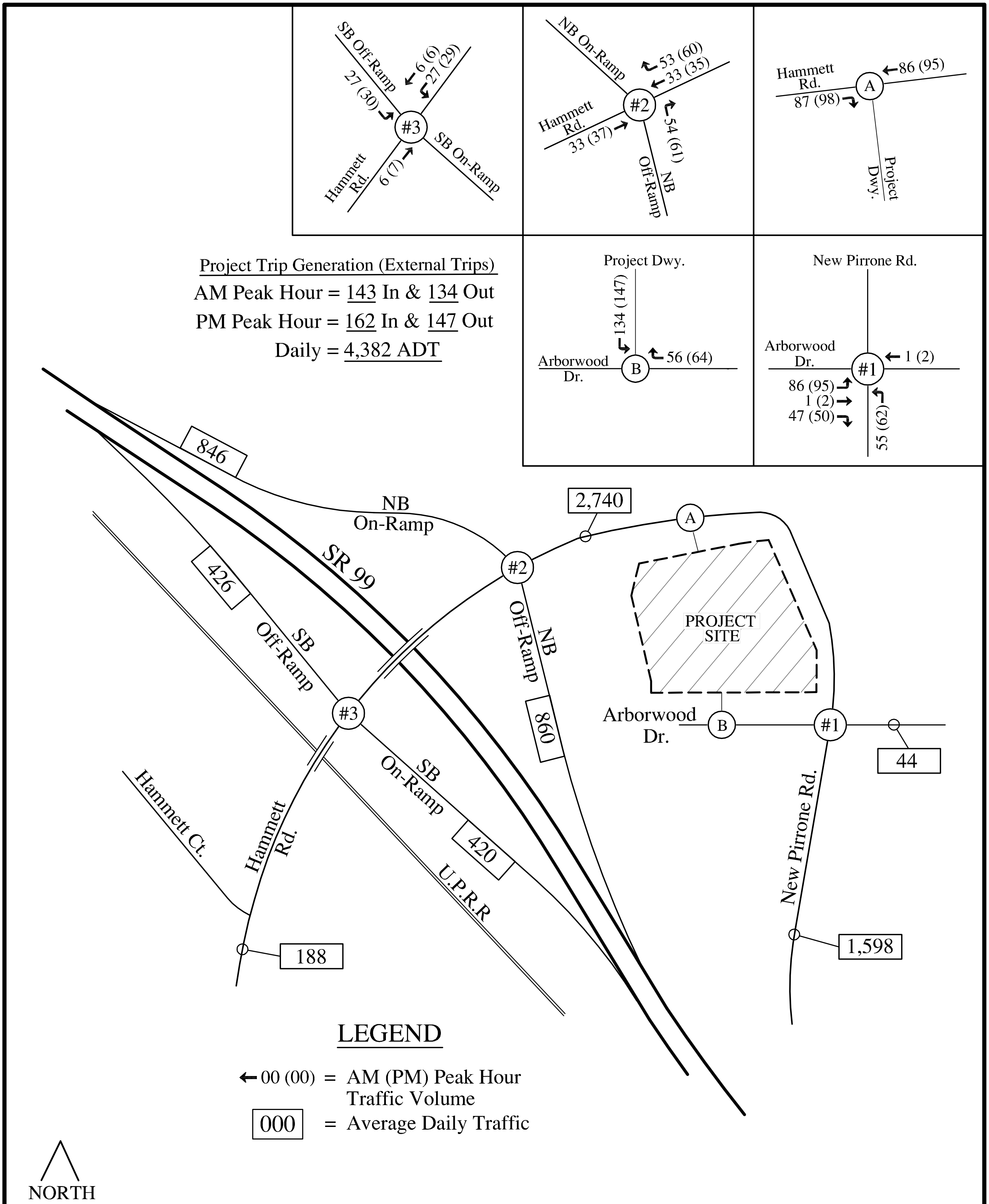

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FIGURE 4D
PROJECT
"EXTERNAL" TRIPS

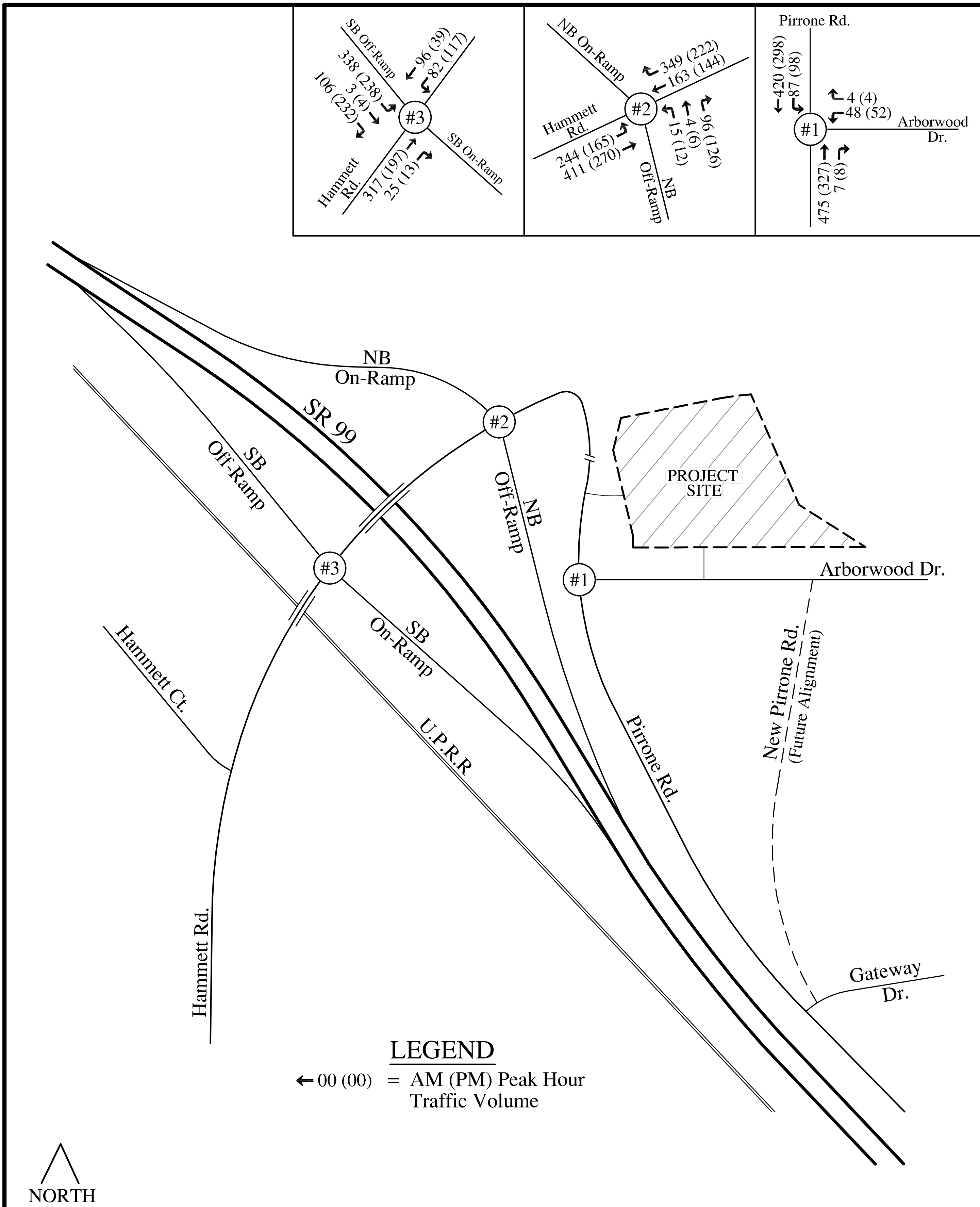

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FIGURE 5
EXISTING PLUS PROJECT TRAFFIC VOLUMES

an exclusive left turn only lane on the southbound approach of Pirrone Road at Arborwood Drive. Copies of the traffic signal and left turn lane warrants are included with the Appendix Material. The results of the existing plus project LOS analysis are presented in Table 5. The existing delay and LOS data are also provided for comparison purposes. Table 5 includes the identification of potentially significance project-specific impacts. Copies of the Synchro 10 worksheets are included with the Appendix Material.

Table 5 - Existing Plus Project Intersection LOS Analysis

Study Intersection	Peak Hour	Average Delay - LOS		Project Impact
		Existing	Existing Plus Project	
Pirrone Rd. (E) / Arborwood Dr.	AM	N/A	2.3 - A	No
WB Approach (a) -			(34.1 - D)	
	PM	N/A	2.4 - A	No
WB Approach (a) -			(19.1 - C)	
SR 99 NB Ramps / Hammett Rd.	AM	33.7 - D	> 50.0 - F	Yes
	PM	10.8 - B	12.9 - B	No
SR 99 SB Ramps / Hammett Rd.	AM	20.2 - C	24.6 - C	No
	PM	12.4 - B	14.1 - B	No

(a) Highest stop controlled approach delay in parenthesis

The data in Table 5 indicates average delays at the Pirrone Road / Arborwood Drive intersection will be within acceptable limits (LOS C or better) provided the southbound left turn lane improvements are constructed in conjunction with the project development. However, delays on the Arborwood Drive stop sign controlled approach will be in the LOS D range during the AM peak hour. The provision of a southbound acceleration lane on Pirrone Road for the westbound left turn from Arborwood Drive would only slightly reduce delays to the LOS C range. Therefore, the installation of a southbound acceleration lane on Pirrone Road is not recommended under this scenario.

Similar to the existing conditions analysis, average delays at the SR 99 Southbound Ramps intersection will remain with acceptable limits. However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour. Therefore, the project traffic will have a potentially significant impact at the SR 99 Northbound Ramps intersection during the AM peak hour.

The existing plus project analysis estimates a 95th percentile queue of +/-24 vehicles (600') on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps intersection during the AM peak hour. This will exceed the 570' distance between the north and southbound ramp intersections. The Synchro 10 analysis did not identify any other significant queuing on the other approaches at either ramp intersection. The existing plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria (MUTCD). However, the AM peak hour volumes will only marginally satisfy the minimum 100% signal warrant criteria. Therefore, the installation of signal control at the SR 99 Southbound Ramps intersection is not recommended under the existing plus project conditions since average delays will in the LOS B-C range with the existing all-way stop control. Copies of the traffic signal warrant graphs are included with the Appendix Material.

Access on Pirrone Road

As stated in the Introduction, the Project TIA analysis includes an evaluation of access on Pirrone Road. A sample of vehicle speeds on Pirrone Road was recorded adjacent to Arborwood Drive under "free-flowing" conditions. The data indicates the average speed of southbound vehicles is +/-40 mph, while the average speed of northbound vehicles is +/-44 mph. The data also demonstrates that the 85th percentile southbound speed is <u>45 mph</u> and the 85th percentile northbound speed is <u>48 mph</u>. A copy of the vehicle speed data is included with the Appendix Material.

The evaluation of access on Pirrone Road also includes a review of sight distance at Arborwood Drive. The Caltrans sight distance criterion are described in the Highway Design Manual (HDM, Table 201.1 for stopping sight distance and Table 405.1A for corner sight distance). Stopping sight distance is the minimum distance required by a driver to bring a vehicle to a complete stop after an object on the road has become visible (Table 201.1). Corner sight distance is the minimum time required for a waiting vehicle (e.g. on a side street) to either cross all lanes of through traffic or cross the near lanes and turn left or right without requiring the through traffic on the main road to radically alter their speed.

Pirrone Road south of Hammett Road has a relatively level vertical alignment. There is a horizontal curve to the west on Pirrone Road south of Hammett Road (R=520' & L=240') followed by a short tangent section (80') and a horizontal curve to the east (R=1,040' & L=640'). The area along Pirrone Road between Hammett Road and Arborwood Drive (both sides) is relatively free of fixed objects that obstruct the visibility of vehicles on Pirrone Road (southbound) or vehicles exiting Arborwood Drive (westbound). Therefore, southbound stopping sight distance on Pirrone Road is acceptable for the 85th percentile speed (45 mph) near Arborwood Drive. Vehicles coming south on Pirrone Road from Hammett Road (transition curve) can be seen from Arborwood Drive. Therefore, the corner sight distance looking north is acceptable for vehicles exiting Arborwood Drive (e.g. westbound left turn).

Field observations identified the controlling line-of-sight south of Arborwood Drive as an existing chain link fence on the east side of Pirrone Road (around the parcel south of the project site). The northbound stopping sight distance on Pirrone Road was measured by a placing portable delineator near the shoulder stripe at Arborwood Drive. The northbound stopping sight distance for vehicles on Pirrone Road was measured at +/-390' near Arborwood Drive (adequate for +/-47 mph). The corner sight distance for vehicles exiting Arborwood Drive looking south was measured by a placing portable delineator at a 30' setback from the existing northbound shoulder stripe. This accounts for a 15' setback for the intersection improvements (e.g. new curb returns) plus a 15' setback from the future stop limit line location (per the Caltrans HDM standard). The corner sight distance for vehicles exiting

Arborwood Drive looking south was measured at +/-350’, which is only adequate for +/-32 mph (well below the 85^{th} percentile speed of northbound traffic, 48 mph).

As discussed under the LOS analysis, a southbound left turn lane will be warranted on Pirrone Road at Arborwood Drive. The left turn lane improvement will also require transition taper improvements on Pirrone Road south of Arborwood Drive. The existing chain link fence on the east side of Pirrone Road south of Arborwood Drive will need to be relocated east to accommodate the southbound left turn lane improvements. The existing fence should be relocated to provide a minimum corner sight distance adequate for at least 50 mph (550’).

4.0 CUMULATIVE CONDITIONS

The Project TIA scope includes an evaluation of future cumulative conditions. Cumulative conditions are typically comprised of existing traffic plus traffic generated by other known future developments (approved & pending). Cumulative conditions can also be evaluated using traffic model data obtained from the local agencies and/or metropolitan planning organizations (MPO, such as StanCOG), when available. Consultation with County staff indicated that the existing Tri-County forecast model does not produce detailed intersection data which could be used for the cumulative analysis. Therefore, the evaluation of cumulative conditions is based on future projects listed on the County's website as Active Planning Projects (EIR, Initial Study, CEQA Exempt and Early Consultation). The list of projects selected for the cumulative analysis was developed in consultation with County staff.

The County records identified seven (7) local projects that have a potential to add peak hour trips to Pirrone Road and the SR 99 / Hammett Road interchange. A list of the cumulative projects and a map showing the general locations of the cumulative projects are included with the Appendix Material. The trip generation estimates associated with the cumulative projects were derived using trip rate data in the ITE Trip Generation Manual (10^{th} Edition). A copy of the cumulative projects trip generation estimates is also included with the Appendix Material. A majority of the cumulative projects are light industrial or warehouse type projects. However, the Lark Landing (PLN2019-0131) parcel is located on the 8.02 acre parcel just south of the project site and Arborwood Drive. The Planning Department application for the Lark Landing parcel includes a General Plan Amendment (GPA), Rezone and Tentative Subdivision Map. The GPA / Rezone would change the parcel from a commercial to a "Planned Development" zone. The Tentative Subdivision Map would create nine (9) smaller parcels. County staff has indicated the application approval may potentially provide development entitlements for the various proposed uses on the nine (9) smaller parcels (e.g. gas station, fast-food restaurant, retail space, hotel, carwash and office space).

As previously discussed (Page 15), the County has conditioned the project site and the parcel south of the project site (Lark Landing) to take primary access off of Arborwood Drive. Upon the development of the Lark Landing parcel(s) the existing Pirrone Road will be vacated and the New Pirrone Road improved and extended along the east side of both parcels to intersect an extension of Hammett Road. County staff has indicated there may be a short-term interim condition that uses the existing Pirrone Road on the west side of the project site and New Pirrone Road south of Arborwood Drive. However, development of the Lark Landing parcel(s) would more than likely trigger the New Pirrone Road improvements. Discussions with the project applicant indicates the Lark Landing property owner has some uncertainty about the scope of the future development. Due to the location of the Lark Landing parcel(s) and development potential, it was deemed reasonable to analyze the cumulative conditions "without" and "with" the possible future development of the Lark Landing parcel(s).

Future Roadway Network

It's noted that long range infrastructure improvements in this portion of the County initially included a reconstruction of the SR 99 / Hammett Road interchange. Hammett Road was also to extended east with an expressway section. Caltrans had prepared the various environmental documents, including a Project Study Report (PSR) and an Environmental Impact Report (EIR). Caltrans recently completed extensive improvements along SR 219, east of SR 99. Discussions with Caltrans staff indicated that the SR 99 / Hammett Road interchange improvements will not be constructed in the foreseeable future. Therefore, the analysis of cumulative conditions does not assume that any major improvements will be constructed by Caltrans or the County at the SR 99 / Hammett Road interchange.

Cumulative Base-Line Traffic Volumes (No Project)

The trips associated with the applicable cumulative projects (without Lark Landing) were assigned to the study intersections based on the project locations and types of use. The cumulative project trips were then added to the existing traffic volumes (Figures 2B). The cumulative base-line traffic volumes "without" the Larking Landing development and New Pirrone Road are shown on Figure 6A.

Cumulative Plus Project Traffic Volumes

To evaluate the potential impacts associated with the proposed project the cumulative conditions were analyzed with the addition of the project peak hour trips. The cumulative plus project traffic volumes (without development of the Lark Landing parcels) were derived by adding the project external trips (Figure 4C) to the cumulative base-line volumes on Figure 6A. The cumulative plus project traffic volumes for the "without" Lark Landing development scenario are illustrated on Figure 6B.

Level of Service Analysis

Similar to the analysis conducted for the existing and project conditions, the peak hour LOS operations were evaluated at the study intersections using the Synchro 10 software. The cumulative analysis was conducted both the "without" and "with" the project traffic volumes (Salida Gas Station & C-Store). Primary project access will be provided via the main driveway on Arborwood Drive with secondary access (right turns only) provided on the existing Pirrone Road. The cumulative plus project volumes (Figure 6B) will not exceed the minimum 70% "peak hour" volume signal warrant criteria. Therefore, Arborwood Drive will be stop sign controlled at the existing Pirrone Road. As documented under the existing plus project conditions, the volumes at the Pirrone Road / Arborwood Drive intersection will warrant the installation of a left turn lane on the southbound approach of Pirrone Road. The results of the cumulative base-line and cumulative plus project LOS analysis for the "without" Lark Landing development scenario are presented in Table 6. Copies of the Synchro 10 worksheets are included with the Appendix Material.

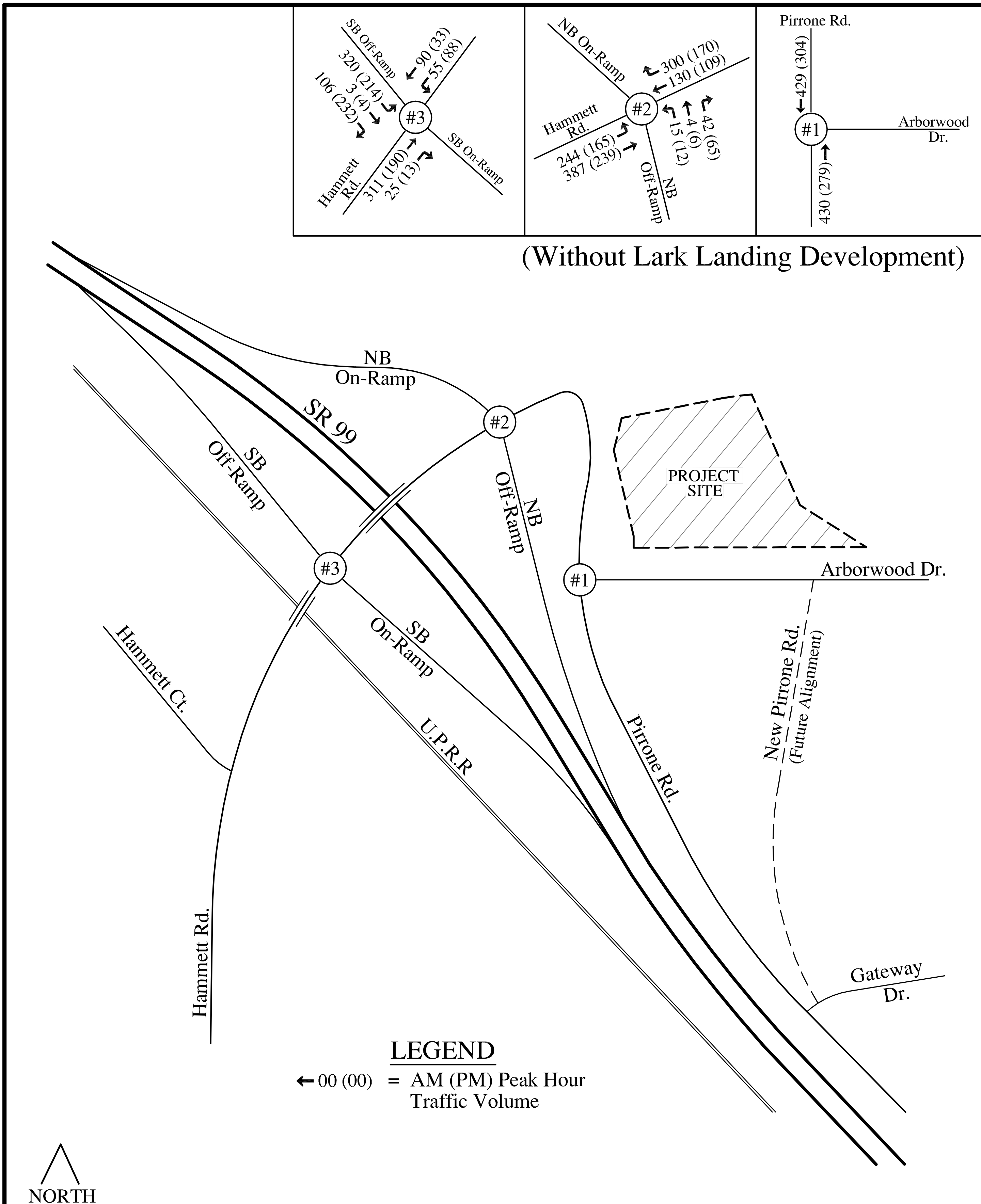

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FIGURE 6A
CUMULATIVE BASE-LINE TRAFFIC VOLUMES

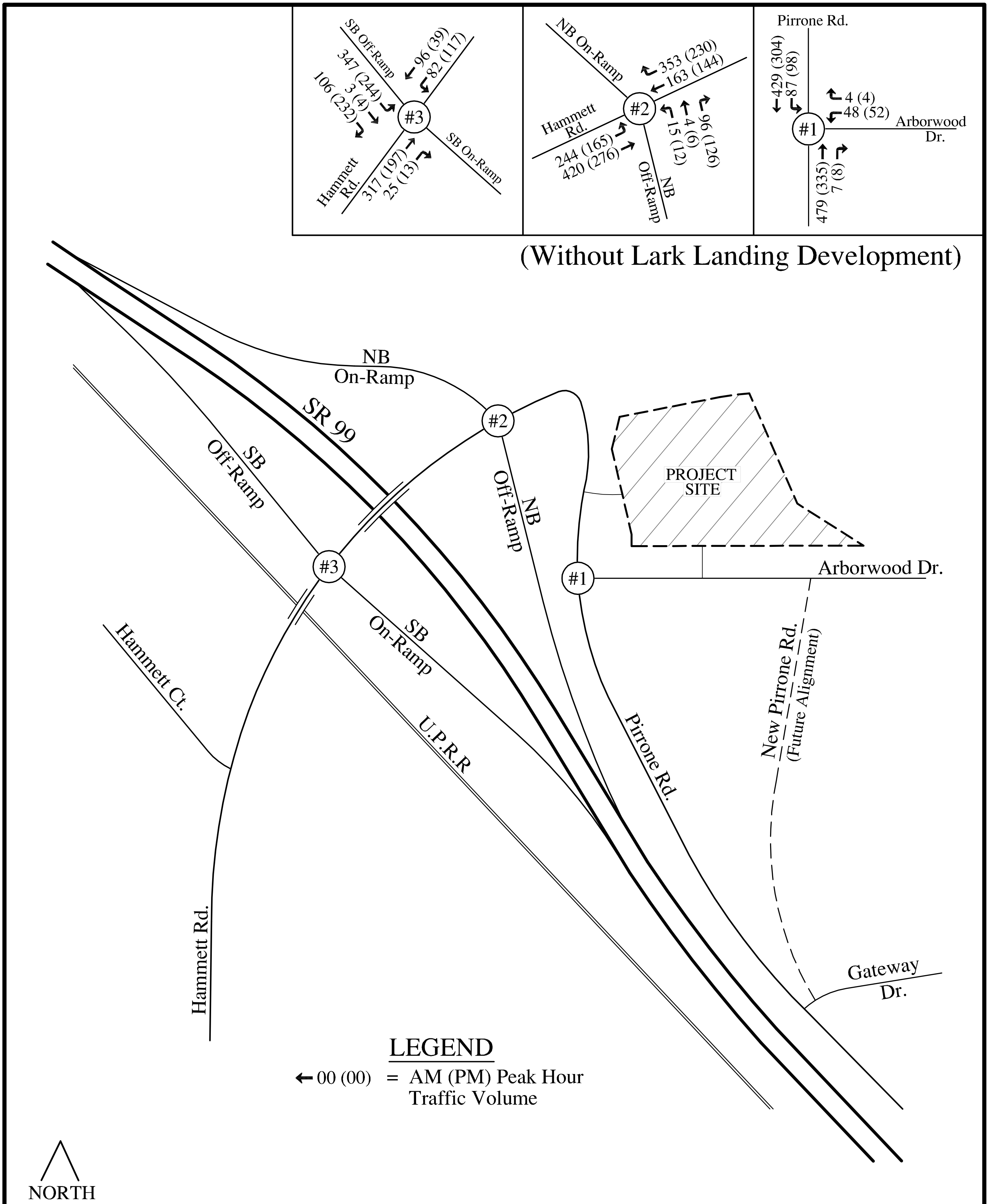

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FIGURE 6B
CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

Table 6 - Cumulative Base-Line and Cumulative Plus Project
Intersection LOS Analysis (Without Lark Landing Development)

Study Intersection	Peak Hour	Average Delay - LOS		Project Impact
		Cumulative Base-Line	Cumulative Plus Project	
Pirrone Rd. (E) / Arborwood Dr.	AM	N/A	2.3 - A	No
WB Approach (a) -			(34.4 - D)	
	PM	N/A	2.4 - A	No
WB Approach (a) -			(19.5 - C)	
SR 99 NB Ramps / Hammett Rd.	AM	33.8 - D	> 50.0 - F	Yes
	PM	11.0 - B	13.1 - B	No
SR 99 SB Ramps / Hammett Rd.	AM	20.3 - C	24.8 - C	No
	PM	12.6 - B	14.4 - B	No

(a) Highest stop controlled approach delay in parenthesis

The data in Table 6 indicates average delays at the Pirrone Road / Arborwood Drive intersection will be within acceptable limits (LOS C or better). However, delays on the Arborwood Drive stop sign controlled approach will be in the LOS D range during the AM peak hour. The provision of a southbound acceleration lane on Pirrone Road for the westbound left turn movement from Arborwood Drive would not significantly reduce delays. As previously noted, the LOS analysis represents peak 15-minute flow conditions and delays in the LOS D range may be considered acceptable during short peak demand periods. Therefore, the installation of a southbound acceleration lane on Pirrone Road is not recommended under the cumulative scenario.

Similar to the existing and project conditions analysis, average delays at the SR 99 Southbound Ramps intersection will remain with acceptable limits. However, delays at the SR 99 Northbound Ramps intersection will continue to exceed the County's LOS C threshold during the AM peak hour. Therefore, the project traffic will have a potentially significant impact at the SR 99 Northbound Ramps intersection during the AM peak hour.

The cumulative plus project analysis estimates a 95th percentile queue of +/-24 vehicles (600') on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps intersection (AM peak hour), exceeding the 570' between the ramp intersections. The cumulative plus project volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria (MUTCD). However, the AM peak hour volumes will only marginally satisfy the minimum 100% signal warrant criteria. Therefore, the installation of signal control at the SR 99 Southbound Ramps intersection is not recommended under the cumulative plus project conditions since average delays will be in the LOS B-C range with the existing all-way stop control. Copies of the traffic signal warrant graphs are included with the Appendix Material.

Cumulative Vehicle Miles Traveled (VMT)

In response to SB 743, Caltrans staff has requested the Project TIA include an estimate of the VMT. Though the County nor Caltrans have any formal VMT analysis standards or "level of significance" criterion, the Synchro 10 software does produce various Measures of Effectiveness (MOE) data for the study network. The MOE includes total travel time, distance traveled and related emissions (CO, NOx & VOC) data. The MOE data was produced for the "cumulative base-line" and "cumulative plus project" scenarios (copies in the Appendix Material). Unfortunately, the MOE data is only provided for the local network analyzed in the Project TIA and not a larger network including the entire County or Tri-County area. The MOE data indicates the project would increase emissions by 50-55% during the peak hours. However, the MOE data does not account for the large percentage of project related pass-by trips (e.g. 80-85% of the trips attracted to a gas station). Therefore, the MOE data is not very useful in addressing VMT related to a specific project. Typically, the VMT analysis is used to develop Transportation Demand Management (TDM) strategies to reduce a project's VMT. The potential TDM strategies to reduce VMT for a gas station are somewhat limited. However, the TDM strategies to reduce the project's VMT could include implementing a rideshare program for employees and/or an incentive based program for employees to use local transit.

Total Cumulative Traffic Demands

As previously discussed (Page 21), due to the location of the Lark Landing parcel(s) and uncertainty of the development potential a separate analysis was performed assuming the future development of these parcels and the completion of the New Pirrone Road. The cumulative projects trip generation estimates (included with Appendix Material) indicate the Lark Landing development could generate up to 16% more AM peak hour trips and 65% more PM peak hour trips than the proposed Salida Gas Station & C-Store project. The trips generated by the Lark Landing parcel(s) where assigned to the study intersections using distribution percentages similar to the proposed project. It was also assumed that the Lark Landing site would have a right-turn-only driveway on New Pirrone Road (no left turn turns). The cumulative plus project volumes (Figure 6B) were then combined with the Lark Landing trips to represent the total cumulative traffic demands. The New Pirrone Road / Arborwood Drive intersection would allow traffic to and from the existing Vizcaya residential subdivision via Vistara Way, which is currently closed. The total cumulative traffic volumes for the "with" Lark Landing development scenario are shown on Figure 7.

Level of Service Analysis

The LOS analysis again conducted using the Synchro 10 software. The total cumulative analysis was conducted assuming the project trips (Figure 4C) and Lark Landing trips will use Arborwood Drive for access to the New Pirrone Road intersection. The total cumulative demands at the New Pirrone Road / Arborwood Drive intersection (Figure 7) will exceed the minimum 70% and 100% (marginally) "peak hour" volume signal warrant criteria. Therefore, the analysis assumes the installation of traffic

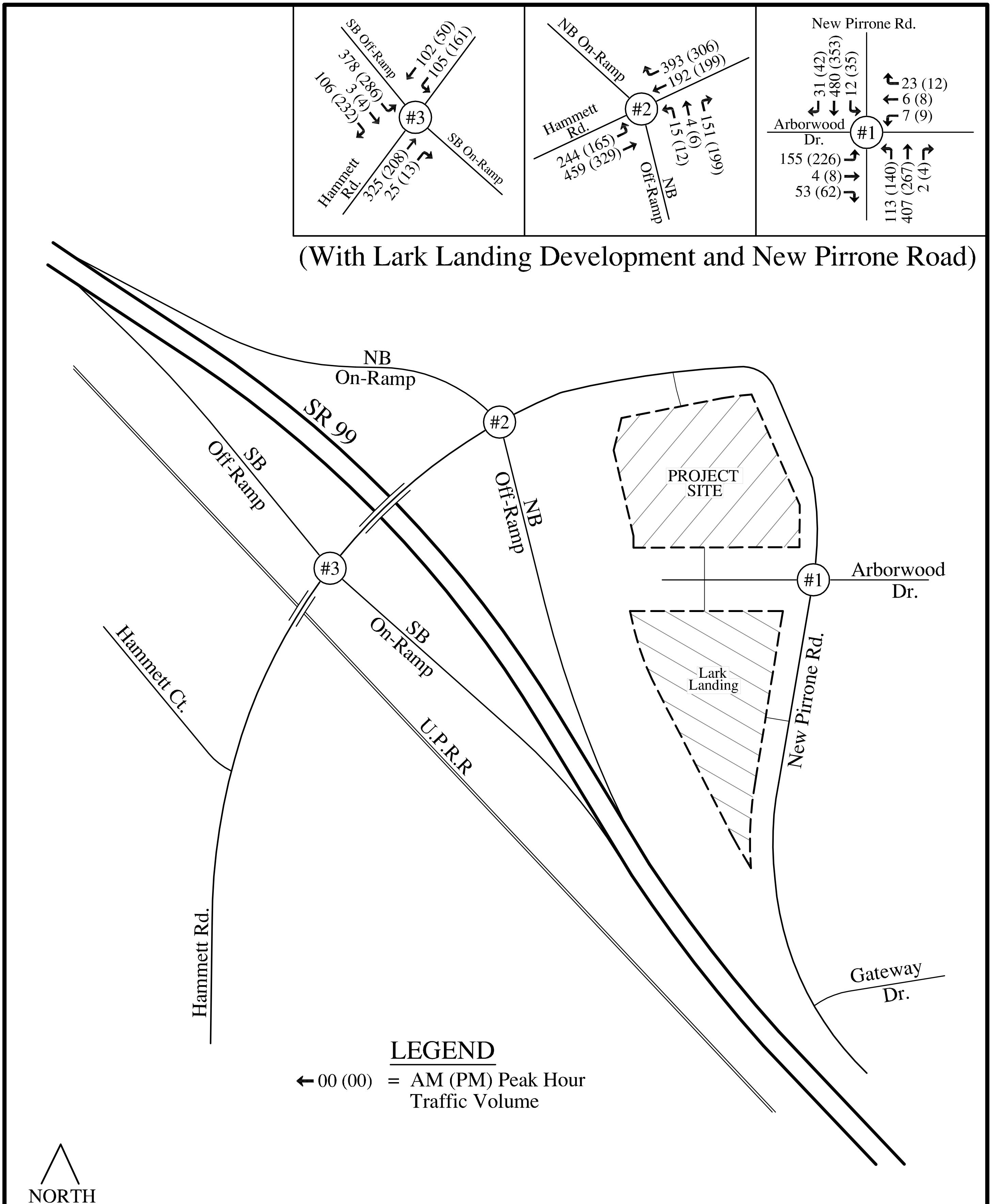

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FIGURE 7
TOTAL CUMULATIVE TRAFFIC VOLUMES

signal control to provide safe access. The analysis also assumes the provision of north-south left turn lanes on New Pirrone Road at Arborwood Drive. The results of the total cumulative LOS analysis for the "with" Lark Landing development scenario are presented in Table 7. Copies of the Synchro 10 worksheets are included with the Appendix Material.

Table 7 - Total Cumulative Intersection LOS Analysis
(With Lark Landing Development)

Study Intersection	Average Delay - LOS	
	AM Peak Hour	PM Peak Hour
New Pirrone Rd. / Arborwood Dr.	10.4 - B	12.9 - B
SR 99 NB Ramps / Hammett Rd.	> 50.0 - F	20.4 - C
SR 99 SB Ramps / Hammett Rd.	32.8 - D	17.9 - C

Average vehicle delays will be within acceptable limits (LOS C or better) at the New Pirrone Road / Arborwood Drive intersection provided the traffic signal improvements are constructed with the development of the Lark Landing parcel(s) and New Pirrone Road improvements. Average delays at both SR 99 ramp intersections will exceed the County's LOS C threshold during the AM peak hour.

The total cumulative LOS analysis estimates a 95th percentile queue of +/-32 vehicles (800') on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps intersection (AM peak hour), exceeding the 570' between the ramp intersections. The total cumulative volumes at both SR 99 ramp intersections will exceed the minimum 70% "peak hour" volume signal warrant criteria (MUTCD). However, the total cumulative volumes will only marginally satisfy the minimum peak hour (100%) signal warrant criteria at the both ramps intersections (depending on number of lanes on Hammett Road and the off ramps). The minor restriping of Hammett Road at the ramp intersection approaches would reduce the potential need for future traffic signal control at both ramp intersections. Also, as stated under the existing conditions analysis Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities. Therefore, average delays in the LOS D range may be considered acceptable during short peak demand periods (30-45 minutes).

Micro-Simulation Model

A micro-simulation model was developed using the total cumulative peak hour traffic volumes and SimTraffic 10 software. The SimTraffic micro-simulation model was run several times to calibrate (seed) the network. The overall peak hour operations appear to work relatively well without significant delays or queuing at the SR 99 ramp intersections. The SimTraffic micro-simulation model did not replicate the eastbound queuing issue on Hammett Road at the SR 99 Northbound ramps intersection during the AM peak hour (95th percentile queue of +/-32 vehicles). Copies of the SimTraffic model data and videos are available upon request.

5.0 MITIGATION MEASURES

The following is an overview of the project impacts analysis and proposed mitigation measures.

Existing Plus Project Conditions

The analysis of existing conditions estimated average vehicle delays in the LOS D range during the AM peak hour at the SR 99 Northbound Ramps / Hammett Road intersection. The LOS analysis also estimated vehicle queues on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps of 16 vehicles (95th percentile queue). Observations of actual traffic operations during the AM peak hour did notice significant eastbound queuing on Hammett Road during peak demand periods (15-20 minutes), which backed up between the north and southbound ramp intersections a couple of times. The analysis of existing plus project conditions did identify a potentially significant project impact at the SR 99 Northbound Ramps intersection during the AM peak hour.

As noted under the total cumulative analysis, the minor restriping of Hammett Road at the ramp intersection approaches would reduce the potential need for future traffic signal control. The restriping would also reduce delays at these “all-way” stop sign controlled intersections. Field measurements recorded a 40’ width on the Hammett Road bridge decks over SR 99 and the UPRR. Currently, the east and westbound approaches have a single 20’ lane at both SR 99 ramp intersections. The proposed project mitigation includes restriping the eastbound approach on Hammett Road at SR 99 Northbound Ramps intersection with one (1) through lane (14’) and an exclusive left turn only lane (12’). This will result in one (1) westbound through lane (14’) west of the intersection. The results of the existing plus project LOS analysis reflecting the proposed mitigation are presented in Table 8. Copies of the Synchro 10 worksheets are included with the Appendix Material.

Table 8 - Existing Plus Project Intersection LOS Analysis Mitigated

Study Intersection	Peak Hour	Average Delay - LOS	
		Without Mitigation	With Mitigation
SR 99 NB Ramps / Hammett Rd.	AM PM	> 50.0 - F 12.9 - B	22.0 - C 11.2 - B

Average delays will be within acceptable limits with the proposed mitigation (LOS C or better). A review of the LOS worksheet indicates the 95th percentile queues on the eastbound approach will also be significantly reduced during the AM peak hour (3 vehicles in the left turn lane and 7 vehicles in the through lane). The existing plus project volumes will exceed the minimum 70% “peak hour” volume signal warrant criteria, but not the minimum 100% signal warrant criteria. Therefore, the installation of signal control is not recommended under the existing plus project conditions since average delays will in the LOS B-C range with the existing all-way stop control. The potential project impact will be reduced to a level of “less than significant” under the existing plus project scenario.

Cumulative Plus Project Conditions

The analysis of cumulative conditions estimated average delays in the LOS F range during the AM peak hour at the SR 99 Northbound Ramps intersection. The analysis also estimated queues on the eastbound approach of Hammett Road at the SR 99 Northbound Ramps of 24 vehicles (95th percentile queue) during the AM peak hour. The cumulative plus project conditions analysis did identify a potentially significant project impact at the SR 99 Northbound Ramps intersection during the AM peak hour.

As discussed under the existing plus project mitigations, the minor restriping of Hammett Road at the ramp intersection approaches would delays at these “all-way” stop sign controlled intersections. The cumulative plus project analysis was performed using the Hammett Road restriping mitigations proposed for the existing plus project scenario (provide exclusive left turn only lane on the eastbound approach at the SR 99 Northbound Ramps intersection). The results of the cumulative plus project LOS analysis reflecting the proposed mitigation are presented in Table 9.

Table 9 - Cumulative Plus Project Intersection LOS Analysis Mitigated
(Without Lark Landing Development)

Study Intersection	Peak Hour	Average Delay - LOS	
		Without Mitigation	With Mitigation
SR 99 NB Ramps / Hammett Rd.	AM PM	> 50.0 - F 13.1 - B	22.0 - C 11.3 - B

Similar to the existing plus project mitigation, average vehicle delays will be within acceptable limits with the proposed mitigation (LOS C or better). The 95th percentile queues on the eastbound approach will also be significantly reduced during the AM peak hour (3 vehicles in the left turn lane and 7 vehicles in the through lane). The cumulative plus project volumes will exceed the minimum 70% “peak hour” volume signal warrant criteria, but not the 100% criteria. Therefore, the installation of signal control is not recommended under the cumulative plus project conditions since average delays will be in the LOS B-C range with the existing all-way stop control. The potential project impact will be reduced to a level of “less than significant” under the cumulative plus project scenario.

Total Cumulative Traffic Conditions

The analysis of total cumulative traffic demands assumes the future development of the Lark Landing parcel(s), which will include the completion of New Pirrone Road and extension of Hammett Road east of SR 99. Due to the potential trip generation and uncertainty of the Lark Landing development, a separate analysis was performed to identify if additional improvements will be required at the SR 99 / Hammett Road interchange to accommodate future peak hour traffic demands. The analysis of total cumulative demands demonstrates that average delays will exceed the County’s LOS C threshold at the both ramp intersections during the AM peak hour.

The total cumulative analysis was again performed assuming the mitigation improvements proposed under the existing and cumulative plus project conditions at the SR 99 Northbound Ramps intersection. The analysis determined that the addition of an exclusive westbound right turn only lane would be required to provide delays within the LOS C range (24.2 seconds / vehicle). This improvement could be accomplished with a minor widening of the north side of Hammett Road east of the intersection.

Similar to the mitigation discussion for the SR 99 Northbound Ramps intersection, the westbound approach at the SR 99 Southbound Ramps intersection could be restriped to provide an exclusive left turn only lane within the existing roadway width. Average delays would still be in the LOS D range (31.1 seconds / vehicle) but may be considered acceptable by Caltrans during short peak demand periods (30-45 minutes). The future installation of traffic signal control should only be considered if it's fully demonstrated that signal control is required to maintain safe access. The evaluation of long range infrastructure improvements at the SR 99 / Hammett Road interchange was beyond the scope defined for the Project TIA.

Regional Transportation Impact Fee (RTIF)

Development projects in Stanislaus County are subject to the RTIF as outlined in the Comprehensive Public Facilities Impact Fee Update Study - Administrative Draft (Sept. 15, 2017). Payment of the project's RTIF provides a fair-share contribution towards the costs associated with the future regional and local infrastructure improvements. Therefore, the project applicant shall negotiate and pay the applicable RTIF as required by Stanislaus County.

END

APPENDIX MATERIAL

- Summary of Traffic Count Data, Traffic Count Data and Queue Data (Feb. 2020)

- HCM Level of Service (LOS) LOS Descriptions

- Synchro 10 “Level of Service” (LOS) and Measure of Effectiveness (MOE) Worksheets

- California MUTCD Traffic Signal Warrant Data and Graphs

- TRB Left Turn Lane Warrant Graph

- Pirrone Road Vehicle Speed Data

- Cumulative Projects List, Location Map and Trip Generation Estimates

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Salida Gas Sta. & C-Store (PLN2019-0079); Stanislaus Co., CA
- NDS Peak Period Traffic Count Balance Summary (Feb. 5, 2020) -

Beginning Time	- SR 99 / Hammett Rd. I/C (Total I/S Vol.) - Pirrone Rd.	NB Ramps	SB Ramps	15-Minute Totals	60-Minute Totals	Only Ramps	
5:30 AM	41	77	69	187		146	
5:45 AM	34	71	64	169		135	
6:00 AM	55	81	51	187		132	
6:15 AM	66	105	85	256	799	190	603
6:30 AM	74	147	119	340	952	266	723
6:45 AM	91	136	115	342	1125	251	839
7:00 AM	120	167	124	411	1349	291	998
7:15 AM	118	172	142	432	1525	314	1122
7:30 AM	143	197	184	524	1709	381	1237
7:45 AM	194	276	244	714	2081	520	1506
8:00 AM	251	322	282	855	2525	604	1819
8:15 AM	265	307	191	763	2856	498	2003
8:30 AM							
8:45 AM							
Totals:	1452	2058	1670				
AM Peak Hr:	**853**	**1102**	**901**	**2856**	**7:30-8:30 AM**	**2003**	
				PHF = 0.835		**PHF = 0.829**	

Beginning Time	Pirrone Rd.	NB Ramps	SB Ramps	15-Minute Totals	60-Minute Totals	Only Ramps	
3:30 PM	211	243	165	619			
3:45 PM	228	269	163	660			
4:00 PM	130	187	173	490		360	
4:15 PM	137	179	183	499	2268	362	
4:30 PM	139	177	165	481	2130	342	
4:45 PM	130	178	165	473	1943	343	1407
5:00 PM	158	195	192	545	1998	387	1434
5:15 PM	148	183	202	533	2032	385	1457
5:30 PM	137	193	209	539	2090	402	1517
5:45 PM	129	169	165	463	2080	334	1508
6:00 PM	121	156	149	426	1961	305	1426
6:15 PM	60	87	117	264	1692	204	1245
Totals:	1728	2216	2048				
PM Peak Hr:	**706**	**878**	**768**	**2268**	**4:15-5:15 PM**		
		(Includes 3:30 - 4:00 PM)		**PHF = 0.916**			
PM Peak Hr:	**573**	**749**	**768**	**2090**	**4:45-5:45 PM**	**1517**	
		(Does Not Includes 3:30 - 4:00 PM)		**PHF = 0.959**		**PHF = 0.943**	

Peak Hour for Individual Study Intersection
Peak Hour for Combined Study Intersections (between 3:30-6:30 PM)
Peak Hour for Combined Study Intersections (between 4:00-6:30 PM)
Peak Hour for Combined Study Intersections (between 4:00-6:30 PM) - Only NB & SB Ramps

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pirrone Rd & Hammett Rd
City: Salida
Control: No Control

Project ID: 20-07042-001
Date: 2/5/2020

Total

NS/EW Streets:	Pirrone Rd				Pirrone Rd				Hammett Rd				Hammett Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	31	0	0	0	0	0	0	0	1	0	9	0	0	0	0	0	41
5:45 AM	25	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	38
6:00 AM	36	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	55
6:15 AM	31	0	0	0	0	0	2	0	0	0	33	0	0	0	0	0	66
6:30 AM	45	2	0	0	0	0	2	0	1	0	24	0	0	0	0	0	74
6:45 AM	51	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	91
7:00 AM	66	0	0	0	0	0	1	0	1	0	52	0	0	0	0	0	120
7:15 AM	69	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	118
7:30 AM	82	0	0	0	0	0	1	0	0	0	60	0	0	0	0	0	143
7:45 AM	75	0	0	0	0	0	0	0	0	0	119	0	0	0	0	0	194
8:00 AM	110	0	0	0	0	0	0	0	0	0	141	0	0	0	0	0	251
8:15 AM	162	0	0	0	0	0	0	0	0	0	103	0	0	0	0	0	265
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	783	2	0	0	0	0	6	0	3	0	662	0	0	0	0	0	1456
APPROACH %'s :	99.75%	0.25%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.45%	0.00%	99.55%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	429	0	0	0	0	0	1	0	0	0	423	0	0	0	0	0	853
PEAK HR FACTOR :	0.662	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.805
	0.662				0.250				0.750								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	127	0	0	0	0	0	0	0	0	0	84	0	0	0	0	0	211
3:45 PM	167	0	0	0	0	1	0	0	0	0	60	0	0	0	0	0	228
4:00 PM	59	1	0	0	0	0	3	0	1	0	66	0	0	0	0	0	130
4:15 PM	51	0	0	0	0	0	2	0	1	0	83	0	0	0	0	0	137
4:30 PM	69	0	0	0	0	0	0	0	1	0	69	0	0	0	0	0	139
4:45 PM	66	0	0	0	0	1	0	0	0	0	63	0	0	0	0	0	130
5:00 PM	74	0	0	0	0	0	0	0	1	0	82	1	0	0	0	0	158
5:15 PM	71	2	0	0	0	0	1	0	0	0	74	0	0	0	0	0	148
5:30 PM	57	1	0	0	0	0	3	0	0	0	76	0	0	0	0	0	137
5:45 PM	62	0	0	0	0	0	0	0	0	0	67	0	0	0	0	0	129
6:00 PM	51	1	0	0	0	1	2	0	2	0	64	0	0	0	0	0	121
6:15 PM	5	0	0	0	0	0	0	0	0	0	55	0	0	0	0	0	60
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	859	5	0	0	0	3	11	0	6	0	843	1	0	0	0	0	1728
APPROACH %'s :	99.42%	0.58%	0.00%	0.00%	0.00%	21.43%	78.57%	0.00%	0.71%	0.00%	99.18%	0.12%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	404	1	0	0	0	1	5	0	2	0	293	0	0	0	0	0	706
PEAK HR FACTOR :	0.605	0.250	0.000	0.000	0.000	0.250	0.417	0.000	0.500	0.000	0.872	0.000	0.000	0.000	0.000	0.000	0.774
	0.606				0.500				0.878								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pirrone Rd & Hammett Rd
City: Salida
Control: No Control

Project ID: 20-07042-001
Date: 2/5/2020

HT

NS/EW Streets:	Pirrone Rd				Pirrone Rd				Hammett Rd				Hammett Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
PEAK HR FACTOR :	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500
	0.750								0.250								

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	6
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.750
									0.750								

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 99 NB Ramps & Hammett Rd
City: Salida
Control: 3-Way Stop(NB/EB/WB)

Project ID: 20-07042-002
Date: 2/5/2020

Total

NS/EW Streets:	SR 99 NB Ramps				SR 99 NB Ramps				Hammett Rd				Hammett Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	2	0	4	0	0	0	0	0	32	6	0	0	0	10	23	0	77
5:45 AM	2	1	3	0	0	0	0	0	31	9	0	0	0	6	19	0	71
6:00 AM	2	0	10	0	0	0	0	0	25	9	0	0	0	6	29	0	81
6:15 AM	2	3	14	0	0	0	0	0	33	19	0	0	0	6	28	0	105
6:30 AM	3	3	13	0	0	0	0	0	68	13	0	0	0	12	35	0	147
6:45 AM	5	2	13	0	0	0	0	0	41	25	0	0	0	16	34	0	136
7:00 AM	2	1	22	0	0	0	0	0	43	31	0	0	0	26	42	0	167
7:15 AM	8	1	11	0	0	0	0	0	45	38	0	0	0	24	44	1	172
7:30 AM	2	0	5	0	0	0	0	0	55	52	0	0	0	30	53	0	197
7:45 AM	5	2	16	0	0	0	0	0	75	103	0	0	0	30	45	0	276
8:00 AM	5	1	11	0	0	0	0	0	68	130	0	0	0	36	71	0	322
8:15 AM	3	1	10	0	0	0	0	0	43	89	0	0	0	34	127	0	307
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	15	132	0	0	0	0	0	559	524	0	0	0	236	550	1	2058
APPROACH %'s :	21.81%	7.98%	70.21%	0.00%					51.62%	48.38%	0.00%	0.00%	0.00%	29.99%	69.89%	0.13%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	15	4	42	0	0	0	0	0	241	374	0	0	0	130	296	0	1102
PEAK HR FACTOR :	0.750	0.500	0.656	0.000	0.000	0.000	0.000	0.000	0.803	0.719	0.000	0.000	0.000	0.903	0.583	0.000	0.856
	0.663								0.777				0.661				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	5	1	14	0	0	0	0	0	31	71	0	0	0	16	105	0	243
3:45 PM	6	1	19	0	0	0	0	0	37	38	0	0	0	28	140	0	269
4:00 PM	3	2	9	0	0	0	0	0	47	60	0	0	0	28	38	0	187
4:15 PM	4	1	14	0	0	0	0	0	38	68	0	0	0	18	36	0	179
4:30 PM	6	1	21	0	0	0	0	0	32	48	0	0	0	27	42	0	177
4:45 PM	2	3	19	0	0	0	0	0	43	45	0	0	0	27	39	0	178
5:00 PM	4	0	26	0	0	0	0	0	35	58	0	0	0	35	37	0	195
5:15 PM	4	2	10	0	0	0	0	0	32	63	0	0	0	29	43	0	183
5:30 PM	2	1	10	0	0	0	0	0	54	66	0	0	0	17	43	0	193
5:45 PM	4	0	9	0	0	0	0	0	34	60	0	0	0	20	42	0	169
6:00 PM	3	2	14	0	0	0	0	0	32	51	0	0	0	22	32	0	156
6:15 PM	3	0	13	0	0	0	0	0	23	43	0	0	0	2	3	0	87
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	46	14	178	0	0	0	0	0	438	671	0	0	0	269	600	0	2216
APPROACH %'s :	19.33%	5.88%	74.79%	0.00%					39.50%	60.50%	0.00%	0.00%	0.00%	30.96%	69.04%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	18	5	56	0	0	0	0	0	153	237	0	0	0	90	319	0	878
PEAK HR FACTOR :	0.750	0.625	0.737	0.000	0.000	0.000	0.000	0.000	0.814	0.835	0.000	0.000	0.000	0.804	0.570	0.000	0.816
	0.760								0.911				0.609				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 99 NB Ramps & Hammett Rd
City: Salida
Control: 3-Way Stop(NB/EB/WB)

Project ID: 20-07042-002
Date: 2/5/2020

HT

NS/EW Streets:	SR 99 NB Ramps				SR 99 NB Ramps				Hammett Rd				Hammett Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 AM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
6:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	1	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	5
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	10	1	0	0	0	0	0	9	0	0	0	0	1	3	0	28
APPROACH %'s :	26.67%	66.67%	6.67%	0.00%					100.00%	0.00%	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	3	1	0	0	0	0	0	3	0	0	0	0	1	2	0	11
PEAK HR FACTOR :	0.250	0.750	0.250	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.550
	0.417								0.375				0.750				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
4:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	4	1	0	0	0	0	0	6	3	0	0	0	2	0	0	17
APPROACH %'s :	16.67%	66.67%	16.67%	0.00%					66.67%	33.33%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	0	3	3	0	0	0	0	0	0	8
PEAK HR FACTOR :	0.00	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.667
	0.500								0.750								

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 99 SB Ramps & Hammett Rd
City: Salida
Control: 3-Way Stop(SB/EB/WB)

Project ID: 20-07042-003
Date: 2/5/2020

Total

NS/EW Streets:	SR 99 SB Ramps				SR 99 SB Ramps				Hammett Rd				Hammett Rd				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	0	0	0	0	6	3	10	0	0	31	7	0	8	4	0	0	69
5:45 AM	0	0	0	0	11	0	14	0	0	31	0	0	5	3	0	0	64
6:00 AM	0	0	0	0	9	1	8	0	0	24	1	0	5	3	0	0	51
6:15 AM	0	0	0	0	14	0	15	0	0	41	7	0	5	3	0	0	85
6:30 AM	0	0	0	0	10	0	21	0	0	70	3	0	10	5	0	0	119
6:45 AM	0	0	0	0	22	1	24	0	0	45	2	0	13	8	0	0	115
7:00 AM	0	0	0	0	24	0	23	0	0	48	2	0	14	13	0	0	124
7:15 AM	0	0	0	0	33	2	20	0	0	53	4	0	22	8	0	0	142
7:30 AM	0	0	0	0	57	1	29	0	0	58	7	0	21	11	0	0	184
7:45 AM	0	0	0	0	81	2	26	0	0	95	5	0	11	24	0	0	244
8:00 AM	0	0	0	0	112	0	27	0	0	92	8	0	12	31	0	0	282
8:15 AM	0	0	0	0	61	0	24	0	0	66	5	0	11	24	0	0	191
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	440	10	241	0	0	654	51	0	137	137	0	0	1670
APPROACH %'s :					63.68%	1.45%	34.88%	0.00%	0.00%	92.77%	7.23%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	311	3	106	0	0	311	25	0	55	90	0	0	901
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.694	0.375	0.914	0.000	0.000	0.818	0.781	0.000	0.655	0.726	0.000	0.000	0.799
					0.755				0.840				0.843				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	61	0	38	0	0	41	4	0	13	8	0	0	165
3:45 PM	0	0	0	0	37	0	45	0	0	41	7	0	15	18	0	0	163
4:00 PM	0	0	0	0	49	1	34	0	0	54	4	0	16	15	0	0	173
4:15 PM	0	0	0	0	56	2	49	0	0	50	5	0	11	10	0	0	183
4:30 PM	0	0	0	0	38	1	45	0	0	46	2	0	17	16	0	0	165
4:45 PM	0	0	0	0	40	0	52	0	0	43	1	0	21	8	0	0	165
5:00 PM	0	0	0	0	57	1	56	0	0	38	2	0	27	11	0	0	192
5:15 PM	0	0	0	0	55	2	64	0	0	43	4	0	27	7	0	0	202
5:30 PM	0	0	0	0	56	1	60	0	0	66	6	0	13	7	0	0	209
5:45 PM	0	0	0	0	52	1	47	0	0	40	1	0	12	12	0	0	165
6:00 PM	0	0	0	0	45	0	42	0	0	36	1	0	16	9	0	0	149
6:15 PM	0	0	0	0	39	1	41	0	0	27	4	0	2	3	0	0	117
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	585	10	573	0	0	525	41	0	190	124	0	0	2048
APPROACH %'s :					50.09%	0.86%	49.06%	0.00%	0.00%	92.76%	7.24%	0.00%	60.51%	39.49%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	208	4	232	0	0	190	13	0	88	33	0	0	768
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.912	0.500	0.906	0.000	0.000	0.720	0.542	0.000	0.815	0.750	0.000	0.000	0.919
					0.917				0.705				0.796				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 99 SB Ramps & Hammett Rd
City: Salida
Control: 3-Way Stop(SB/EB/WB)

Project ID: 20-07042-003
Date: 2/5/2020

HT

NS/EW Streets:	SR 99 SB Ramps				SR 99 SB Ramps				Hammett Rd				Hammett Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	2	1	0	0	1	0	0	0	2	0	0	6
7:30 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	6	4	0	0	9	4	0	0	5	0	0	28
APPROACH %'s :					0.00%	60.00%	40.00%	0.00%	0.00%	69.23%	30.77%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	1	0	0	3	3	0	0	2	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.375	0.250	0.000	0.000	0.250	0.000	0.000	0.625
					0.500				0.500				0.250				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	4
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	1	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	4	7	0	0	6	0	0	2	1	0	0	22
APPROACH %'s :					15.38%	30.77%	53.85%	0.00%	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	2	4	0	0	2	0	0	1	1	0	0	10
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.500	0.000	0.000	0.250	0.250	0.000	0.000	0.625
					0.500				0.500				0.500				

Prepared by National Data & Surveying Services

QUEUE STUDY

Location: Hammett Rd WB Q **Date:** 2/5/2020

City: Salida, CA **Day:** Wednesday

AM		PM	
Time	Queue	Time	Queue
5:30 AM	2	3:30 PM	5
5:45 AM	0	3:45 PM	10
6:00 AM	0	4:00 PM	2
6:15 AM	2	4:15 PM	4
6:30 AM	2	4:30 PM	4
6:45 AM	2	4:45 PM	4
7:00 AM	3	5:00 PM	5
7:15 AM	4	5:15 PM	9
7:30 AM	3	5:30 PM	3
7:45 AM	3	5:45 PM	5
8:00 AM	7	6:00 PM	4
8:15 AM	7	6:15 PM	2

The ability of a highway system to carry traffic is expressed in terms of it's "Service Level" at critical locations, usually intersections. Service levels are defined as follows:

"LOS A" Conditions primarily describe free-flowing operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.

"LOS B" Conditions describe reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.

"LOS C" Conditions describe stable operations. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.

"LOS D" Conditions describe less stable operations in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.

"LOS E" Conditions describe unstable operations and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.

"LOS F" Conditions describe flow at extreme low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity (V/C) ratio greater than 1.0.

831 C Street - Hollister, CA 95023
(831) 638-9260 / (805) 644-9260

Intersection	
Intersection Delay, s/veh	33.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	378	0	0	130	296	4	42	0	0
Future Vol, veh/h	244	378	0	0	130	296	4	42	0	0
Peak Hour Factor	0.84	0.84	1.00	1.00	0.84	0.84	0.84	0.84	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	290	450	0	0	155	352	5	50	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	48.5	15.4
HCM LOS	E	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	31%	39%	0%
Vol Thru, %	0%	61%	31%
Vol Right, %	69%	0%	69%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	622	426
LT Vol	19	244	0
Through Vol	0	378	130
RT Vol	42	0	296
Lane Flow Rate	73	740	507
Geometry Grp	1	1	1
Degree of Util (X)	0.129	0.975	0.639
Departure Headway (Hd)	6.389	4.741	4.538
Convergence, Y/N	Yes	Yes	Yes
Cap	564	755	786
Service Time	4.389	2.818	2.615
HCM Lane V/C Ratio	0.129	0.98	0.645
HCM Control Delay	10.3	48.5	15.4
HCM Lane LOS	B	E	C
HCM 95th-tile Q	0.4	15.4	4.7

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	233	0	0	109	162	6	65	0	0
Future Vol, veh/h	165	233	0	0	109	162	6	65	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	243	0	0	114	169	6	68	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	12.3	9.3
HCM LOS	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	22%	41%	0%
Vol Thru, %	0%	59%	40%
Vol Right, %	78%	0%	60%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	83	398	271
LT Vol	18	165	0
Through Vol	0	233	109
RT Vol	65	0	162
Lane Flow Rate	86	415	282
Geometry Grp	1	1	1
Degree of Util (X)	0.12	0.518	0.331
Departure Headway (Hd)	4.976	4.497	4.217
Convergence, Y/N	Yes	Yes	Yes
Cap	718	800	853
Service Time	3.026	2.53	2.25
HCM Lane V/C Ratio	0.12	0.519	0.331
HCM Control Delay	8.7	12.3	9.3
HCM Lane LOS	A	B	A
HCM 95th-tile Q	0.4	3	1.5

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	311	3	106	0	311	25	55	90	0
Future Vol, veh/h	0	0	0	311	3	106	0	311	25	55	90	0
Peak Hour Factor	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.84	0.84	0.84	0.84	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	370	4	126	0	370	30	65	107	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	24.8	18	11.8
HCM LOS	C	C	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	74%	38%
Vol Thru, %	93%	1%	62%
Vol Right, %	7%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	336	420	145
LT Vol	0	311	55
Through Vol	311	3	90
RT Vol	25	106	0
Lane Flow Rate	400	500	173
Geometry Grp	1	1	1
Degree of Util (X)	0.63	0.77	0.296
Departure Headway (Hd)	5.673	5.543	6.171
Convergence, Y/N	Yes	Yes	Yes
Cap	632	650	578
Service Time	3.734	3.595	4.245
HCM Lane V/C Ratio	0.633	0.769	0.299
HCM Control Delay	18	24.8	11.8
HCM Lane LOS	C	C	B
HCM 95th-tile Q	4.4	7.2	1.2

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	208	4	232	0	190	13	88	33	0
Future Vol, veh/h	0	0	0	208	4	232	0	190	13	88	33	0
Peak Hour Factor	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.96	1.00
Heavy Vehicles, %	0	0	0	1	25	2	0	1	1	1	3	0
Mvmt Flow	0	0	0	217	4	242	0	198	14	92	34	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	14	10.5	9.9
HCM LOS	B	B	A

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	47%	73%
Vol Thru, %	94%	1%	27%
Vol Right, %	6%	52%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	203	444	121
LT Vol	0	208	88
Through Vol	190	4	33
RT Vol	13	232	0
Lane Flow Rate	211	462	126
Geometry Grp	1	1	1
Degree of Util (X)	0.302	0.586	0.194
Departure Headway (Hd)	5.148	4.558	5.548
Convergence, Y/N	Yes	Yes	Yes
Cap	689	786	650
Service Time	3.244	2.624	3.548
HCM Lane V/C Ratio	0.306	0.588	0.194
HCM Control Delay	10.5	14	9.9
HCM Lane LOS	B	B	A
HCM 95th-tile Q	1.3	3.9	0.7

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	4	475	7	87	420
Future Vol, veh/h	48	4	475	7	87	420
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	84	92	92	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	4	565	8	95	500

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1259	569	0	0	573	0
Stage 1	569	-	-	-	-	-
Stage 2	690	-	-	-	-	-
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	188	522	-	-	1000	-
Stage 1	566	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	170	522	-	-	1000	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.1	0	1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	179	1000	-
HCM Lane V/C Ratio	-	-	0.316	0.095	-
HCM Control Delay (s)	-	-	34.1	9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.3	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	4	327	8	98	298
Future Vol, veh/h	52	4	327	8	98	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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	4	341	8	102	310

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	859	345	0	0	349	0
Stage 1	345	-	-	-	-	-
Stage 2	514	-	-	-	-	-
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	327	698	-	-	1210	-
Stage 1	717	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	300	698	-	-	1210	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	550	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	313	1210	-
HCM Lane V/C Ratio	-	-	0.186	0.084	-
HCM Control Delay (s)	-	-	19.1	8.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-

Intersection	
Intersection Delay, s/veh	61.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	411	0	0	163	349	4	96	0	0
Future Vol, veh/h	244	411	0	0	163	349	4	96	0	0
Peak Hour Factor	0.84	0.84	1.00	1.00	0.84	0.84	0.84	0.84	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	290	489	0	0	194	415	5	114	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	97.5	26.1
HCM LOS	F	D

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	17%	37%	0%
Vol Thru, %	0%	63%	32%
Vol Right, %	83%	0%	68%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	115	655	512
LT Vol	19	244	0
Through Vol	0	411	163
RT Vol	96	0	349
Lane Flow Rate	137	780	610
Geometry Grp	1	1	1
Degree of Util (X)	0.241	1.132	0.813
Departure Headway (Hd)	6.71	5.228	5.036
Convergence, Y/N	Yes	Yes	Yes
Cap	538	702	725
Service Time	4.71	3.228	3.036
HCM Lane V/C Ratio	0.255	1.111	0.841
HCM Control Delay	11.8	97.5	26.1
HCM Lane LOS	B	F	D
HCM 95th-tile Q	0.9	23.7	8.6

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	270	0	0	144	222	6	126	0	0
Future Vol, veh/h	165	270	0	0	144	222	6	126	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	281	0	0	150	231	6	131	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	15	11.5
HCM LOS	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	12%	38%	0%
Vol Thru, %	0%	62%	39%
Vol Right, %	88%	0%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	144	435	366
LT Vol	18	165	0
Through Vol	0	270	144
RT Vol	126	0	222
Lane Flow Rate	150	453	381
Geometry Grp	1	1	1
Degree of Util (X)	0.218	0.603	0.473
Departure Headway (Hd)	5.22	4.792	4.469
Convergence, Y/N	Yes	Yes	Yes
Cap	680	748	801
Service Time	3.315	2.861	2.538
HCM Lane V/C Ratio	0.221	0.606	0.476
HCM Control Delay	9.8	15	11.5
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.8	4.1	2.6

Intersection	
Intersection Delay, s/veh	24.6
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations					✣			↱			↰	
Traffic Vol, veh/h	0	0	0	338	3	106	0	317	25	82	96	0
Future Vol, veh/h	0	0	0	338	3	106	0	317	25	82	96	0
Peak Hour Factor	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.84	0.84	0.84	0.84	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	402	4	126	0	377	30	98	114	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	32.5	20.2	13.3
HCM LOS	D	C	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	76%	46%
Vol Thru, %	93%	1%	54%
Vol Right, %	7%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	342	447	178
LT Vol	0	338	82
Through Vol	317	3	96
RT Vol	25	106	0
Lane Flow Rate	407	532	212
Geometry Grp	1	1	1
Degree of Util (X)	0.668	0.846	0.375
Departure Headway (Hd)	5.906	5.724	6.379
Convergence, Y/N	Yes	Yes	Yes
Cap	607	628	559
Service Time	3.989	3.792	4.478
HCM Lane V/C Ratio	0.671	0.847	0.379
HCM Control Delay	20.2	32.5	13.3
HCM Lane LOS	C	D	B
HCM 95th-tile Q	5	9.3	1.7

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	238	4	232	0	197	13	117	39	0
Future Vol, veh/h	0	0	0	238	4	232	0	197	13	117	39	0
Peak Hour Factor	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.96	1.00
Heavy Vehicles, %	0	0	0	1	25	2	0	1	1	1	3	0
Mvmt Flow	0	0	0	248	4	242	0	205	14	122	41	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	16.6	11.1	10.7
HCM LOS	C	B	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	50%	75%
Vol Thru, %	94%	1%	25%
Vol Right, %	6%	49%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	210	474	156
LT Vol	0	238	117
Through Vol	197	4	39
RT Vol	13	232	0
Lane Flow Rate	219	494	162
Geometry Grp	1	1	1
Degree of Util (X)	0.33	0.66	0.257
Departure Headway (Hd)	5.433	4.811	5.702
Convergence, Y/N	Yes	Yes	Yes
Cap	661	755	631
Service Time	3.468	2.811	3.739
HCM Lane V/C Ratio	0.331	0.654	0.257
HCM Control Delay	11.1	16.6	10.7
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.4	5	1

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	411	0	0	163	349	4	96	0	0
Future Vol, veh/h	244	411	0	0	163	349	4	96	0	0
Peak Hour Factor	0.84	0.84	1.00	1.00	0.84	0.84	0.84	0.84	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	290	489	0	0	194	415	5	114	0	0
Number of Lanes	1	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	2
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	20.1	26.9
HCM LOS	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	17%	100%	0%	0%
Vol Thru, %	0%	0%	100%	32%
Vol Right, %	83%	0%	0%	68%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	244	411	512
LT Vol	19	244	0	0
Through Vol	0	0	411	163
RT Vol	96	0	0	349
Lane Flow Rate	137	290	489	610
Geometry Grp	2	7	7	5
Degree of Util (X)	0.241	0.489	0.755	0.829
Departure Headway (Hd)	6.328	6.063	5.557	4.894
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	567	595	651	744
Service Time	4.37	3.793	3.287	2.894
HCM Lane V/C Ratio	0.242	0.487	0.751	0.82
HCM Control Delay	11.4	14.5	23.4	26.9
HCM Lane LOS	B	B	C	D
HCM 95th-tile Q	0.9	2.7	6.9	9.2

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	270	0	0	144	222	6	126	0	0
Future Vol, veh/h	165	270	0	0	144	222	6	126	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	281	0	0	150	231	6	131	0	0
Number of Lanes	1	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	2
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	11.2	11.8
HCM LOS	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	12%	100%	0%	0%
Vol Thru, %	0%	0%	100%	39%
Vol Right, %	88%	0%	0%	61%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	165	270	366
LT Vol	18	165	0	0
Through Vol	0	0	270	144
RT Vol	126	0	0	222
Lane Flow Rate	150	172	281	381
Geometry Grp	2	7	7	5
Degree of Util (X)	0.216	0.273	0.407	0.481
Departure Headway (Hd)	5.182	5.716	5.212	4.539
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	687	626	686	789
Service Time	3.262	3.484	2.98	2.601
HCM Lane V/C Ratio	0.218	0.275	0.41	0.483
HCM Control Delay	9.7	10.6	11.6	11.8
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.8	1.1	2	2.6

Intersection	
Intersection Delay, s/veh	33.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	387	0	0	130	300	4	42	0	0
Future Vol, veh/h	244	387	0	0	130	300	4	42	0	0
Peak Hour Factor	0.85	0.85	1.00	1.00	0.85	0.85	0.85	0.85	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	287	455	0	0	153	353	5	49	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	48.7	15.3
HCM LOS	E	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	31%	39%	0%
Vol Thru, %	0%	61%	30%
Vol Right, %	69%	0%	70%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	631	430
LT Vol	19	244	0
Through Vol	0	387	130
RT Vol	42	0	300
Lane Flow Rate	72	742	506
Geometry Grp	1	1	1
Degree of Util (X)	0.127	0.976	0.637
Departure Headway (Hd)	6.388	4.734	4.534
Convergence, Y/N	Yes	Yes	Yes
Cap	565	757	789
Service Time	4.388	2.81	2.61
HCM Lane V/C Ratio	0.127	0.98	0.641
HCM Control Delay	10.3	48.7	15.3
HCM Lane LOS	B	E	C
HCM 95th-tile Q	0.4	15.5	4.7

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	239	0	0	109	170	6	65	0	0
Future Vol, veh/h	165	239	0	0	109	170	6	65	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	249	0	0	114	177	6	68	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	12.5	9.4
HCM LOS	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	22%	41%	0%
Vol Thru, %	0%	59%	39%
Vol Right, %	78%	0%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	83	404	279
LT Vol	18	165	0
Through Vol	0	239	109
RT Vol	65	0	170
Lane Flow Rate	86	421	291
Geometry Grp	1	1	1
Degree of Util (X)	0.12	0.527	0.341
Departure Headway (Hd)	5.004	4.506	4.22
Convergence, Y/N	Yes	Yes	Yes
Cap	713	800	852
Service Time	3.057	2.537	2.251
HCM Lane V/C Ratio	0.121	0.526	0.342
HCM Control Delay	8.7	12.5	9.4
HCM Lane LOS	A	B	A
HCM 95th-tile Q	0.4	3.1	1.5

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations					✣			↱			↰	
Traffic Vol, veh/h	0	0	0	320	3	106	0	311	25	55	90	0
Future Vol, veh/h	0	0	0	320	3	106	0	311	25	55	90	0
Peak Hour Factor	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.85	0.85	0.85	0.85	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	376	4	125	0	366	29	65	106	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	25.1	17.8	11.8
HCM LOS	D	C	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	75%	38%
Vol Thru, %	93%	1%	62%
Vol Right, %	7%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	336	429	145
LT Vol	0	320	55
Through Vol	311	3	90
RT Vol	25	106	0
Lane Flow Rate	395	505	171
Geometry Grp	1	1	1
Degree of Util (X)	0.624	0.775	0.293
Departure Headway (Hd)	5.68	5.53	6.174
Convergence, Y/N	Yes	Yes	Yes
Cap	632	651	578
Service Time	3.741	3.584	4.249
HCM Lane V/C Ratio	0.625	0.776	0.296
HCM Control Delay	17.8	25.1	11.8
HCM Lane LOS	C	D	B
HCM 95th-tile Q	4.3	7.4	1.2

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	214	4	232	0	190	13	88	33	0
Future Vol, veh/h	0	0	0	214	4	232	0	190	13	88	33	0
Peak Hour Factor	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.96	1.00
Heavy Vehicles, %	0	0	0	1	25	2	0	1	1	1	3	0
Mvmt Flow	0	0	0	223	4	242	0	198	14	92	34	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	14.2	10.5	9.9
HCM LOS	B	B	A

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	48%	73%
Vol Thru, %	94%	1%	27%
Vol Right, %	6%	52%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	203	450	121
LT Vol	0	214	88
Through Vol	190	4	33
RT Vol	13	232	0
Lane Flow Rate	211	469	126
Geometry Grp	1	1	1
Degree of Util (X)	0.303	0.595	0.195
Departure Headway (Hd)	5.165	4.567	5.568
Convergence, Y/N	Yes	Yes	Yes
Cap	687	783	648
Service Time	3.264	2.633	3.568
HCM Lane V/C Ratio	0.307	0.599	0.194
HCM Control Delay	10.5	14.2	9.9
HCM Lane LOS	B	B	A
HCM 95th-tile Q	1.3	4	0.7

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	4	479	7	87	429
Future Vol, veh/h	48	4	479	7	87	429
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	85	92	92	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	4	564	8	95	505

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1263	568	0	0	572	0
Stage 1	568	-	-	-	-	-
Stage 2	695	-	-	-	-	-
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	187	522	-	-	1001	-
Stage 1	567	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	522	-	-	1001	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	448	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.4	0	1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	178	1001	-
HCM Lane V/C Ratio	-	-	0.318	0.094	-
HCM Control Delay (s)	-	-	34.4	9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.3	-

Intersection						
Int Delay, s/veh	2.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	4	335	8	98	304
Future Vol, veh/h	52	4	335	8	98	304
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	4	349	8	102	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	874	353	0	0	357	0
Stage 1	353	-	-	-	-	-
Stage 2	521	-	-	-	-	-
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	320	691	-	-	1202	-
Stage 1	711	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	293	691	-	-	1202	-
Mov Cap-2 Maneuver	293	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	545	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	306	1202	-
HCM Lane V/C Ratio	-	-	0.191	0.085	-
HCM Control Delay (s)	-	-	19.5	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-

Intersection	
Intersection Delay, s/veh	61.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	420	0	0	163	353	4	96	0	0
Future Vol, veh/h	244	420	0	0	163	353	4	96	0	0
Peak Hour Factor	0.85	0.85	0.85	1.00	0.85	0.85	0.85	0.85	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	287	494	0	0	192	415	5	113	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	97.4	25.7
HCM LOS	F	D

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	17%	37%	0%
Vol Thru, %	0%	63%	32%
Vol Right, %	83%	0%	68%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	115	664	516
LT Vol	19	244	0
Through Vol	0	420	163
RT Vol	96	0	353
Lane Flow Rate	135	781	607
Geometry Grp	1	1	1
Degree of Util (X)	0.238	1.132	0.809
Departure Headway (Hd)	6.705	5.217	5.027
Convergence, Y/N	Yes	Yes	Yes
Cap	538	703	722
Service Time	4.705	3.217	3.027
HCM Lane V/C Ratio	0.251	1.111	0.841
HCM Control Delay	11.8	97.4	25.7
HCM Lane LOS	B	F	D
HCM 95th-tile Q	0.9	23.7	8.5

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	276	0	0	144	230	6	126	0	0
Future Vol, veh/h	165	276	0	0	144	230	6	126	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	288	0	0	150	240	6	131	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	15.3	11.7
HCM LOS	C	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	12%	37%	0%
Vol Thru, %	0%	63%	39%
Vol Right, %	88%	0%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	144	441	374
LT Vol	18	165	0
Through Vol	0	276	144
RT Vol	126	0	230
Lane Flow Rate	150	459	390
Geometry Grp	1	1	1
Degree of Util (X)	0.223	0.612	0.484
Departure Headway (Hd)	5.347	4.799	4.471
Convergence, Y/N	Yes	Yes	Yes
Cap	675	744	799
Service Time	3.347	2.881	2.552
HCM Lane V/C Ratio	0.222	0.617	0.488
HCM Control Delay	9.9	15.3	11.7
HCM Lane LOS	A	C	B
HCM 95th-tile Q	0.8	4.2	2.7

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations					✣			↱			↰	
Traffic Vol, veh/h	0	0	0	347	3	106	0	317	25	82	96	0
Future Vol, veh/h	0	0	0	347	3	106	0	317	25	82	96	0
Peak Hour Factor	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.85	0.85	0.85	0.85	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	408	4	125	0	373	29	96	113	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	33	19.9	13.3
HCM LOS	D	C	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	76%	46%
Vol Thru, %	93%	1%	54%
Vol Right, %	7%	23%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	342	456	178
LT Vol	0	347	82
Through Vol	317	3	96
RT Vol	25	106	0
Lane Flow Rate	402	536	209
Geometry Grp	1	1	1
Degree of Util (X)	0.661	0.851	0.371
Departure Headway (Hd)	5.912	5.71	6.382
Convergence, Y/N	Yes	Yes	Yes
Cap	608	633	559
Service Time	3.995	3.778	4.481
HCM Lane V/C Ratio	0.661	0.847	0.374
HCM Control Delay	19.9	33	13.3
HCM Lane LOS	C	D	B
HCM 95th-tile Q	4.9	9.4	1.7

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	244	4	232	0	197	13	117	39	0
Future Vol, veh/h	0	0	0	244	4	232	0	197	13	117	39	0
Peak Hour Factor	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.96	1.00
Heavy Vehicles, %	0	0	0	1	25	2	0	1	1	1	3	0
Mvmt Flow	0	0	0	254	4	242	0	205	14	122	41	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17	11.2	10.7
HCM LOS	C	B	B

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	51%	75%
Vol Thru, %	94%	1%	25%
Vol Right, %	6%	48%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	210	480	156
LT Vol	0	244	117
Through Vol	197	4	39
RT Vol	13	232	0
Lane Flow Rate	219	500	162
Geometry Grp	1	1	1
Degree of Util (X)	0.331	0.669	0.258
Departure Headway (Hd)	5.452	4.819	5.722
Convergence, Y/N	Yes	Yes	Yes
Cap	658	755	627
Service Time	3.487	2.819	3.759
HCM Lane V/C Ratio	0.333	0.662	0.258
HCM Control Delay	11.2	17	10.7
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.4	5.2	1

Intersection	
Intersection Delay, s/veh	21.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	420	0	0	163	353	4	96	0	0
Future Vol, veh/h	244	420	0	0	163	353	4	96	0	0
Peak Hour Factor	0.85	0.85	0.85	1.00	0.85	0.85	0.85	0.85	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	287	494	0	0	192	415	5	113	0	0
Number of Lanes	1	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	2
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	20.3	26.4
HCM LOS	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	17%	100%	0%	0%
Vol Thru, %	0%	0%	100%	32%
Vol Right, %	83%	0%	0%	68%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	244	420	516
LT Vol	19	244	0	0
Through Vol	0	0	420	163
RT Vol	96	0	0	353
Lane Flow Rate	135	287	494	607
Geometry Grp	2	7	7	5
Degree of Util (X)	0.238	0.483	0.761	0.824
Departure Headway (Hd)	6.325	6.053	5.547	4.887
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	597	652	747
Service Time	4.365	3.782	3.276	2.887
HCM Lane V/C Ratio	0.238	0.481	0.758	0.813
HCM Control Delay	11.3	14.3	23.8	26.4
HCM Lane LOS	B	B	C	D
HCM 95th-tile Q	0.9	2.6	7	9

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	276	0	0	144	230	6	126	0	0
Future Vol, veh/h	165	276	0	0	144	230	6	126	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	288	0	0	150	240	6	131	0	0
Number of Lanes	1	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	2
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	11.3	12
HCM LOS	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1
Vol Left, %	12%	100%	0%	0%
Vol Thru, %	0%	0%	100%	39%
Vol Right, %	88%	0%	0%	61%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	165	276	374
LT Vol	18	165	0	0
Through Vol	0	0	276	144
RT Vol	126	0	0	230
Lane Flow Rate	150	172	288	390
Geometry Grp	2	7	7	5
Degree of Util (X)	0.217	0.273	0.417	0.491
Departure Headway (Hd)	5.207	5.722	5.218	4.54
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	683	624	684	787
Service Time	3.289	3.494	2.989	2.604
HCM Lane V/C Ratio	0.22	0.276	0.421	0.496
HCM Control Delay	9.7	10.7	11.7	12
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.8	1.1	2.1	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	4	53	7	6	23	113	407	2	12	480	31
Future Volume (veh/h)	155	4	53	7	6	23	113	407	2	12	480	31
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	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945
Adj Flow Rate, veh/h	168	4	58	8	7	25	123	442	2	13	522	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	7	72	95	88	206	600	1336	6	688	1248	81
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1104	38	385	194	471	1108	887	1935	9	983	1806	118
Grp Volume(v), veh/h	230	0	0	40	0	0	123	0	444	13	0	556
Grp Sat Flow(s),veh/h/ln	1528	0	0	1774	0	0	887	0	1944	983	0	1924
Q Serve(g_s), s	9.1	0.0	0.0	0.0	0.0	0.0	5.1	0.0	6.7	0.4	0.0	9.2
Cycle Q Clear(g_c), s	10.4	0.0	0.0	1.4	0.0	0.0	14.3	0.0	6.7	7.1	0.0	9.2
Prop In Lane	0.73		0.25	0.20		0.62	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	370	0	0	389	0	0	600	0	1342	688	0	1329
V/C Ratio(X)	0.62	0.00	0.00	0.10	0.00	0.00	0.21	0.00	0.33	0.02	0.00	0.42
Avail Cap(c_a), veh/h	713	0	0	766	0	0	600	0	1342	688	0	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	0.0	24.8	0.0	0.0	8.0	0.0	4.5	6.0	0.0	4.9
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.7	0.1	0.0	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	3.9	0.0	0.0	0.6	0.0	0.0	1.0	0.0	2.2	0.1	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	0.0	0.0	24.9	0.0	0.0	8.8	0.0	5.2	6.0	0.0	5.9
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		230			40			567			569	
Approach Delay, s/veh		30.0			24.9			6.0			5.9	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.0		18.1		55.0		18.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		50.5		30.5		50.5		30.5				
Max Q Clear Time (g_c+I1), s		16.3		12.4		11.2		3.4				
Green Ext Time (p_c), s		3.9		1.2		4.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	8	62	9	8	12	140	267	4	35	353	42
Future Volume (veh/h)	226	8	62	9	8	12	140	267	4	35	353	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1976	1937	1976	1976	1937	1976	1937	1937	1976	1937	1937	1976
Adj Flow Rate, veh/h	246	9	67	10	9	13	152	290	4	38	384	46
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	11	81	173	160	182	602	1174	16	717	1046	125
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1153	42	314	414	625	711	992	1906	26	1124	1698	203
Grp Volume(v), veh/h	322	0	0	32	0	0	152	0	294	38	0	430
Grp Sat Flow(s),veh/h/ln	1509	0	0	1750	0	0	992	0	1933	1124	0	1901
Q Serve(g_s), s	13.2	0.0	0.0	0.0	0.0	0.0	6.3	0.0	4.9	1.1	0.0	7.9
Cycle Q Clear(g_c), s	14.2	0.0	0.0	0.9	0.0	0.0	14.3	0.0	4.9	6.0	0.0	7.9
Prop In Lane	0.76		0.21	0.31		0.41	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	477	0	0	516	0	0	602	0	1191	717	0	1171
V/C Ratio(X)	0.68	0.00	0.00	0.06	0.00	0.00	0.25	0.00	0.25	0.05	0.00	0.37
Avail Cap(c_a), veh/h	886	0	0	959	0	0	602	0	1191	717	0	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	19.9	0.0	0.0	10.3	0.0	6.1	7.5	0.0	6.7
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	0.1	0.0	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	6.1	0.0	0.0	0.5	0.0	0.0	1.9	0.0	2.7	0.4	0.0	4.4
LnGrp Delay(d),s/veh	26.4	0.0	0.0	19.9	0.0	0.0	11.3	0.0	6.6	7.6	0.0	7.6
LnGrp LOS	C			B			B		A	A		A

Approach Vol, veh/h		322			32			446			468	
Approach Delay, s/veh		26.4			19.9			8.2			7.6	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		22.6		48.0		22.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		43.5		37.5		43.5		37.5
Max Q Clear Time (g_c+I1), s		16.3		16.2		9.9		2.9
Green Ext Time (p_c), s		2.6		1.9		3.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	95.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	459	0	0	192	393	4	151	0	0
Future Vol, veh/h	244	459	0	0	192	393	4	151	0	0
Peak Hour Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.86	0.86	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	284	534	0	0	223	457	5	176	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	155	47.5
HCM LOS	F	E

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	11%	35%	0%
Vol Thru, %	0%	65%	33%
Vol Right, %	89%	0%	67%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	170	703	585
LT Vol	19	244	0
Through Vol	0	459	192
RT Vol	151	0	393
Lane Flow Rate	198	817	680
Geometry Grp	1	1	1
Degree of Util (X)	0.36	1.276	0.953
Departure Headway (Hd)	7.017	5.621	5.474
Convergence, Y/N	Yes	Yes	Yes
Cap	516	654	667
Service Time	5.017	3.638	3.474
HCM Lane V/C Ratio	0.384	1.249	1.019
HCM Control Delay	13.9	155	47.5
HCM Lane LOS	B	F	E
HCM 95th-tile Q	1.6	31.7	13.5

Intersection	
Intersection Delay, s/veh	20.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	165	329	0	0	199	306	6	199	0	0
Future Vol, veh/h	165	329	0	0	199	306	6	199	0	0
Peak Hour Factor	0.96	0.96	1.00	1.00	0.96	0.96	0.96	0.96	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	1	1	0	0
Mvmt Flow	172	343	0	0	207	319	6	207	0	0
Number of Lanes	0	1	0	0	1	0	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	24.1	20.3
HCM LOS	C	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	8%	33%	0%
Vol Thru, %	0%	67%	39%
Vol Right, %	92%	0%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	217	494	505
LT Vol	18	165	0
Through Vol	0	329	199
RT Vol	199	0	306
Lane Flow Rate	226	515	526
Geometry Grp	1	1	1
Degree of Util (X)	0.367	0.769	0.729
Departure Headway (Hd)	5.85	5.383	4.986
Convergence, Y/N	Yes	Yes	Yes
Cap	613	669	721
Service Time	3.914	3.43	3.033
HCM Lane V/C Ratio	0.369	0.77	0.73
HCM Control Delay	12.3	24.1	20.3
HCM Lane LOS	B	C	C
HCM 95th-tile Q	1.7	7.2	6.4

Intersection	
Intersection Delay, s/veh	32.8
Intersection LOS	D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	378	3	106	0	325	25	105	102	0
Future Vol, veh/h	0	0	0	378	3	106	0	325	25	105	102	0
Peak Hour Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.86	0.86	0.86	0.86	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	440	3	123	0	378	29	122	119	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	47.5	22.8	15.1
HCM LOS	E	C	C

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	78%	51%
Vol Thru, %	93%	1%	49%
Vol Right, %	7%	22%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	350	487	207
LT Vol	0	378	105
Through Vol	325	3	102
RT Vol	25	106	0
Lane Flow Rate	407	566	241
Geometry Grp	1	1	1
Degree of Util (X)	0.704	0.94	0.447
Departure Headway (Hd)	6.23	5.975	6.689
Convergence, Y/N	Yes	Yes	Yes
Cap	578	612	537
Service Time	4.279	3.975	4.744
HCM Lane V/C Ratio	0.704	0.925	0.449
HCM Control Delay	22.8	47.5	15.1
HCM Lane LOS	C	E	C
HCM 95th-tile Q	5.6	12.5	2.3

Intersection	
Intersection Delay, s/veh	17.9
Intersection LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	286	4	232	0	208	13	161	50	0
Future Vol, veh/h	0	0	0	286	4	232	0	208	13	161	50	0
Peak Hour Factor	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.96	1.00
Heavy Vehicles, %	0	0	0	1	25	2	0	1	1	1	3	0
Mvmt Flow	0	0	0	298	4	242	0	217	14	168	52	0
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

Approach				SB				NE		SW		
Opposing Approach								SW		NE		
Opposing Lanes				0				1		1		
Conflicting Approach Left				SW				SB				
Conflicting Lanes Left				1				1		0		
Conflicting Approach Right				NE						SB		
Conflicting Lanes Right				1				0		1		
HCM Control Delay				22.6				12.2		12.4		
HCM LOS				C				B		B		

Lane	NELn1	SBLn1	SWLn1
Vol Left, %	0%	55%	76%
Vol Thru, %	94%	1%	24%
Vol Right, %	6%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	221	522	211
LT Vol	0	286	161
Through Vol	208	4	50
RT Vol	13	232	0
Lane Flow Rate	230	544	220
Geometry Grp	1	1	1
Degree of Util (X)	0.368	0.764	0.364
Departure Headway (Hd)	5.759	5.059	5.955
Convergence, Y/N	Yes	Yes	Yes
Cap	624	712	602
Service Time	3.81	3.096	4.006
HCM Lane V/C Ratio	0.369	0.764	0.365
HCM Control Delay	12.2	22.6	12.4
HCM Lane LOS	B	C	B
HCM 95th-tile Q	1.7	7.2	1.7

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	244	459	0	0	192	393	4	151	0	0
Future Vol, veh/h	244	459	0	0	192	393	4	151	0	0
Peak Hour Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.86	0.86	1.00	1.00
Heavy Vehicles, %	1	1	0	0	1	1	75	2	0	0
Mvmt Flow	284	534	0	0	223	457	5	176	0	0
Number of Lanes	1	1	0	0	1	1	1	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	2	2
Conflicting Approach Left		NB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	31.8	18.3
HCM LOS	D	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	11%	100%	0%	0%	0%
Vol Thru, %	0%	0%	100%	100%	0%
Vol Right, %	89%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	244	459	192	393
LT Vol	19	244	0	0	0
Through Vol	0	0	459	192	0
RT Vol	151	0	0	0	393
Lane Flow Rate	198	284	534	223	457
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.349	0.516	0.896	0.39	0.709
Departure Headway (Hd)	6.361	6.552	6.045	6.296	5.585
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	565	550	598	569	644
Service Time	4.41	4.304	3.796	4.054	3.343
HCM Lane V/C Ratio	0.35	0.516	0.893	0.392	0.71
HCM Control Delay	12.8	16.1	40.2	13.1	20.9
HCM Lane LOS	B	C	E	B	C
HCM 95th-tile Q	1.6	2.9	10.8	1.8	5.8

Intersection	
Intersection Delay, s/veh	31.1
Intersection LOS	D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	378	3	106	0	325	25	105	102	0
Future Vol, veh/h	0	0	0	378	3	106	0	325	25	105	102	0
Peak Hour Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.86	0.86	0.86	0.86	1.00
Heavy Vehicles, %	0	0	0	1	33	1	0	1	12	1	2	0
Mvmt Flow	0	0	0	440	3	123	0	378	29	122	119	0
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	SB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	2	1
Conflicting Approach Left	SW	SB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NE		SB
Conflicting Lanes Right	1	0	1
HCM Control Delay	44.2	23.8	12.7
HCM LOS	E	C	B

Lane	NELn1	SBLn1	SWLn1	SWLn2
Vol Left, %	0%	78%	100%	0%
Vol Thru, %	93%	1%	0%	100%
Vol Right, %	7%	22%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	350	487	105	102
LT Vol	0	378	105	0
Through Vol	325	3	0	102
RT Vol	25	106	0	0
Lane Flow Rate	407	566	122	119
Geometry Grp	5	2	7	7
Degree of Util (X)	0.717	0.922	0.262	0.238
Departure Headway (Hd)	6.346	5.971	7.714	7.218
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	612	468	499
Service Time	4.346	3.971	5.428	4.932
HCM Lane V/C Ratio	0.709	0.925	0.261	0.238
HCM Control Delay	23.8	44.2	13.1	12.2
HCM Lane LOS	C	E	B	B
HCM 95th-tile Q	5.9	11.8	1	0.9

Network Totals

Number of Intersections	3
Control Delay / Veh (s/v)	29
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	29
Total Delay (hr)	16
Stops / Veh	1.00
Stops (#)	2032
Average Speed (mph)	13
Total Travel Time (hr)	30
Distance Traveled (mi)	391
Fuel Consumed (gal)	39
Fuel Economy (mpg)	10.1
CO Emissions (kg)	2.71
NOx Emissions (kg)	0.53
VOC Emissions (kg)	0.63
Unserved Vehicles (#)	0
Performance Index	22.1

Network Totals

Number of Intersections	3
Control Delay / Veh (s/v)	32
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	32
Total Delay (hr)	30
Stops / Veh	0.75
Stops (#)	2480
Average Speed (mph)	12
Total Travel Time (hr)	51
Distance Traveled (mi)	616
Fuel Consumed (gal)	60
Fuel Economy (mpg)	10.2
CO Emissions (kg)	4.20
NOx Emissions (kg)	0.82
VOC Emissions (kg)	0.97
Unserved Vehicles (#)	0
Performance Index	36.7

Network Totals

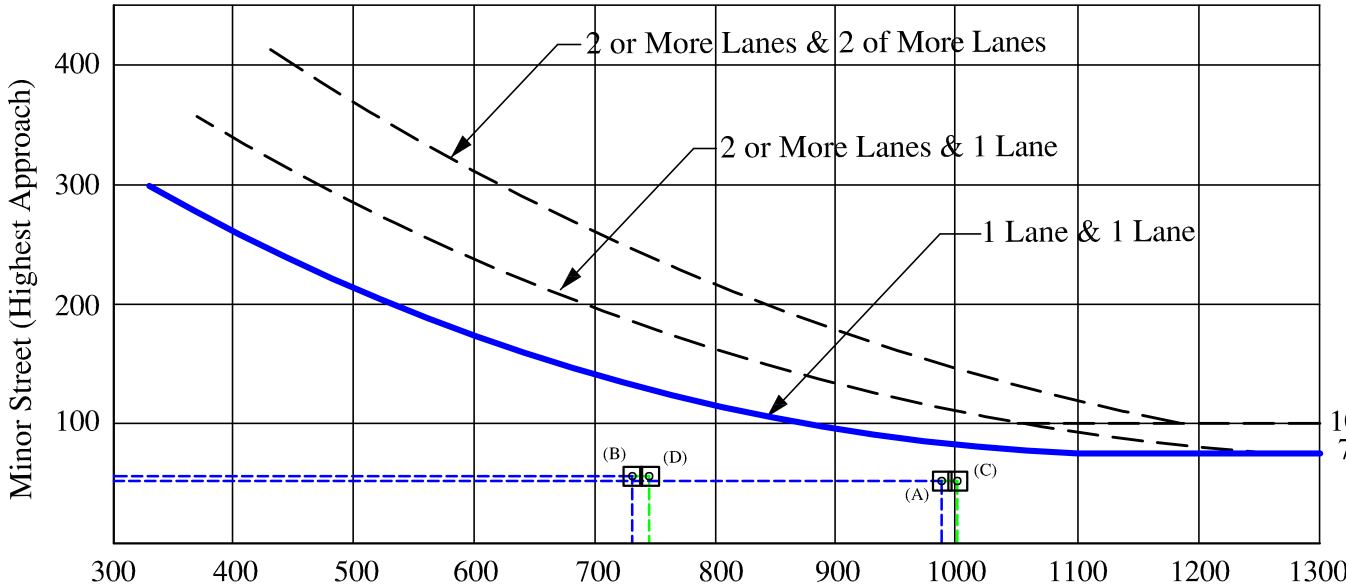
Number of Intersections	3
Control Delay / Veh (s/v)	12
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	12
Total Delay (hr)	5
Stops / Veh	1.00
Stops (#)	1542
Average Speed (mph)	19
Total Travel Time (hr)	15
Distance Traveled (mi)	282
Fuel Consumed (gal)	23
Fuel Economy (mpg)	12.0
CO Emissions (kg)	1.64
NOx Emissions (kg)	0.32
VOC Emissions (kg)	0.38
Unserved Vehicles (#)	0
Performance Index	9.4

Network Totals

Number of Intersections	3
Control Delay / Veh (s/v)	10
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	10
Total Delay (hr)	7
Stops / Veh	0.78
Stops (#)	2024
Average Speed (mph)	20
Total Travel Time (hr)	24
Distance Traveled (mi)	463
Fuel Consumed (gal)	35
Fuel Economy (mpg)	13.2
CO Emissions (kg)	2.46
NOx Emissions (kg)	0.48
VOC Emissions (kg)	0.57
Unserved Vehicles (#)	0
Performance Index	13.1

Warrant #3 - Peak Hour Volume (70%)

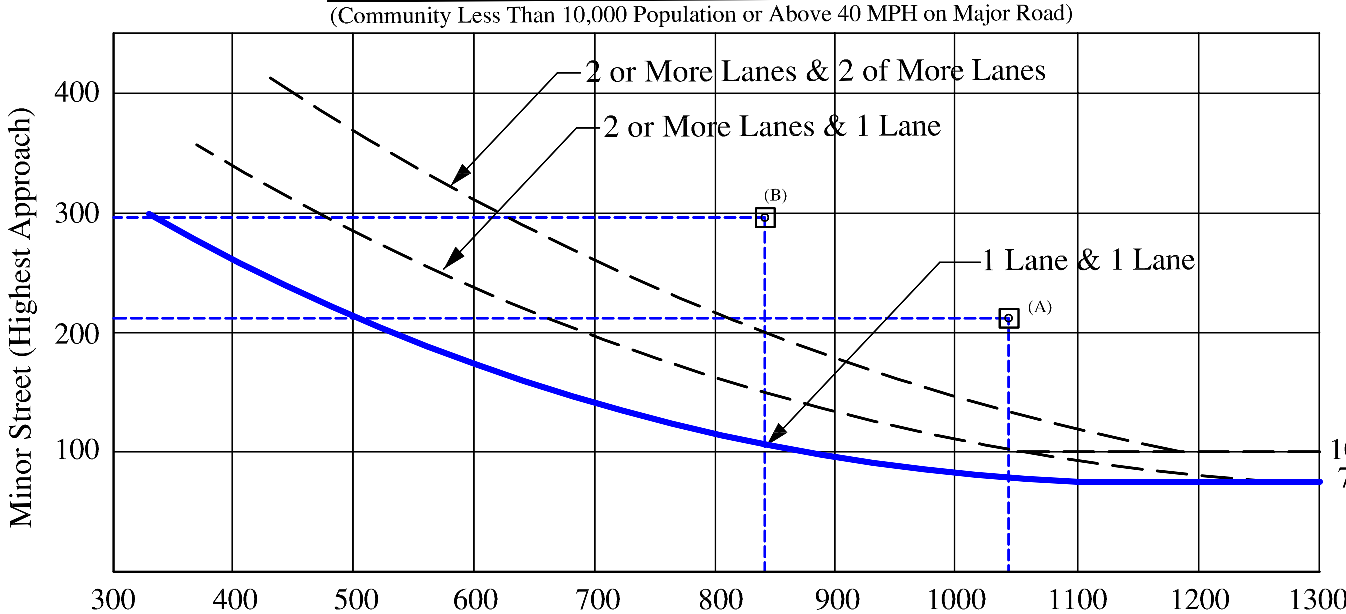
(Community Less Than 10,000 Population or Above 40 MPH on Major Road)



	Pironne Rd. (Ex.)	Arborwood Dr.	Met
(A) Ex. Plus Project AM Peak Hour:	989	52 - One Lane	NO
(B) Ex. Plus Project PM Peak Hour:	731	56 - One Lane	NO
(C) Cum. + Project AM Peak Hour:	1,002	52 - One Lane	NO
(D) Cum. + Project PM Peak Hour:	745	56 - One Lane	NO

Warrant #3 - Peak Hour Volume (70%)

(Community Less Than 10,000 Population or Above 40 MPH on Major Road)



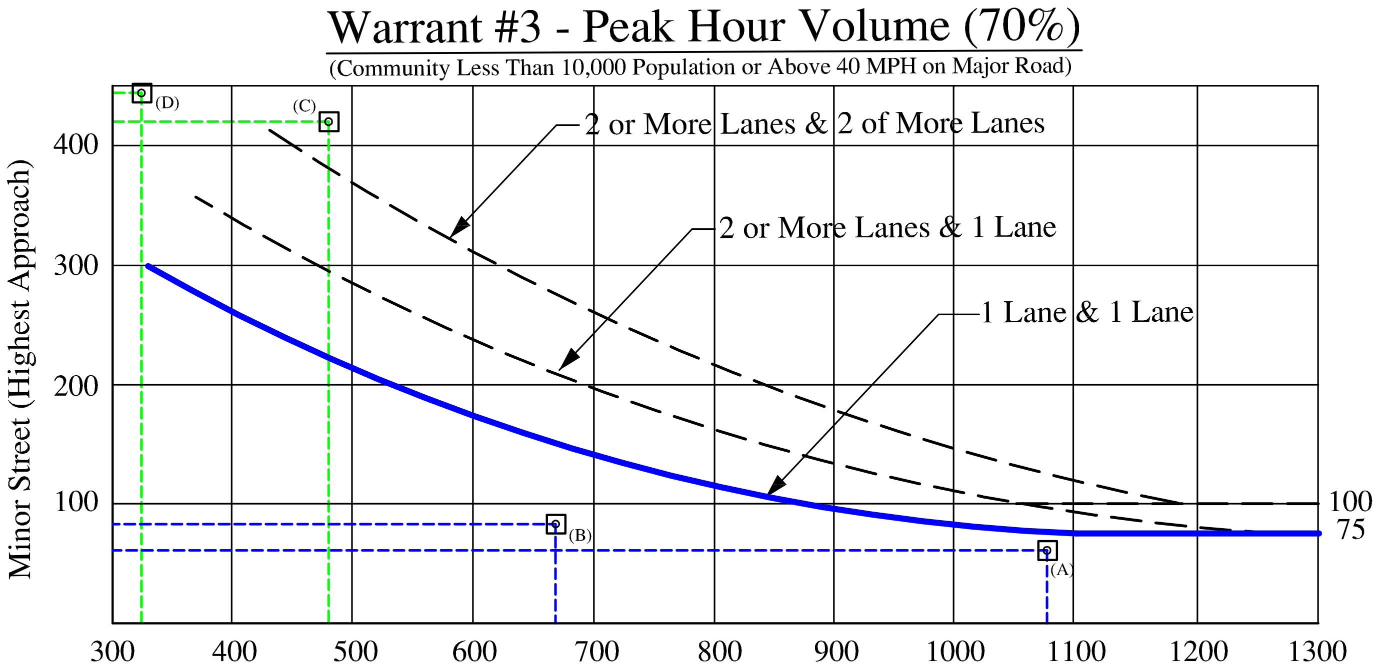
	New Pironne Rd.	Arborwood Dr.	Met
(A) Total Cum. AM Peak Hour:	1,045	212 - One Lane	YES
(B) Total Cum. PM Peak Hour:	841	296 - One Lane	YES

PINNACLE TRAFFIC ENGINEERING

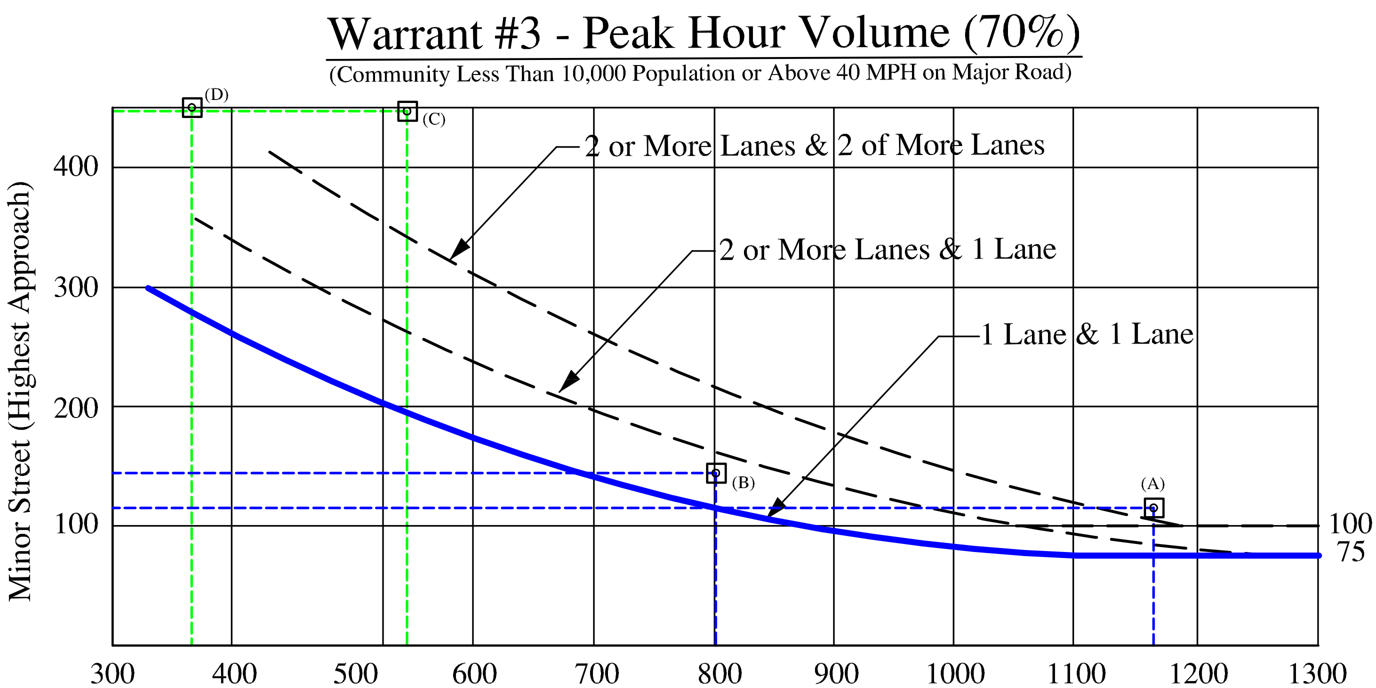
Salida Gas Station & C-Store

- Traffic Impact Analysis -

PEAK HOUR TRAFFIC SIGNAL WARRANTS



	Hammett Rd.	SR 99 Off Ramp	Met
(A) Existing AM Peak Hour:	1,078	61 - One Lane (NB)	NO
(B) Existing PM Peak Hour:	669	83 - One Lane (NB)	NO
(C) Existing AM Peak Hour:	481	420 - One Lane (SB)	YES
(D) Existing PM Peak Hour:	324	444 - One Lane (SB)	YES



	Hammett Rd.	SR 99 Off Ramp	Met
(A) Ex. + Project AM Peak Hour:	1,167	115 - One Lane (NB)	YES
(B) Ex. + Project PM Peak Hour:	801	144 - One Lane (NB)	YES
(C) Ex. + Project AM Peak Hour:	520	447 - One Lane (SB)	YES
(D) Ex. + Project PM Peak Hour:	366	474 - One Lane (SB)	YES

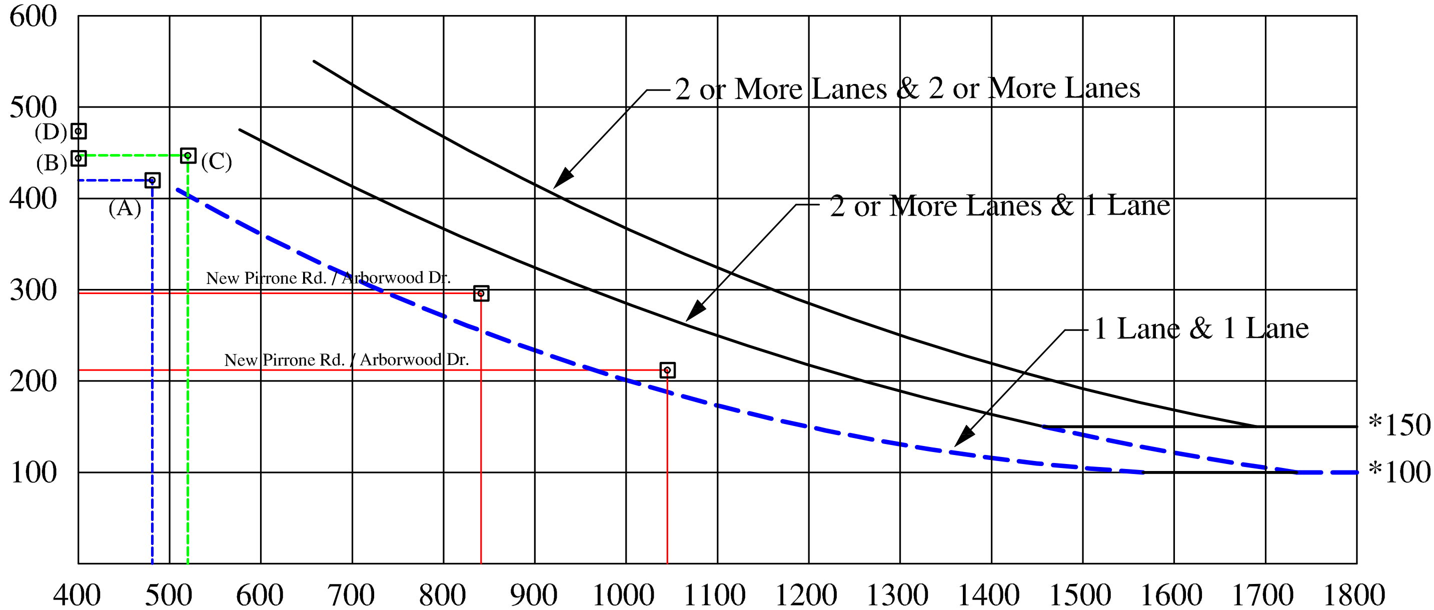
PINNACLE TRAFFIC ENGINEERING

Salida Gas Station & C-Store

- Traffic Impact Analysis -

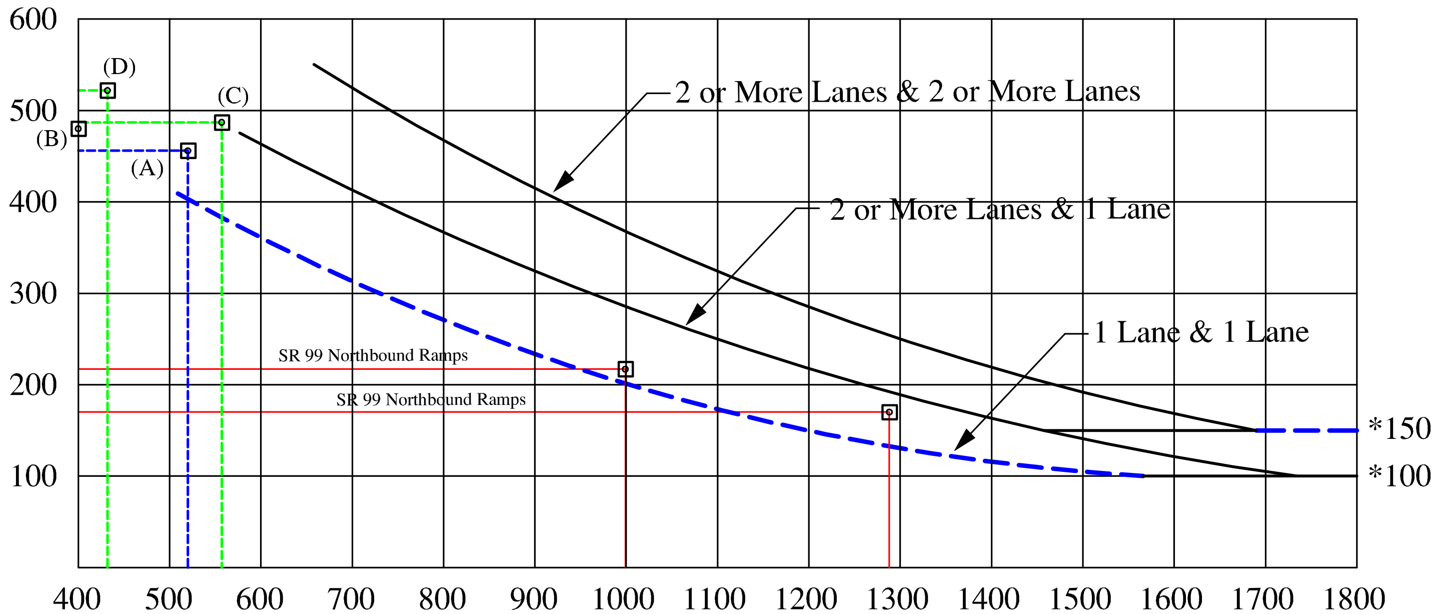
PEAK HOUR TRAFFIC SIGNAL WARRANTS

Warrant #3 - Peak Hour Volume (100%)

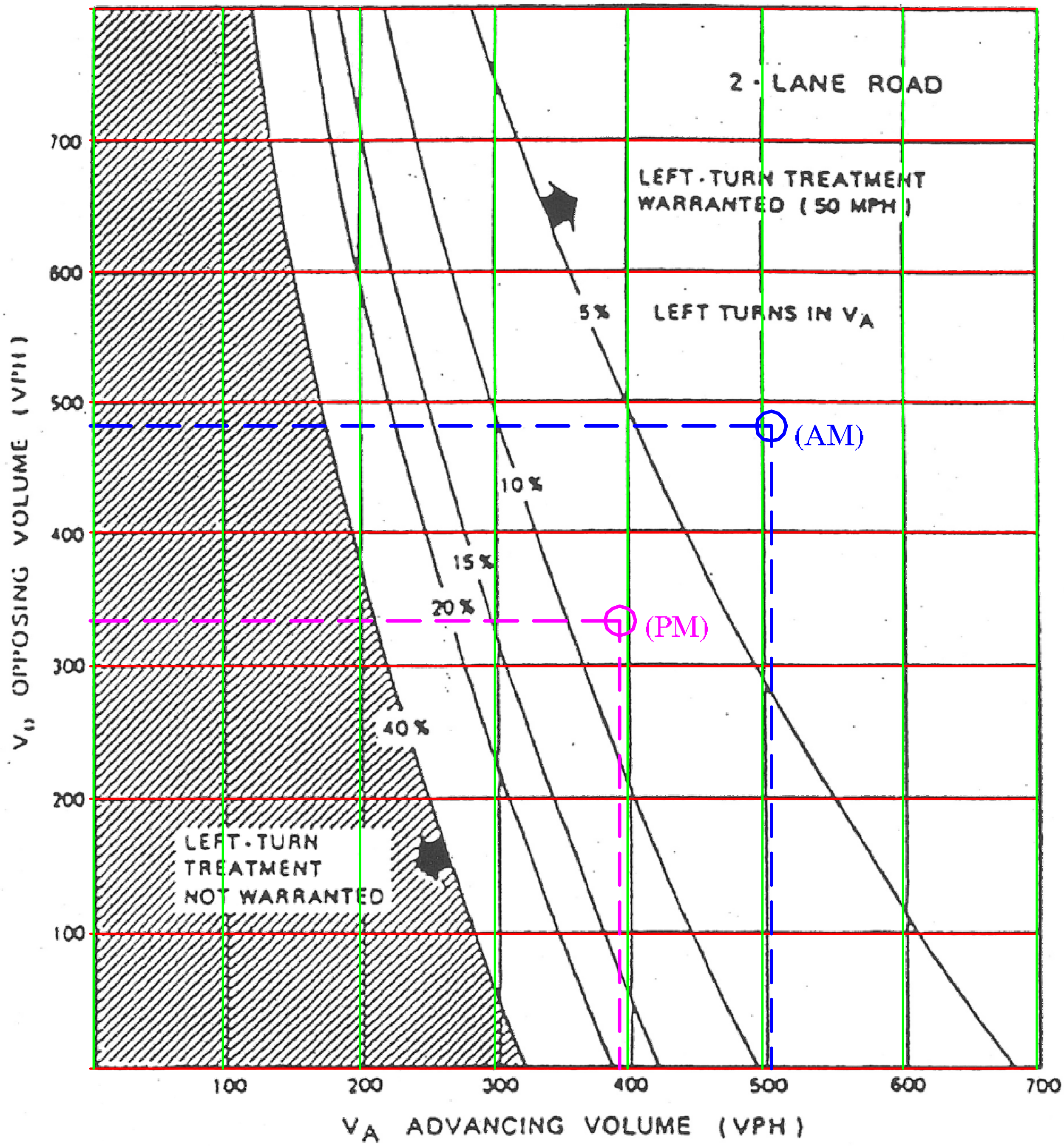


	Hammett Rd.	SR 99 Off Ramp	Met
(A) Existing AM Peak Hour:	481	420 - One Lane (SB)	NO
(B) Existing PM Peak Hour:	324 (na)	444 - One Lane (SB)	NO
(C) Ex. + Project AM Peak Hour:	520	447 - One Lane (SB)	YES
(D) Ex. + Project PM Peak Hour:	366 (na)	474 - One Lane (SB)	NO

Warrant #3 - Peak Hour Volume (100%)



	Hammet Rd.	SR 99 Off Ramp	Met
(A) Cum. + Project AM Peak Hour:	520	456 - One Lane (SB)	YES
(B) Cum. + Project PM Peak Hour:	366 (na)	480 - One Lane (SB)	NO
(C) Total Cumulative AM Peak Hour:	557	487 - One Lane (SB)	YES
(D) Total Cumulative PM Peak Hour:	432	522 - One Lane (SB)	YES



Adv. (AM) - 507 (17% Left Turns) - YES
Op. (AM) - 482

Adv. (PM) - 396 (25% Left Turns) - YES
Op. (PM) - 335

Source: Transportation Research Board, "Intersection Channelization Guide", NCHRP Report 279, November, 1985

PINNACLE TRAFFIC ENGINEERING

2 LANE ROADWAY (50 MPH)
LEFT-TURN LANE WARRANT CRITERIA

930 San Benito Street - Hollister, CA 95023
(831) 638-9260 / FAX (831) 638-9268

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 • (831) 638-9260

Salida Gas Sta. & C-Store (PLN2019-0079); Stanislaus Co., CA

Project Traffic Impact Analysis (TIA) - PTE #350-A

Speed Data - Pirrone Rd. @ Arborwood Dr. - LDH; 7:15 AM (2/6/20) & 4:45 PM (2/5/20)

Data #	Northbound (NB) - MPH		
1.	47	42	
2.	36	41	
3.	47	47	
4.	49	50	
5.	40	46	
6.	43	38	
7.	49	46	
8.	47	44	
9.	37	40	
10.	42	45	
11.	38	42	
12.	45	48	
13.	38	40	
14.	48	47	
15.	39	42	
16.	46	36	
17.	48	41	
18.	43	46	
19.	41	42	
20.	38	45	
21.	46	53	
22.	45	50	
23.	46	40	
24.	42	52	
25.	44	41	
26.	48	42	
27.		46	
28.		43	
Totals:	**1,132**	**1,235**	
	Total:	**2,367**	2367

Data #	Southbound (SB) - MPH		
1.	39	40	
2.	38	47	
3.	44	46	
4.	34	37	
5.	38	32	
6.	48	33	
7.	36	40	
8.	44	35	
9.	43	38	
10.	43	45	
11.	38	45	
12.	48	31	
13.	41	47	
14.	34	41	
15.	40	46	
16.	42	39	
17.	44	43	
18.	40	39	
19.	42	33	
20.	41	27	
21.	43	35	
22.	36	36	
23.	41	39	
24.	39	43	
25.	47	38	
26.	45	35	
27.	45		
28.			
20.			
Totals:	**1,113**	**1,010**	
	Total:	**2,123**	2123

Dry & Clear

Dry & Clear

NB Average Travel Speed :

Northbound (NB) : 2,367 / 54 = **43.8 MPH**

85th Percentile Speed (NB): **48 MPH**

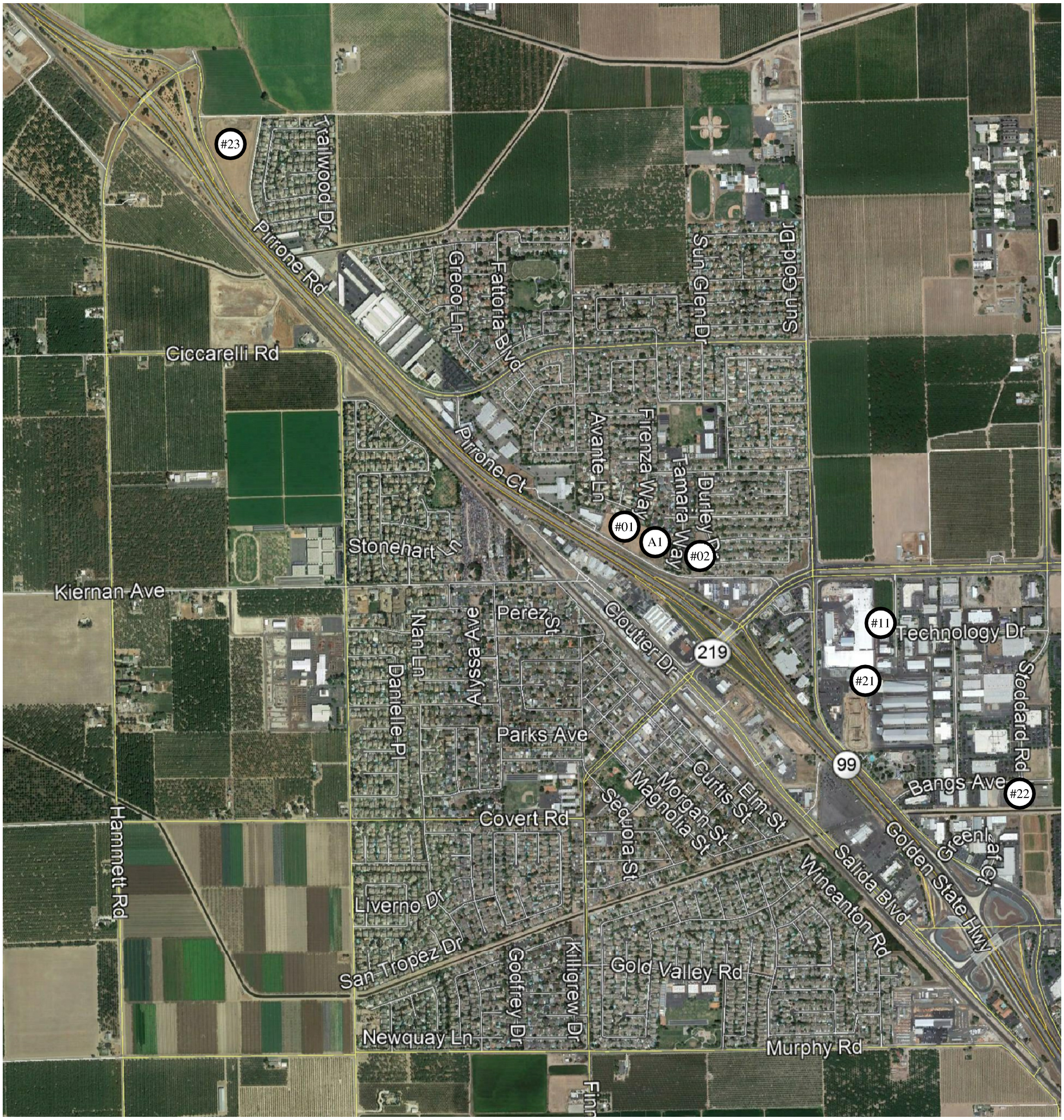
SB Average Travel Speed :

Southbound (SB) : 2,123 / 53 = **40.1 MPH**

85th Percentile Speed (SB): **45 MPH**

Stanislaus County - Active Planning Projects

#	Approved Projects		
A1	PLN2018-0067	4847 Kiernan Ct. (Approved)	15,000 SF Light Industrial
	Initial Study Projects		
#01	PLN2018-0173	Golden State (2019)	94 room hotel & 15,725 SF office/warehouse
#02	PLN2019-0045	Beeler Development (2020)	19,652 SF Warehouse / Light Industrial
	CEQA Exempt Referral Projects		
#11	PLN2019-0073	Salida AG Chem, Inc. (2019)	2,800 SF Equipment Housing (Warehouse)
	Early Consultation Projects		
#21	PLN2015-0030	Blue Diamond (2015)	Rezone Application for Future Expansion 80,000 SF Warehouse, 63,000 SF Manufacturing & 63,000 SF Warehouse
#22	PLN2019-0092	Pacific Botanical Lab. (2020)	6,008 SF Cannabis & Hemp Testing Lab
#23	PLN2019-0131	Lark Landing - 9 Parcels (2020)	Parcel 1: Gas Station, Carwash & Convenience Market Parcel 2: 3,200 SF Foot-Fast Food Restaurant Parcels 3 & 5: 17,678 SF Retail or 82-room hotel Parcels 4 & 6: 20,750 SF Retail Parcel 7: 100-room Hotel Parcel 8: 3,673 SF Carwash Parcel 9: 22,125 SF Office



LEGEND

#00 = Cumulative Project No.

NORTH

PINNACLE TRAFFIC ENGINEERING

Salida Gas Station & C-Store

- Traffic Impact Analysis -

CUMULATIVE PROJECTS LOCATION MAP

Salida Gas Station & C-Store (PTE #350); Cumulative Projects Trip Generation

Project #	Land Use	Size	Unit	AM Peak Hour		PM Peak Hour		ADT
				In	Out	In	Out	
A1	PLN2018-0067 - Light Industrial	15	KSF	9	1	1	8	74
	ITE Trip Rates - #110			*0.616*	*0.084*	*0.082*	*0.548*	*4.96*
#01	PLN2018-0173 - Hotel	94	Room	26	18	29	22	788
	ITE Trip Rates - #310 (b)			*0.278*	*0.192*	*0.306*	*0.234*	*8.36*
#02	PLN2019-0045 - Light Industrial	19.652	KSF	12	2	2	11	98
	ITE Trip Rates - #110			*0.616*	*0.084*	*0.082*	*0.548*	*4.96*
#11	PLN2019-0073 - Warehouse	2.8	KSF	0	0	0	0	6
	ITE Trip Rates - #150			*0.131*	*0.039*	*0.051*	*0.139*	*1.74*
#21	PLN2015-0030 - Warehouse	143	KSF	19	6	7	20	248
	ITE Trip Rates - #150			*0.131*	*0.039*	*0.051*	*0.139*	*1.74*
	Manufacturing	63	KSF	30	9	13	29	248
	ITE Trip Rates - #140			*0.477*	*0.143*	*0.208*	*0.462*	*3.93*
#22	PLN2019-0092 - Light Industrial	6.008	KSF	4	1	0	3	30
	ITE Trip Rates - #110			*0.616*	*0.084*	*0.082*	*0.548*	*4.96*
#23	PLN2019-0131: Lark Landing							
	Parcel 1: Gas Sta, CM & Carwash	12	Fuel Sta.	76	73	86	82	2,464
	ITE Trip Rates - #945 includes CW		Sta.	*6.360*	*6.110*	*7.135*	*6.855*	*205.36*
	Parcel 2: Foot-Fast Food Rest.	3.2	KSF	48	32	45	45	1,108
	ITE Trip Rates - #933 No Drive Thur			*15.060*	*10.040*	*14.170*	*14.170*	*346.23*
	Parcels 3, 4, 5 & 6: Retail	38.428	KSF	22	14	70	76	1,450
	ITE Trip Rates - #820			*0.583*	*0.357*	*1.829*	*1.981*	*37.75*
	Parcel 7: Hotel	100	Room	28	19	31	23	836
	ITE Trip Rates - #310 (b)			*0.278*	*0.192*	*0.306*	*0.234*	*8.36*
	Parcel 8: Carwash	3.673	KSF	0	0	26	26	208
	ITE Trip Rates - #948					*7.100*	*7.100*	*56.80*
	Parcel 9: Office	22.125	KSF	22	4	4	21	216
	ITE Trip Rates - #710			*1.000*	*0.160*	*0.180*	*0.970*	*9.740*
Total Project Trips:				**296**	**179**	**314**	**366**	**7,774**
				475		**680**		
Lark Landing Totals:				196	142	262	273	6,282
				338		535		
Project External Trips (-5% Internal Capture Trips):				186	135	249	259	5,968
Project Pass-By Trips (15%):				-29	-21	-39	-41	-942
Lark Landing Primary "New" Trips :				157	114	210	218	5,026
				270		428		

PINNACLE TRAFFIC ENGINEERING
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January 22, 2021

Mr. Paul Grewal
Cal Sierra Financial, Inc.
2807 G Street, Ste. B
Merced, CA 95340

RE: Pirrone Retail Project (PLN2019-0079); Stanislaus County, California
Supplemental Trip Generation Analysis

Dear Mr. Grewal,

Pinnacle Traffic Engineering (PTE) is pleased to submit a Supplemental Trip Generation Analysis for your project in Salida. The supplemental analysis presents an estimate of the project trip generation quantities associated with the current design. PTE prepared the Traffic Impact Analysis (TIA) for the original project (dated March 9, 2020). The TIA includes a detailed evaluation of the project impacts on Pirrone Road and at the State Route (SR) 99 / Hammett Road interchange. The TIA identified the potentially significant project impacts and proposed the appropriate mitigation measures to reduce the impacts to a level of "less than significant." The current project design indicates the proposed uses have been modified since the publication of the TIA (a copy of the current site plan is attached). Since several of the project components have changed, County staff requested a supplemental analysis to evaluate the "net" change in trip generation as compared to the trips analyzed in the project TIA. The previous and current project uses are summarized in Table 1.

Table 1 - Previous and Current Proposed Project Uses

Previous Project Uses (Analyzed in Initial TIA)	
Retail Space	1,500 SF
Sit Down Restaurant	4,000 SF
Service Station with Convenience Market (10 Pump Islands)	20 F.P. (a)
Current Proposed Project Uses	
Retail Space	2,310 SF
Fast-Food Restaurant with Drive-Thru	3,250 SF
Service Station with Convenience Market (6 Pump Islands)	12 F.P. (a)
Mini-Warehouse (Rentable Storage Space)	61,460 SF

(a) F.P. = Number of fueling positions (2 fueling positions per pump)

The main modifications include the addition of a mini-warehouse (storage) use, reducing the number of gas pump islands (fueling positions), and changing the sit down restaurant to a fast-food restaurant with a drive-thru. The area for the retail space was also increased slightly.

Project Trip Generation Estimates

The trip generation estimates associated with the current project uses were derived using data in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). The applicable ITE trip generation rates are presented in Table 2.

Table 2 - Applicable ITE Trip Generation Rates

Land Use Category	Trip Generation Rates				
	AM Peak Hour		PM Peak Hour		Daily
	In	Out	In	Out	
ITE #151 - Mini Warehouse (a)	0.06	0.05	0.10	0.09	1.65
ITE #820 - General Retail (b)	0.58	0.36	1.83	1.98	37.75
ITE #934 - Fast-food Restaurant w/ D.T. (b)	20.50	19.69	16.99	15.68	470.95
ITE #945 - Service Station w/ Conv. Market (c)	6.36	6.11	7.13	6.86	205.36

(a) Number of vehicles per "Net" rentable storage area
(b) Number of vehicle trips per 1,000 SF
(c) Number of vehicle trips per fueling position

Similar to the methodology used in the TIA, a 5% percent reduction to account for internal "captured" trips was applied to the total project trip generation (95% of the total trips will be external to the site). As allowed by Caltrans, a 15% trip reduction was also applied to the commercial related trips (retail, restaurant & service station) to account for "pass-by" and "diverted-link" trips. The trip generation estimates associated with the current project uses are presented in Table 3.

Table 3 - Project Trip Generation Estimates

Land Use	Number of Vehicle Trips				
	AM Pk. Hr.		PM Pk. Hr.		Daily
	In	Out	In	Out	
Retail (2,310 SF)	1	1	4	5	88
Fast-Food Restaurant w/ D.T. (3,250 SF)	67	64	55	51	1,530
Service Station with Conv. Market (12 F.P.)	76	73	86	82	2,464
Mini Warehouse-Storage (61,460 SF)	4	3	6	6	102
Total Project Site Trips:	148	141	151	144	4,184
External Project Demands (95% of Total):	141	134	143	137	3,974
Project Pass-By Trips (15%):	-22	-21	-22	-21	-612
Project "Primary" (Single Purpose) Trips:	119	113	121	116	3,362

Table 3 indicates the current project uses will generate approximately 4,184 daily trips, with 289 trips during the AM peak hour (148 in & 141 out) and 295 trips during the PM peak hour (151 in & 144 out). It's noted that the actual number of related pass-by trips is anticipated to the much higher than the 15%, as documented in the ITE Trip Generation Handbook.

To evaluate the "net" change in trip generation associated with the current proposed uses the project trip estimates in Table 3 were compared with the project trip generation estimates in the March 2020 TIA (Table 4, Page 11). A comparison of the project trip generation estimates and a summary of the "net" changes are displayed in Table 4.

Table 4 - Trip Generation Comparison and Summary of "Net" Changes

Project Component	Number of Vehicle Trips		
	AM Peak Hour	PM Peak Hour	Daily
Previous Project Design Evaluated in March 2020 TIA			
Total Project Trips:	291	325	4,612
Project New "Primary" Trips:	233	260	3,690
Current Proposed Project Uses (January 2021)			
Total Project Trips:	289	295	4,184
Project New "Primary" Trips:	232	237	3,362
"Net" Change in Trip Generation (May 2016 vs. June 2017)			
Total Project Trips:	-0.7%	-9.2%	-9.3%
Project New "Primary" Trips:	-0.4%	-8.9%	-8.9%

The data in Table 4 demonstrates the current proposed project uses will generate fewer peak hour and daily trips than analyzed in the March 2020 TIA. The number of AM peak hour trips is essentially the same, with a reduction of about 9% during the PM peak hour and on a daily basis.

As previously stated, the March 2020 TIA identified the potentially significant impacts and proposed the appropriate mitigation measures to reduce the impacts to a level of "less than significant." Based on the data presented in the Supplemental Trip Generation Analysis, the current proposed project uses will not change the conclusions in the March 2020 TIA.

Please contact my office with any questions or comments regarding the Supplemental Trip Generation Analysis.

Pinnacle Traffic Engineering

Larry D. Hail, CE, TE
President

Attachment: Current Project Site Plan (January x, 2021)

DEPARTMENT OF PUBLIC WORKS

David A. Leamon, PE, MPA
Public Works Director

Chris Brady, PE
Deputy Director - Design/Survey/Fleet Maintenance

Frederic Clark, PE, LS
Deputy Director - Development/Traffic

Collin Yerzy, PE, QSD/P
Deputy Director – Construction Administration/Operations

Tracie Madison
Senior Business and Finance Manager

www.stancounty.com/publicworks

February 25, 2021

Subject: Cal-Sierra Financial / APN: 003-014-007 / PLN2019-0079

Dear Ms. Doud,

The proposed retail project, Cal Sierra Financial, located on Assessor's Parcel Number 003-014-007 (PLN2019-0079), has modified it's proposed uses from service station (20 pumps), a convenience market (4,500sqft), small retail (1,500sqft) and a sit-down restaurant (4,000sqft), to retail (2,310sqft), fast food w/drive-thru (3,250sqft), service station (6 pumps), convenience market (4,500sqft) and a mini-storage facility (61,460sqft) w/associated office space (1,400sqft).

A Traffic Impact Analysis (TIA) Report was originally prepared dated March 9, 2020 for this project and a supplement to the TIA was prepared to reflect the modifications listed above. The supplemental TIA concluded a net reduction of 8.9% PM Peak Hour trip ends with the project modifications.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) be evaluated using Vehicle Miles Traveled (VMT) as a metric. The project's proposal preceded the implementation of SB743 on July 1, 2020.

However, to address any concerns regarding the project's potential VMT impacts, a September 11, 2020 letter was sent from myself to the applicant, Mr. Paul Grewal, stating that the proposed project fit the description of locally-serving retail in the State of California Office of Planning and Research (OPR) VMT guidelines and therefore is presumed to create a less than significant transportation impact.

Based on the proposed use modifications, and the supplemental TIA showing a net decrease in traffic, the project is still considered to be locally-serving retail and should be considered to create a less than significant transportation impact.

If you have any questions or concerns, please don't hesitate to contact me.

Sincerely,

Andrew Malizia, PE
Senior Civil Engineer
Stanislaus County Public Works

DEPARTMENT OF PUBLIC WORKS

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Public Works Director

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Deputy Director – Construction Administration/Operations

Tracie Madison
Senior Business and Finance Manager

www.stancounty.com/publicworks

September 11, 2020

Subject: Cal-Sierra Financial / APN: 003-014-007

Dear Mr. Grewal,

Your proposed retail project, located on Assessor's Parcel Number 003-014-007, includes a gasoline fueling station (20 pumps), a convenience market (4,500sqft), small retail (1,500sqft) and a sit-down restaurant (4,000sqft). The proposed site has been planned commercial development since the late 1980's and the uses proposed are consistent with the originally approved uses. A Traffic Impact Analysis (TIA) Report was prepared dated March 9, 2020 for this project.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. The project's proposal preceded the implementation of SB743 on July 1, 2020.

Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA.

However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA states that locally-serving retail would generally redistribute trips from other local uses, rather than generate new trips.

The proposed project fits this description of locally-serving retail and therefore is presumed to create a less than significant transportation impact.

Sincerely,

Andrew Malizia, PE
Senior Civil Engineer
Stanislaus County Public Works