PUBLIC REVIEW DRAFT

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

FOR THE

ARC WAY GAS STATION AND RETAIL PROJECT

769 Frontage Road
Ripon, CA

December 2024

Prepared for:

City of Ripon
259 N. Wilma Avenue
Ripon, CA 95366

Prepared by:

BaseCamp Environmental, Inc.
802 W. Lodi Avenue
Lodi, CA 95240

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LIST OF ACRONYMS AND ABBREVIATONS USED IN THIS DOCUMENT

AB	Assembly Bill
APN	Assessor's Parcel Number
ARB	California Air Resources Board
BMP	Best Management Practice
CalEEMod	California Emissions Estimator Model
CalEnviroScreen	California Communities Environmental Health Screening Tool
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
dB	decibel
dBA	decibel, A-weighted
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night sound level
LOS	Level of Service
mgd	million gallons per day
MS4	Municipal Separate Storm Sewer System
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OPR	Governor's Office of Planning and Research
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
ROG	reactive organic gases
SB	Senate Bill
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Open Space and Habitat Conservation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District

SR	State Route
SSJID	South San Joaquin Irrigation District
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled

MITIGATED NEGATIVE DECLARATION

A. General Project Information

Project Title:	Arc Way Gas Station and Retail
Lead Agency Name and Address:	City of Ripon 259 N. Wilma Avenue Ripon, CA 95366
Contact Person and Phone Number:	Ken Zuidervaart, Community Development Director (209) 599-0222
Project Location:	769 Frontage Road, Ripon, California
Project Sponsor Name and Address:	Sukhdev Singh SRB Properties LLC 2826 Teepee Drive Stockton, CA 95205
General Plan Designation:	Community Commercial
Zoning:	C-2, Community Commercial
Project Description:	The project proposes the development of a commercial center on a 1.61-acre parcel at the intersection of West Frontage Road and Arc Way in central Ripon. The proposed development would consist of a Circle K convenience store building of approximately 5,198 square feet, along with six fuel dispensers under a canopy in front (east) of the store. The project also proposes construction of a commercial/retail building of approximately 4,320 square feet that can accommodate up to four retail businesses. The project proposes full access off West Frontage Road and more limited access off Arc Way. The project would require approval of a Major Site Plan Permit from the City.
Surrounding Land Uses and Setting:	The project site is located near and northeast of State Route 99. Light industrial development, including a truck yard, is located west and south of the site. Vacant land used currently used for agriculture is east of the site across Arc Way. North

	and northeast of the site, across Arc Way, is single-family residential development.
Other Public Agencies Whose Approval is Required:	County Environmental Health Department (fuel tanks), San Joaquin Valley Air Pollution Control District (Authority to Construct/Permit to Operate)
Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?	Notification to interested tribes was provided on May 23, 2024. No consultation requests were received by the City.

B. Environmental Factors Potentially Affected

The environmental factors checked below may be significantly affected by this project, involving at least one impact that is a "Potentially Significant Impact" prior to mitigation. Mitigation measures that would avoid potential effects or reduce them to a less-than-significant level have been prescribed for each of these effects, as described in the checklist and narrative on the following pages, and in the Summary Table at the end of Chapter 1.0.

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

C. Lead Agency Determination

On the basis of this initial evaluation:

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

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

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation 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.

CITY OF RIPON

Ken Zuidervaart, Director
Planning, Building, and Economic Development

Date

1.0 INTRODUCTION

1.1 Project Brief

This document is an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Arc Way Gas Station and Retail Project (project). The project site is located at 769 Frontage Road in central Ripon (Figures 1-1 to 1-5). This IS/MND has been prepared in compliance with the requirements of the California Environmental Quality Act (CEQA). For the purposes of CEQA, the City of Ripon (City) is the Lead Agency for the project.

The project would construct a commercial center on a vacant parcel of 1.61 acres. The commercial center would consist of a Circle K convenience store of approximately 5,198 square feet, along with six fuel dispensers under a canopy located in front (east) of the store. The project also proposes construction of a commercial/retail building of approximately 4,320 square feet that can accommodate up to four retail businesses. Full access would be provided off West Frontage Road, with more limited access off Arc Way. The project would connect to existing City water, sewer, and storm drainage facilities. The project would require approval of a Major Site Plan Permit from the City.

1.2 Purpose of Initial Study

CEQA requires that public agencies consider and document the potential environmental effects of the agency's actions that meet CEQA's definition of a "project." Briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project includes the agency's direct activities as well as activities that involve public agency approvals or funding. Guidelines for an agency's implementation of CEQA are found in the CEQA Guidelines (Title 14, Chapter 3 of the California Code of Regulations).

Provided that a project is not exempt from CEQA, the first step in the agency's consideration of its potential environmental effects is the preparation of an Initial Study. The Initial Study evaluates whether the project would involve "significant" environmental effects as defined by CEQA and identifies feasible mitigation measures that would avoid significant effects or reduce them to a level that would be less than significant. If the Initial Study does not identify significant effects, or if it identifies mitigation measures that would reduce all the significant effects of the project to a less-than-significant level, then the agency ordinarily prepares a Negative Declaration or Mitigated Negative Declaration. If the project involves significant effects that cannot be readily mitigated, then the agency must prepare an Environmental Impact Report (EIR). The agency may also decide to proceed directly with the preparation of an EIR without preparation of an Initial Study.

The proposed project is a "project" as defined by CEQA and is not exempt from CEQA requirements. The City has determined that the project involves the potential for significant environmental effects and requires preparation of this Initial Study. The Initial Study

describes the proposed project and its environmental setting, it discusses the potentially significant environmental effects of the project, and it identifies feasible mitigation measures that would avoid the potentially significant environmental effects of the project or reduce them to a level that would be less than significant. The Initial Study considers the project's potential for significant environmental effects in the following subject areas:

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

The Initial Study concludes that the project would have potentially significant environmental impacts, but that recommended mitigation measures would reduce all these impacts to a level that would be less than significant. As of the distribution of the IS/MND for public review, the applicant has accepted all the recommended mitigation measures. As a result, the City has prepared a Mitigated Negative Declaration and notified the public of the City's intent to adopt it. A copy of the City's Notice of Intent, which indicates the time available for comment, is inside the cover of this document.

1.3 Project Background

Ripon is the southernmost community in San Joaquin County, located along the Stanislaus River. It lies between Manteca, approximately five miles to the north, and Modesto, approximately 4 miles to the south. It is bisected by State Route (SR) 99 and the Central Valley route of the Union Pacific Railroad. The project site is located just north of SR 99 at the Milgeo Avenue interchange.

Ripon's economic base has long been tied mainly to agriculture and related businesses. While agriculture continues to play a large part in the local economy, Ripon has begun to transition towards other non-agriculture industries. In particular, the transportation and traveler accommodation industry has increased its presence in the community.

The Ripon General Plan was adopted by the City in 2006. A general plan is often described as a "blueprint for future growth" or a "constitution for future development" of a community. The Ripon General Plan provides guidance for development within the Ripon community to the year 2040. As part of this guidance, a Land Use Map has been prepared that designates the location of desired land uses in the Planning Area of the General Plan. The project site is designated by the General Plan for Community Commercial land uses.

1.4 Environmental Checklist Terminology

The project's potential environmental effects are evaluated in the Environmental Checklist presented in Chapter 3.0, which follows the format of issues and questions presented in the Environmental Checklist in CEQA Guidelines Appendix G. The checklist includes a list of environmental considerations against which the project is evaluated. For each question, the City determines whether the project would involve: 1) a Potentially Significant Impact, 2) a Less Than Significant Impact with Mitigation Incorporated, 3) a Less Than Significant Impact, or 4) No Impact.

> A Potentially Significant Impact occurs when there is substantial evidence that the project could involve a substantial adverse change to the physical environment, i.e., that the environmental effect may be significant, and mitigation measures have not been defined that would reduce the impact to a less than significant level. If there are one or more Potentially Significant Impact identified in the Initial Study, an EIR is required.
>
> An environmental effect that is Less Than Significant with Mitigation Incorporated is a Potentially Significant Impact that can be avoided or reduced to a level that is less than significant with the application of mitigation measures.
>
> A Less Than Significant Impact occurs when the project involves effects on an area of environmental concern, but the project would not involve a substantial adverse change to the physical environment and no mitigation measures are required.
>
> A determination of No Impact is self-explanatory.

Some existing regulatory requirements, established by the City and other agencies with jurisdiction, are routinely applied to new development projects; some of these requirements function as measures that mitigate environmental impacts and are described in this IS/MND as a part of the existing regulatory setting. The IS/MND describes how these requirements would tend to reduce or avoid the project's environmental effects.

Where existing regulatory requirements are not adequate to reduce the project's environmental impacts to a level that would be less than significant, this IS/MND describes additional mitigation measures that are needed to fulfill the requirements of CEQA. These measures are described by subject in the various technical sections of Chapter 3.0 and are summarized in Table 1-1. As of the publication of the Notice of Intent for this project, these measures have been accepted by the project applicant. In all cases for this project, these mitigation measures would avoid potentially significant impacts of the project or reduce them to a level that would be less than significant.

1.5 Summary of Environmental Impacts and Mitigation Measures

Table 1-1 summarizes the results of the analysis of the project's potential environmental impacts conducted in Chapter 3.0 of this IS/MND. The potential environmental impacts of the project are listed in the left-most column of this table. The projected level of significance of each impact without mitigation is indicated in the second column.

Mitigation measures proposed to avoid or minimize identified significant environmental effects are shown in the third column. The significance of the impact after mitigation measures are applied is shown in the fourth column.

If no mitigation measures are required for an impact, then the notation "None required" is entered in the third column, and the fourth column has no notation. The level of significance indicated in the second column would be the level of significance of the impact.

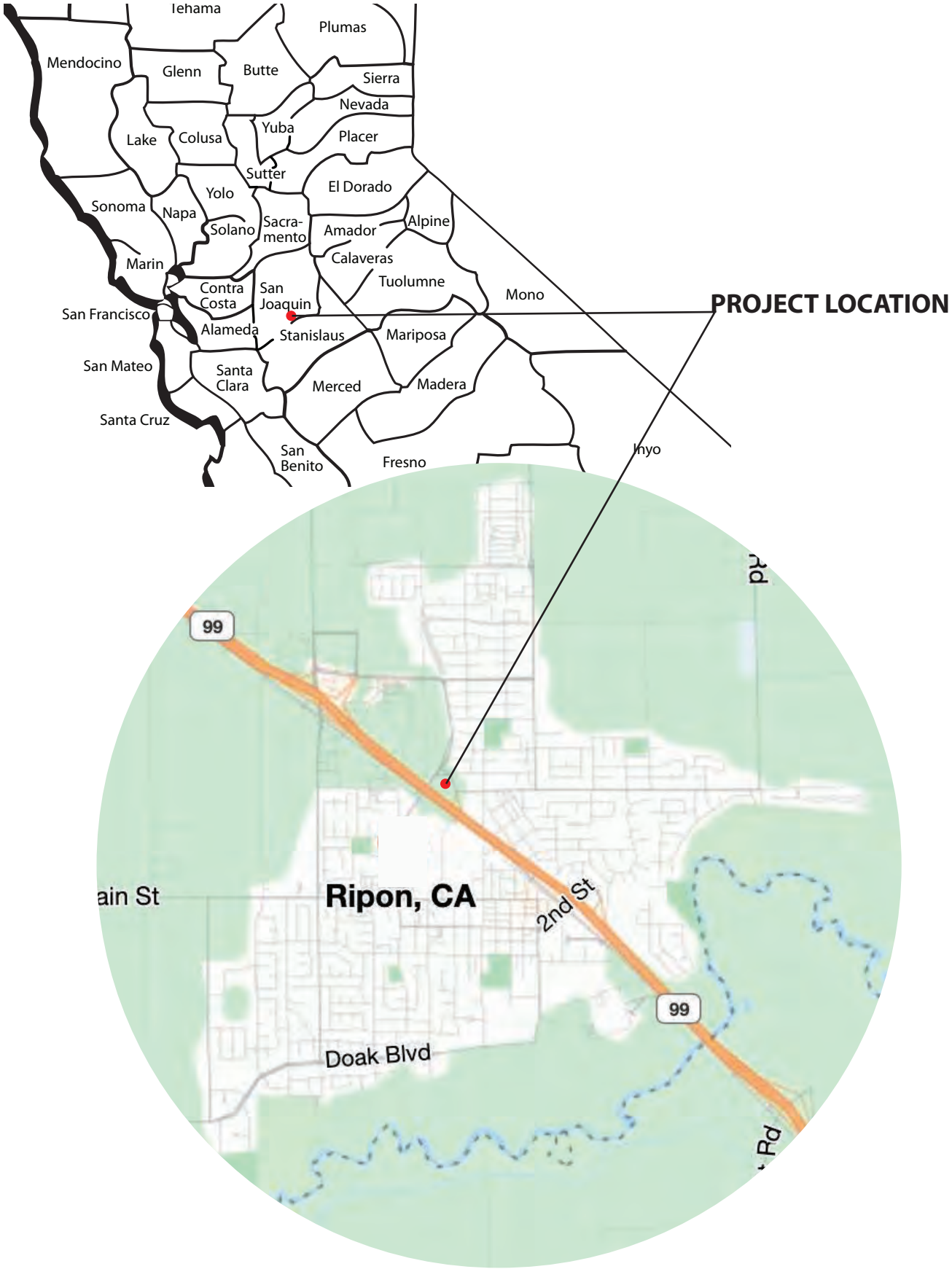


Figure 1-1
REGIONAL PROJECT LOCATION

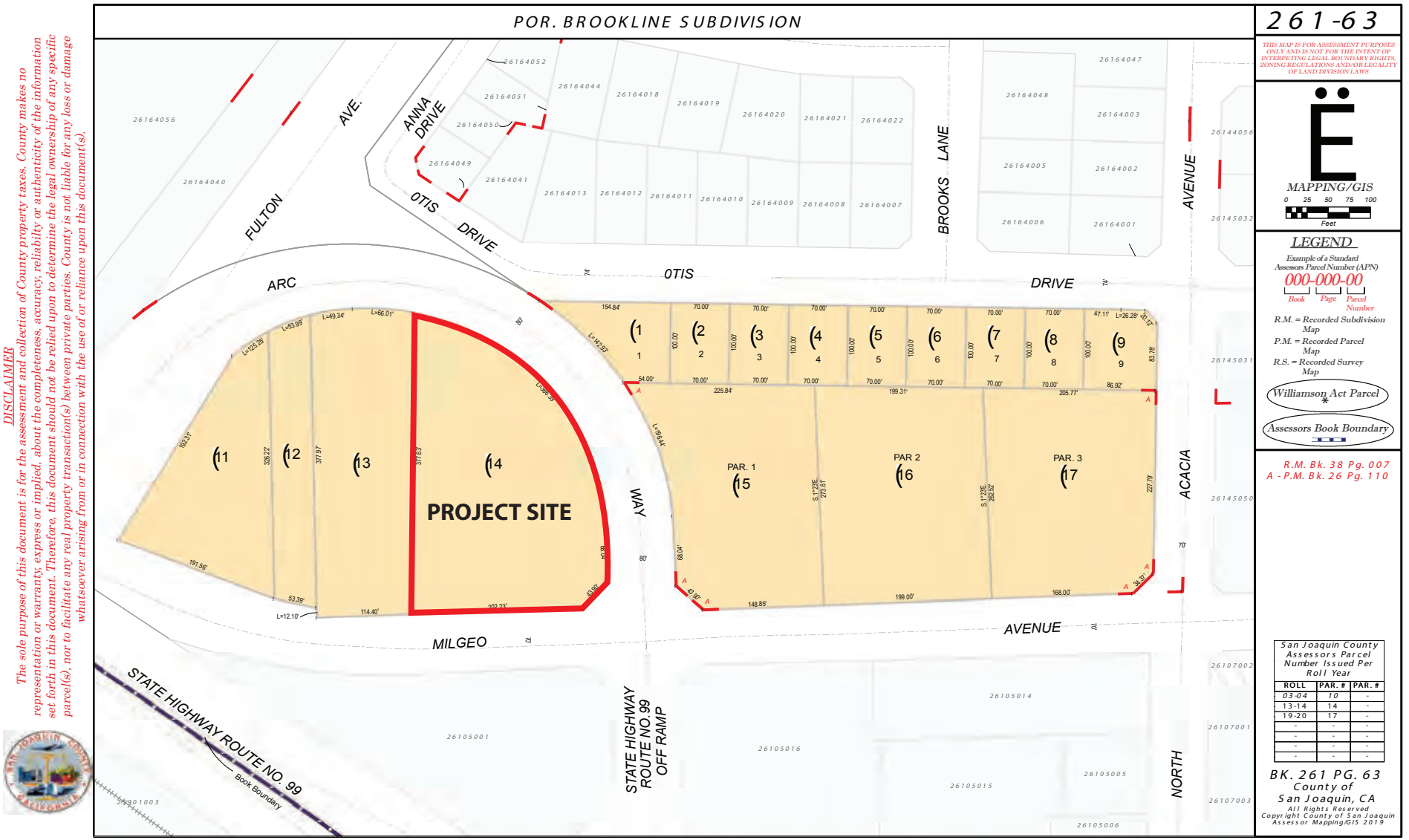
Figure 1-2
STREET MAP

SOURCE: USGS Quadrangle Map, Ripon CA 2021.

SOURCE: Google Earth

BaseCamp Environmental

Figure 1-4
AERIAL PHOTO



DISCLAIMER

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Figure 1-5
ASSESSOR PARCEL MAP

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.1 AESTHETICS			
a) Scenic Vistas	NI	None required	-
b) Scenic Resources and Highways	NI	None required	-
c) Visual Character and Quality	LS	None required	-
d) Light and Glare	LS	None required	-
3.2 AGRICULTURE AND FORESTRY RESOURCES			
a) Agricultural Land Conversion	NI	None required	-
b) Agricultural Zoning and Williamson Act Contracts	NI	None required	-
c, d) Forest Land Conversion and Zoning	NI	None required	-
e) Indirect Conversion of Farmland of Forest Land	NI	None required	-
3.3 AIR QUALITY			
a) Air Quality Plan Consistency	LS	None required	-
b) Cumulative Emissions	LS	None required	-
c) Exposure of Sensitive Receptors to Pollutants	LS	None required	-
d) Odors and Other Emissions	LS	None required	
3.4 BIOLOGICAL RESOURCES			
a) Special-Status Species	LS	None required	-
b) Riparian and Other Sensitive Habitats	NI	None required	-
c) State and Federal Jurisdictional Wetlands	NI	None required	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
d) Fish and Wildlife Movement	LS	None required	-
e) Local Biological Requirements	NI	None required	-
f) Conflict with Habitat Conservation Plans	NI	None required	-
3.5 CULTURAL RESOURCES			
a, b) Historical and Archaeological Resources	PS	CULT-1: If any subsurface cultural resources are encountered during project grading and excavation, the City Planning Department shall be notified and all construction activities within 50 feet of the encounter shall be halted until a qualified archaeologist can examine the discovered cultural materials and determine their significance. If the find is determined to be significant, then the archaeologist shall recommend further mitigation measures that would reduce potential effects on the find to a level that is less than significant. Recommended measures may include, but are not limited to, 1) preservation in place, or 2) excavation, recovery, and curation by qualified professionals. If the resource is identified as a potential tribal cultural resource, then the City Planning Department shall contact the Northern Valley Yokuts and request a representative to visit the site and evaluate the find. The tribal representative, in consultation with other tribes if necessary, shall recommend measures for the disposition of the resource. The tribal representative would be allowed to monitor any remaining grading activities for potential disturbance of additional tribal resources. The project developer shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts	LS

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		in a written report to the City's Planning Department, consistent with the requirements of the CEQA Guidelines.	
c) Human Burials	LS	None required	-
3.6 ENERGY			
a) Project Energy Consumption	LS	None required	-
b) Consistency with Energy Plans.	LS	None required	-
3.7 GEOLOGY AND SOILS			
a-i) Fault Rupture Hazards	NI	None required	-
a-ii, iii) Seismic Hazards	LS	None required	-
a-iv) Landslides	NI	None required	-
b) Soil Erosion	PS	GEO-1: Prior to commencement of construction activity, the developer shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project and file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) in compliance with the Construction General Permit and City of Ripon storm water requirements. The SWPPP shall be available on the construction site at all times. The developer shall incorporate an Erosion Control Plan consistent with all applicable provisions of the SWPPP within the site improvement and building plans. The developer also shall submit the SWRCB Waste Discharger's Identification Number (WDID) to the City prior to approval of development or grading plans.	LS
c) Geologic Instability	LS	None required	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
d) Expansive Soils	LS	None required	-
e) Adequacy of Soils for Wastewater Disposal	NI	None required	-
f) Paleontological Resources and Unique Geological Features	PS	GEO-2: If any subsurface paleontological resources are encountered during construction of the project, the City Planning Department shall be notified and all construction activities within 50 feet of the encounter shall be halted until a qualified paleontologist can examine these materials, determine their significance, and if significant recommend further mitigation measures that would reduce potential effects to a level that is less than significant. Such measures could include 1) preservation in place or 2) excavation, recovery, and curation by qualified professionals. The applicant shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written report to the City Planning Department, consistent with the requirements of the CEQA Guidelines.	LS
3.8 GREENHOUSE GAS EMISSIONS			
a, b) Project GHG Emissions and Consistency with GHG Reduction Plans	LS	None required	-
3.9 HAZARDS AND HAZARDOUS MATERIALS			
a) Hazardous Material Transport, Use, and Storage	LS	None required	-
b) Release of Hazardous Materials	LS	None required	-
c) Hazardous Materials Releases near Schools	NI	None required	-
d) Hazardous Materials Sites	LS	None required	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
e) Public Airport Operations	NI	None required	-
f) Emergency Response and Evacuations	PS	HAZ-1: Prior to the start of project construction, the developer shall prepare and implement a Traffic Control Plan, which shall include such items as traffic control requirements, resident notification of access closure, and daily access restoration. The contractor shall specify dates and times of road closures or restrictions, if any, and shall ensure that adequate access will be provided for emergency vehicles. The Traffic Control Plan shall be reviewed and approved by the City Department of Public Works and shall be coordinated with the Ripon Police Department and the Ripon Fire Department if construction will require road closures or lane restrictions.	LS
g) Wildland Fire Hazards	NI	None required	-
3.10 HYDROLOGY AND WATER QUALITY			
a) Surface Water Quality	LS	None required	-
b) Groundwater Supplies and Recharge	LS	None required	-
c-i, ii) Drainage Patterns	LS	None required	-
c-iii) Runoff	LS	None required	-
c-iv) Flood Flows	NI	None required	-
d) Release of Pollutants in Flood Zones	LS	None required	-
e) Conflict with Water Quality or Groundwater Plans	NI	None required	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.11 LAND USE AND PLANNING			
a) Division of Established Communities	NI	None required	-
b) Conflicts with Plans, Policies and Regulations Mitigating Environmental Effects	LS	None required	-
3.12 MINERAL RESOURCES			
a, b) Availability of Mineral Resources	NI	None required	-
3.13 NOISE			
a) Exposure to Noise Exceeding Local Standards	PS	NOISE-1: The City shall require the construction contractor to limit construction activities to the hours from 7:00 a.m. to 7:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the evenings and nights. Construction activities shall be prohibited on Sundays and federally recognized holidays, unless the contractor obtains prior approval from the City.	LS
b) Exposure to Groundborne Vibration or Noise	LS	None required	-
c) Public Airport and Private Airstrip Noise	NI	None required	-
3.14 POPULATION AND HOUSING			
a) Unplanned Population Growth	NI	None required	-
b) Displacement of Housing or People	NI	None required	-
3.15 PUBLIC SERVICES			
a) Fire Protection	LS	None required	-
b) Police Protection	LS	None required	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
c) Schools	NI	None required	-
d, e) Parks and Other Public Facilities	NI	None required	-
3.16 RECREATION			
a, b) Recreational Facilities	NI	None required	-
3.17 TRANSPORTATION			
a) Conflict with Transportation Plans, Ordinances and Policies	LS	<u>Transportation Improvement Recommendations*:</u> TIR-1: The project applicant shall contribute fair-share costs to the installation of an all-way stop control at the intersection of Fulton Avenue and Arc Way. The City Engineer would determine the appropriate fair-share cost in coordination with the project applicant.	-
b) Conflict with CEQA Guidelines Section 15064.3(b)	LS	None required	-
c) Traffic Hazards	PS	TRANS-1: Truck traffic on the project site shall be limited to fuel tankers and WB-40 trucks. Deliveries by these vehicles shall be limited to off-hours to minimize blocking of driveways and drive aisles. TRANS-2: Landscaping within the sight triangles at the project site driveways, as identified in the Transportation Impact Analysis prepared for the project by Flecker Associates on May 8, 2024, shall be limited to low-lying landscaping with any trees having canopies no less than eight feet. In addition, parking shall not be allowed within the sight triangles. No Parking signs shall	LS

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		be installed along the Frontage Road frontage of the project site.	
d) Emergency Access	LS	None required	-
3.18 TRIBAL CULTURAL RESOURCES			
a, b) Tribal Cultural Resources	PS	Mitigation Measure CULT-1.	LS
3.19 UTILITIES AND SERVICE SYSTEMS			
a) Relocation or Construction of New Facilities	LS	None required	-
b) Water Systems and Supply	LS	None required	-
c) Wastewater Treatment Capacity	LS	None required	-
d) Solid Waste Services	LS	None required	-
e) Solid Waste Regulations	NI	None required	-
3.20 WILDFIRE			
a) Emergency Response Plans and Emergency Evacuation Plans	NI	None required	-
b) Exposure of Project Occupants to Wildfire Hazards	NI	None required	-
c) Installation and Maintenance of Infrastructure	NI	None required	-
d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes	NI	None required	-
3.21 MANDATORY FINDINGS OF SIGNIFICANCE			

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
a) Findings on Biological and Cultural Resources	PS	Mitigation measures in Section 3.5.	LS
b) Findings on Individually Limited but Cumulatively Considerable Impacts	LS	None required	-
c) Findings on Adverse Effects on Human Beings	LS	None required	-

Note: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant
* Not mitigation measures, as they address issues not considered environmental impacts per CEQA Guidelines. Presented for informational purposes only.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The project site is located at 769 Frontage Road in central Ripon near SR 99, at the intersection of West Frontage Road and Arc Way (see Figures 1-1 to 1-5). The site consists of Assessor's Parcel Number (APN) 261-63-014. The project site is shown on the U.S. Geological Survey's Ripon, California, 7.5-minute quadrangle map within Section 19, Township 2 South, Range 8 East, Mt. Diablo Base and Meridian. The latitude of the project site is approximately 37° 44′ 48″ North, and the longitude is approximately 121° 07′ 52″ West.

2.2 Project Details

The project proposes development of APN 261-63-014, which is 1.61 acres in size and is currently vacant. The proposed development is a commercial center consisting of two buildings: a convenience store with fuel pumps and a commercial/retail building (Figure 2-1). A more detailed description of these buildings is provided below. The project will include construction of a roundabout at the intersection of Fulton Avenue and Arc Way.

Convenience Store/Fueling Area

The project proposes construction of a building that would be occupied by a Circle K convenience store. Figure 2-2 shows the convenience store elevations. The convenience store building would be constructed of concrete masonry units with a stucco exterior, metal siding trim, and rain screen cladding. The building in general would be approximately 18.5 feet in height to the roof parapet, with signs extending the height to approximately 21.5 feet. The interior ceiling would be approximately 12 feet in height. The building would have approximately 5,198 square feet of floor area. The proposed floor plan for the convenience store indicates a retail area, a food service area, a coffee and fountain drink retail area, a cold vault, a walk-in freezer, and a walk-in cooler. There also would be a cashier station with a food preparation area, restrooms, a back room with storage space and a receiving area for goods, and a storage room. An air and water dispenser are proposed to be placed in the parking area south of the convenience store.

A fueling area would be installed in front of the convenience store to the east. The fueling area would have six multi-product dispensers, each of which would have a fueling position on each side, for a total of 12 fueling positions. A canopy, approximately 94 feet long by 43 feet wide, would cover the fueling area. Two underground fuel storage tanks, each with a capacity of 20,000 gallons, would be installed in the southeastern corner of the project site. One tank would store regular gasoline. The other tank would have two compartments – one compartment would store 8,000 gallons of premium gasoline; the other would store 12,000 gallons of diesel fuel.

Commercial/Retail Building

North of the proposed convenience store, the project proposes the construction of a commercial/retail building. Figure 2-3 shows the building elevations. This building would have the same construction style and materials as the convenience store and would be approximately 24 feet in height to the parapet, with an interior ceiling height of 14 feet. The building would have approximately 4,320 square feet of floor area. The building would be a "shell" building, meaning that the building would not be occupied immediately after construction. A conceptual floor plan indicates that the building would be divided into spaces for four retail stores or other commercial activities.

The potential uses are expected to be consistent with the C-2 zoning for the project site, including restaurants. A patio area, which could be used as an optional outdoor dining area, would be installed adjacent to and north of the building. For the purposes of this CEQA analysis, on issues such as air quality and energy, the building will be considered a strip mall.

Other Features

Landscaping would be installed on approximately 20,874 square feet of the project site – approximately 29 percent of the project site (Figure 2-4). Trees would be planted along the site boundaries, in parking areas, and in the area between the buildings. Shrubs and groundcover would be planted along site boundaries and other landscaped areas. In the southeastern corner of the project site, a monument sign that would meet City sign standards would be installed. The site plan indicates two lighting fixtures installed in the landscape area would provide lighting for the parking area near the commercial/retail building.

Two trash enclosures, both located between the proposed buildings, would be provided for the placement of trash bins for each building. Each enclosure would be made of concrete masonry units and would be approximately six feet high. The enclosures would have the same stucco exterior as the buildings, and double steel gates would be installed at their entrances.

A masonry wall approximately seven feet in height would be installed along the west property line behind the two buildings. A wrought iron fence and gate approximately six feet in height would be set at each building end between the building and the wall. In the southwestern corner of the project site, a pad that would accommodate an electrical transformer would be installed, with surrounding bollards.

Access and Parking

Access to the project site would be provided off Frontage Road and Arc Way (see Figure 2-1). One full-access driveway would be provided off Frontage Road. One driveway would be provided off Arc Way; however, access from this driveway would be limited to "right turn in/right turn out" movements only. A concrete median island would be constructed in the center of Arc Way in front of this driveway to ensure that turns would be limited. Both driveways would have a decorative stamped concrete border and would be 33 feet in width per City of Ripon standards.

The project proposes the installation of 54 parking spaces, all but one of which would be for passenger vehicles. The one exception would be a loading space between the two buildings. Most parking spaces would be of standard size – 10 feet by 17 feet. Four of the parking spaces would be designated for handicap parking, with two spaces in front of each building. All handicap spaces would be van accessible. The parking spaces would be located mainly in front of the buildings and along the eastern and southern boundaries of the project site.

The project proposes the installation of a bicycle rack that would accommodate three bicycles, in accordance with the requirements of the Ripon Municipal Code and the California Green Building Standards Code (CALGreen). The bicycle rack, ground mounted on a concrete pad, would be located near the southeast corner of the proposed commercial/retail building.

The project also proposes the installation of five electric vehicle charging stations along the southern boundary of the project site. One station would be accessible to vans for disabled persons, while two other stations would be "ambulatory" stations for people with limited or temporary mobility challenges. The other two would be standard electric vehicle stations.

The project will include installation of a new roundabout at the existing Fulton Avenue / Arc Way intersection. The roundabout will be installed by the applicant, subject to an applicant/City agreement for reimbursement of costs over and above the applicant's fair share of the improvement.

Utilities

The project proposes to connect to existing water and sewer lines operated by the City for potable water, irrigation water, and sanitary sewer services. A 12-inch diameter potable water line is beneath Frontage Road, as is a 12-inch diameter non-potable water line. It is expected that the project would connect to the latter as a source of irrigation water for the proposed landscaping.

The project would connect to the City's wastewater collection system by existing sewer lines. Existing lines with manholes are available north and south of the project site in the adjacent street. In anticipation of potential restaurant uses in the future, the project proposes the installation of a grease interceptor near the commercial/retail building.

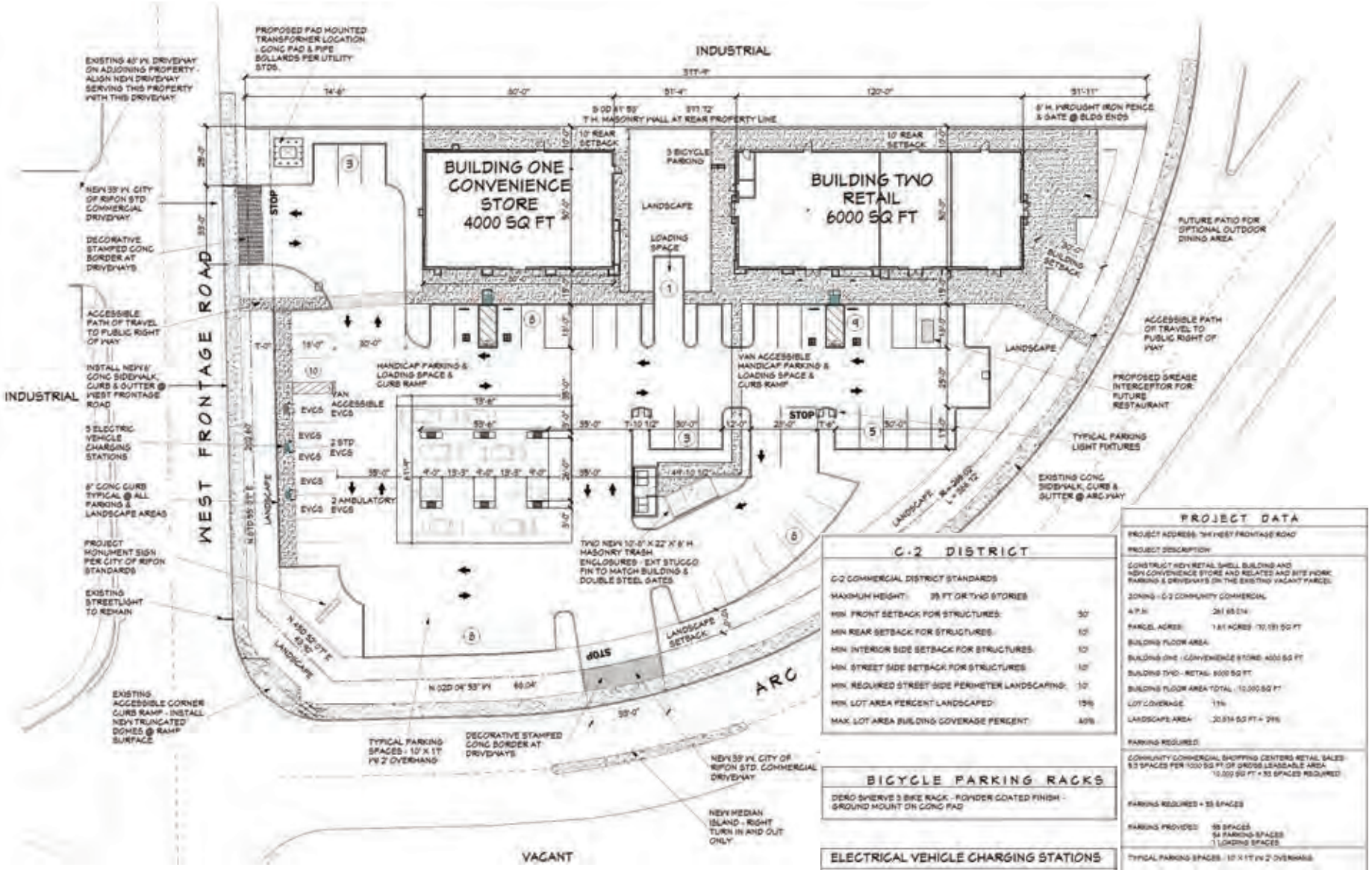
The project also proposes to connect to the City's storm drainage system through existing lines. Storm drainage lines with manholes are available beneath Frontage Road and Arc Way.

2.3 Permits and Approvals

The proposed project would require the approval of a Major Site Plan Permit, involving a Major Site Plan Review. According to Ripon Municipal Code Section 16.72.010, the purpose of a Site Plan Review is to provide a method for reviewing proposed uses that possess characteristics that require a special appraisal to determine if the uses have the

potential to affect adversely other land uses, transportation, or facilities in the vicinity. The Major Site Plan Permit is subject to the review and approval of the Ripon Planning Commission.

Should the project be approved, building and grading permits from the City would be required, along with an encroachment permit for any work in City streets. As a fueling station is proposed, the project would require an Authority to Construct and a Permit to Operate from the San Joaquin Valley Air Pollution Control District (SJVAPCD). Installation of underground fuel storage tanks would require approval from the San Joaquin County Environmental Health Department. Permits or approvals that may be required from other agencies are described in Chapter 3.0, Environmental Checklist.



C-2 DISTRICT

C-2 COMMERCIAL DISTRICT STANDARDS	
MAXIMUM HEIGHT:	35 FT OR TWO STORIES
MIN. FRONT SETBACK FOR STRUCTURES:	50'
MIN REAR SETBACK FOR STRUCTURES:	10'
MIN. INTERIOR SIDE SETBACK FOR STRUCTURES:	10'
MIN. STREET SIDE SETBACK FOR STRUCTURES:	10'
MIN. REQUIRED STREET SIDE PERIMETER LANDSCAPING:	10'
MIN. LOT AREA PERCENT LANDSCAPED:	15%
MAX. LOT AREA BUILDING COVERAGE PERCENT:	40%

BICYCLE PARKING RACKS

DERO SHERVE 3 BIKE RACK - POWDER COATED FINISH - GROUND MOUNT ON CONC PAD

ELECTRICAL VEHICLE CHARGING STATIONS

ELECTRIC VEHICLE CHARGING STATIONS
CBC 11B-228.3

VAN ACCESSIBLE REQUIRED - 1 SPACE
STANDARD ACCESSIBLE REQUIRED - 2 SPACES
AMBULATORY REQUIRED - 2 SPACES

VAN ACCESSIBLE SPACE IS 12' WIDE X 18' DP + 5' I/E ACCESS AISLE
STANDARD ACCESSIBLE IS 9' I/E X 18' DP
AMBULATORY IS 10' I/E X 18' DP

PROJECT DATA

PROJECT ADDRESS: 344 WEST FRONTAGE ROAD

PROJECT DESCRIPTION:

CONSTRUCT NEW RETAIL SHELL BUILDING AND NEW CONVENIENCE STORE AND RELATED AND SITE WORK PARKING & DRIVEWAYS ON THE EXISTING VACANT PARCEL

ZONING - C-2 COMMUNITY COMMERCIAL

A.P.N: 261 65 014

PARCEL ACRES: 1.61 ACRES (70,131 SQ FT

BUILDING FLOOR AREA:

BUILDING ONE - CONVENIENCE STORE: 4000 SQ FT

BUILDING TWO - RETAIL: 6000 SQ FT

BUILDING FLOOR AREA TOTAL: 10,000 SQ FT

LOT COVERAGE: 15%

LANDSCAPE AREA: 20,814 SQ FT + 29%

PARKING REQUIRED:

COMMUNITY COMMERCIAL SHOPPING CENTERS RETAIL SALES: 5.5 SPACES PER 1000 SQ FT OF GROSS LEASABLE AREA
10,000 SQ FT = 55 SPACES REQUIRED

PARKING REQUIRED = 55 SPACES

PARKING PROVIDED: 59 SPACES
54 PARKING SPACES
1 LOADING SPACES

TYPICAL PARKING SPACES - 10' X 17' W/ 2' OVERHANG

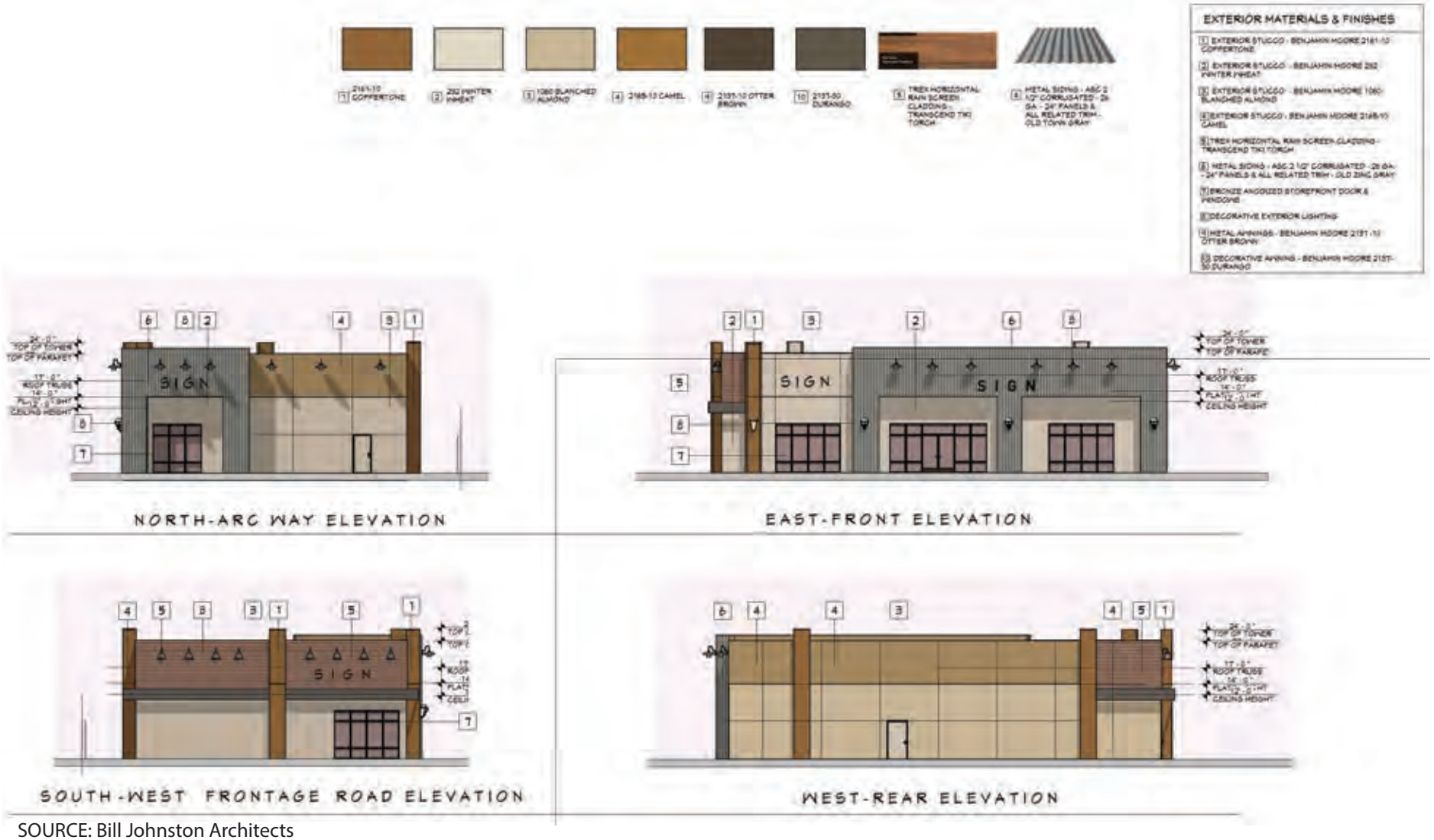
BICYCLE PARKING REQUIRED: RIPON MUNICIPAL CODE -

ONE BICYCLE SPACE PER 20 REQUIRED PARKING SPACES
CAL GREEN REQUIRES BICYCLE PARKING AS 5 PER CENT OF MOTORIZED VEHICLE PARKING REQUIRED

55 REQUIRED PARKING SPACES = 3 BICYCLE SPACES REQUIRED

SOURCE: Bill Johnston Architects

Figure 2-1
PROJECT SITE

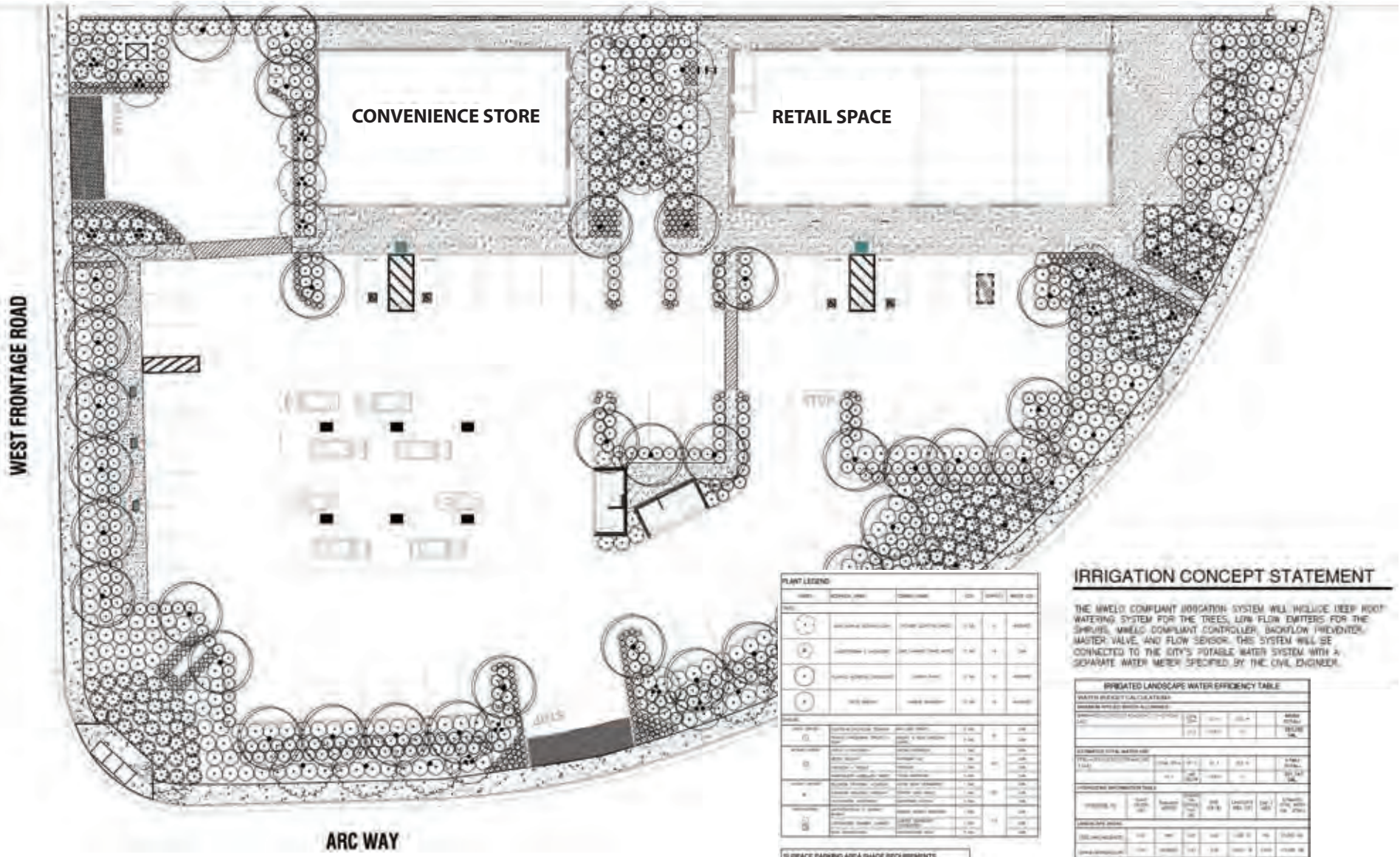


SOURCE: Bill Johnston Architects

Figure 2-2
PROJECT ELEVATIONS A

SOURCE: Bill Johnston Architects

Figure 2-3
PROJECT ELEVATIONS B



SOURCE: Bill Johnston Architects

Figure 2-4
PROPOSED LANDSCAPE PLAN

3.0 ENVIRONMENTAL CHECKLIST

The following environmental evaluation considers the potential environmental effects of City approval of the proposed project, as described in Chapter 2.0, Project Description. The format of this evaluation is based on the Environmental Checklist presented in CEQA Guidelines Appendix G.

3.1 AESTHETICS

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

Environmental Setting

The project site consists of vacant, level land covered by grasses and weeds. No trees or other distinctive visual or scenic features are on the project site. Views from the project site are of residential areas to the north and northeast, light industrial development to the west and south, and vacant land to the east.

The recently revised Appendix G of the CEQA Guidelines mentions California Public Resources Code Section 21099, which states that the aesthetic and parking impacts of residential, mixed-use residential, or employment center projects on an infill site within a transit priority area shall not be considered significant effects under CEQA. The project may be considered an infill site. However, the project is not within a transit priority area, and the project is not considered one of the three projects listed in Section 21099. Therefore, the aesthetic impacts of the project are analyzed in this document.

Environmental Impacts and Mitigation Measures

a) Scenic Vistas.

Scenic vistas in the Ripon area include some views of agricultural lands outside the City limits and distant views of the Coast Ranges to the west and the Sierra Nevada to the east from some locations. The project is within a mostly developed area where these views are not available. The project involves the construction of new commercial buildings and related site improvements, which have the potential to contribute to obstruction of distant views. However, given their location, one-story height, and existing obstruction in the area, project structures would not substantially affect views of scenic vistas. The project would have no impact on scenic vistas.

b) Scenic Resources and Highways.

The project site is topographically flat and has no distinctive features. There are no outstanding scenic features such as trees or rock outcroppings on the project site. According to the California Department of Transportation (Caltrans) list of designated scenic highways under the California Scenic Highway Program, there are only two officially designated state scenic highways within San Joaquin County: Interstate 5 from the Stanislaus County Line to Interstate 580 (0.7 miles), and Interstate 580 from I-5 to the Alameda County Line (15.4 miles), both in southwestern San Joaquin County (Caltrans 2019). San Joaquin County has designated several local scenic routes; the closest to the project site is Austin Road south of SR 99, southeast of the project site (San Joaquin County 2016). None of these designated State or local scenic routes are in the project vicinity. The project would have no impact on scenic resources or scenic routes.

c) Visual Character and Quality.

As noted, the project site is a vacant parcel covered with grasses and weeds. The main public viewing areas for the project site are Frontage Road and Arc Way. From these roads, the visual quality of the project site is considered low, as it lacks any distinctive visual features. The project, with its design and landscaping, may be considered an improvement to the existing on-site aesthetics.

Ripon Municipal Code Section 16.20.030 states that a development project in the C-2 zone, the zoning for the project site, must landscape a minimum of 15 percent of the building site. Figure 2-4 in Chapter 2.0, Project Description, shows the proposed project site landscaping, which covers approximately 29 percent of the project site. This exceeds the landscaping requirements of the C-2 zone.

Ripon Municipal Code Chapter 16.148 sets forth landscaping standards for development projects. A landscape plan must be prepared by a landscape designer, a licensed landscape architect, or other qualified person. Each application for a permit must include plans and written material describing all existing trees, including species, height, diameter, and condition, and showing how any applicable site landscaping or planting area requirements are to be met. The landscaping design, shown in Figure 2-4, appears to be consistent with

the requirements of Chapter 16.148. Project impacts on visual character and quality would be less than significant.

d) Light and Glare.

There is currently no lighting or features that may produce glare on the project site, as it is vacant. Project construction would involve the installation of lighting, mainly exterior lighting on the buildings, beneath the canopy, on signage and lighting in parking areas. This lighting would likely increase the amount of indirect illumination on adjacent properties. Most adjacent properties are, however, either vacant or have light industrial development, neither of which are sensitive to changes in illumination levels. However, the residences north and northeast of the project site would be sensitive to substantial changes in lighting levels.

Ripon Municipal Code Section 16.156.080 sets forth requirements related to light and glare. Exterior lighting must be energy efficient and shielded or recessed so that direct glare and reflections are contained within the boundaries of the parcel and must be directed downward and away from adjoining properties and public rights-of-way. In addition, no use shall cause a glare on lots developed residentially, zoned for residential use, or shown as residential on the General Plan, or cause glare on a street or alley. It is expected that the project would comply with the requirements of Section 16.156.080. Therefore, project impacts on light and glare are considered less than significant.

3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✓
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use, or conversion of forest land to non-forest use?	☐	☐	☐	✓

Environmental Setting

The project site is vacant land. A review of historical site photographs available on Google Earth indicates that orchard trees were on the project site as recently as 1993, but no agricultural activity has occurred on the site since then.

The Important Farmland Maps, prepared by the California Department of Conservation as part of its Farmland Mapping and Monitoring Program, designate the viability of lands for farmland use, based on the physical and chemical properties of the soils and other factors. The maps categorize farmland, in decreasing order of soil quality, as "Prime Farmland," "Unique Farmland," and "Farmland of Statewide Importance." Collectively, these categories are referred to as “Farmland” in the CEQA Checklist in Appendix G of the CEQA Guidelines and in this document. There are also designations for grazing land and for urban/built-up areas, among others. According to the 2018 Important Farmland Map of San Joaquin County, the most recent map available, the project site contains land designated as Urban and Built-Up Land (FMMP 2018).

Environmental Impacts and Mitigation Measures

a) Farmland Conversion.

The project site is designated as Urban and Built-Up Land, which is not Farmland as defined by CEQA Guidelines Appendix G. Therefore, the project would not convert Farmland to non-agricultural uses. The project would have no impact on Farmland conversion.

b) Agricultural Zoning and Williamson Act Contracts.

The project site is zoned C-2 – Community Commercial. It is not an agricultural zone, and the Ripon General Plan has not designated the project site for agricultural use. The Williamson Act is State legislation that seeks to preserve farmland by offering property tax breaks to farmers who sign a contract pledging to keep their land in agricultural use. The project site is not under a Williamson Act contract. The project would have no impact on agricultural zoning or Williamson Act lands.

c, d) Forest Land Zoning and Conversion.

The project site is not used, zoned, or otherwise designated for forestry use. The project site does not support any trees, so no forest land potentially available for commercial use exists. The project would have no impact on forest land zoning or forest land conversion.

e) Indirect Conversion of Farmland and Forest Land.

As noted in c, d) above, there are no forest lands in the project vicinity. Therefore, the project would have no impact related to indirect conversion of forest land. There is no land currently used for agriculture adjacent to the project site. A review of Google Earth site photographs indicated that the land east of the project site had been used for orchard as recently as 2002. However, the trees were apparently removed the following year, and this land has been vacant since. Moreover, the San Joaquin County Important Farmland map

has designated this parcel as Urban and Built-Up Land, not Farmland as defined by CEQA Guidelines Appendix G. The project would have no impact related to the indirect conversion of Farmland or forest land.

3.3 AIR QUALITY

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

Environmental Setting

Air Quality Status

The project site is within the San Joaquin Valley Air Basin. The San Joaquin Valley Air Pollution Control District (SJVAPCD), which includes the City of Ripon, has jurisdiction over most air quality matters in the Air Basin, except for vehicle emissions. Vehicle emissions are under the jurisdiction of the California Air Resources Board (ARB).

The SJVAPCD is tasked with implementing programs and regulations required by both the federal and California Clean Air Acts. Under their respective Clean Air Acts, both the federal government and the State of California have established ambient air quality standards for six criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. California has four additional criteria pollutants under its Clean Air Act. Table 3-1 shows the current attainment status of the Air Basin relative to the federal and State ambient air quality standards for criteria pollutants. Except for ozone and particulate matter, which are discussed below, the Air Basin is in attainment of, or unclassified for, all federal and State ambient air quality standards.

TABLE 3-1
SAN JOAQUIN VALLEY AIR BASIN ATTAINMENT STATUS

	Designation/Classification	
Criteria Pollutant	**Federal Primary Standards**	**State Standards**
Ozone - One hour	No Federal Standard	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_x)	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_x)	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2023.

Air Pollutants of Concern

The San Joaquin Valley Air Basin is designated a non-attainment area for ozone. Ozone is not emitted directly into the air. It is formed when reactive organic gases (ROG) and nitrogen oxides (NO_x), referred to as "ozone precursors," react in the atmosphere in the presence of sunlight. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. The SJVAPCD currently has a 2022 Plan for the 2015 8-Hour Ozone Standard and the 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard to attain federal ambient air quality standards for ozone.

The Air Basin is also designated a non-attainment area for respirable particulate matter, a mixture of solid and liquid particles suspended in air, including dust, pollen, soot, smoke, and liquid droplets. In the San Joaquin Valley, particulate matter is generated by a mix of rural and urban sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled; consequently, both the federal and state air quality standards for particulate matter apply to particulates 10 micrometers or less in diameter (PM_{10}) and to particulates less than 2.5 micrometers in diameter ($PM_{2.5}$), which are carried

deeper into the lungs. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. The SJVAPCD currently has a 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards to attain federal ambient air quality standards for $PM_{2.5}$ and the 2007 PM10 Maintenance Plan to maintain its current PM_{10} attainment status.

Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air, unlike ozone. The main source of CO in the San Joaquin Valley is on-road motor vehicles (SJVAPCD 2015). The San Joaquin Valley Air Basin is in attainment/unclassified status for CO; as such, the SJVAPCD has no CO attainment plans. High CO concentrations may, however, occur in areas of limited geographic size, referred to as "hot spots," which are ordinarily associated with areas of highly congested traffic.

In addition to the criteria pollutants, the ARB has identified other air pollutants as toxic air contaminants (TACs) – pollutants that may cause acute or chronic long-term health effects, such as cancer. Some TACs may cause adverse effects even at low levels. Diesel particulate matter is the most common TAC, generated mainly as a product of combustion in diesel engines. Other TACs are less common and are typically associated with industrial activities.

Air Quality Rules and Regulations

As previously noted, the SJVAPCD has jurisdiction over most air quality matters in the Air Basin. It implements the federal and California Clean Air Acts, and the applicable attainment and maintenance plans, through local regulations. The SJVAPCD has developed plans to attain State and federal standards for ozone and particulate matter, which include emissions inventories to measure the sources of air pollutants and the use of computer modeling to estimate future levels of pollution and ensure that the Valley will meet air quality goals (SJVAPCD 2015). A State Implementation Plan for CO has been adopted by the ARB for the entire state. The SJVAPCD regulations that would be applicable to the project are summarized below.

Regulation VIII (Fugitive Dust PM10 Prohibitions)

Rules 8011-8081 are designed to reduce PM_{10} emissions, predominantly dust/dirt, that are generated by human activity, including construction and demolition, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

Rule 4101 (Visible Emissions)

This rule prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.

Rule 9510 (Indirect Source Review)

Rule 9510, also known as the Indirect Source Rule, is intended to reduce or mitigate emissions of NO_x and PM_{10} from new development in the SJVAPCD including construction and operational emissions. This rule requires specific percentage reductions in estimated on-site construction and operation emissions, and/or payment of off-site mitigation fees for required reductions that cannot be met on the project site. Construction emissions of NO_x and PM_{10} exhaust must be reduced by 20% and 45%, respectively. Operational emissions of NO_x and PM_{10} must be reduced by 33.3% and 50%, respectively. Rule 9510 applies to commercial development projects of 2,000 square feet or more; therefore, the project would be subject to Rule 9510.

In addition, the SJVAPCD has established rules applicable to emissions from fueling stations:

Rule 2201 (New and Modified Stationary Source Review Rule)

New stationary sources and modifications of existing stationary sources that may emit criteria pollutants must obtain an Authority to Construct and Permit to Operate the proposed facility. Emissions that exceed impact thresholds must include emission controls and may require additional mitigation. To protect local and regional public health and safety, fueling station applications are reviewed under Rule 2201 for compliance with SJVAPCD rules. SJVAPCD review of these applications includes consideration of proposed vapor recovery equipment and whether the controlled volatile organic compound emissions require offsets or trigger public notice requirements.

Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels and Bulk Plants)

Rule 4621 prohibits the transfer of gasoline from a delivery vessel into a stationary storage container unless the container is equipped with an ARB-certified permanent submerged fill pipe and an ARB certified pressure-vacuum relief valve and utilizes an ARB-certified Phase I vapor recovery system.

Rule 4622 (Transfer of Gasoline into Vehicle Fuel Tanks)

Rule 4622 prohibits the transfer of gasoline from a stationary storage container into a motor vehicle fuel tank with a capacity greater than five gallons, unless the gasoline dispensing unit used to transfer the gasoline is equipped with and has in operation an ARB-certified Phase II vapor recovery system.

Environmental Impacts and Mitigation Measures

In 2015, the SJVAPCD adopted a revised Guide for Assessing and Mitigating Air Quality Impacts. The Guide defines an analysis methodology, thresholds of significance, and mitigation measures for the assessment of air quality impacts for projects within SJVAPCD's jurisdiction. Table 3-2 shows the CEQA thresholds for significance for

pollutant emissions within the SJVAPCD. The significance thresholds apply to emissions from both project construction and project operations.

The California Emissions Estimator Model (CalEEMod) was used to estimate both construction and operational emissions from the proposed project. The CalEEMod results are shown in Appendix A of this document. Table 3-2 shows the maximum project construction emissions in a calendar year and the annual operational emissions without mitigation. Project construction is assumed to occur within one calendar year.

TABLE 3-2
SJVAPCD SIGNIFICANCE THRESHOLDS AND PROJECT EMISSIONS

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
SJVAPCD Significance Thresholds[1]	**10**	**10**	**100**	**27**	**15**	**15**
Construction Emissions[2]	0.06	0.34	0.46	<0.01	0.02	0.02
Above Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Operational Emissions[3]	2.02	1.50	11.2	0.02	2.12	0.56
Above Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Applicable to both construction and operational emissions.
[2] Maximum emissions in a calendar year.
[3] Tons per year under unmitigated conditions.
Notes: ROG – reactive organic gases; NO_x – nitrogen oxide; CO – carbon monoxide; SO_x – sulfur oxide; PM_{10} – particulate matter 10 microns in diameter; $PM_{2.5}$ – particulate matter 2.5 microns in diameter.
Sources: CalEEMod Version 2022.1.1.22, SJVAPCD 2015.

Fueling station operations would involve the dispensing of gasoline, which can emit vapors that are considered TACs, such as benzene, ethyl benzene, toluene, and xylene. The ARB and the California Air Pollution Control Officers Association have developed a Gasoline Service Station Industrywide Risk Assessment Look-up Tool to screen service stations for their cancer and other risks. The tool takes the estimated fuel throughput (i.e., amount of fuel dispensed at a given time) of the proposed service station and estimates the potential increase in risk from emissions associated with fuel dispensing based on distances to the nearest sensitive receptors. The results of this screening are discussed below.

a) Air Quality Plan Consistency.

SJVAPCD has attainment plans for ozone and particulate matter, while the State has a CO attainment plan. As indicated in Table 3-2, project construction and operational emissions would not exceed the applicable SJVAPCD significance thresholds. Since all project emissions are estimated to be below their respective SJVAPCD significance thresholds, the project would be consistent with adopted reduction plans for ozone, particulate matter, and CO.

While project emissions would not be significant, the project would still be required to comply with applicable SJVAPCD rules and regulations, which would further reduce

potential air quality impacts. As noted, SJVAPCD Regulation VIII contains measures to reduce fugitive dust emissions during construction. Dust control provisions are also routinely included in site improvement plans and specifications, along with construction contracts. In addition, the project would be subject to SJVAPCD Rule 9510, which requires specific NO_x and PM_{10} reductions from construction exhaust and operational emissions. Compliance with Rule 9510 and dust control requirements would further reduce project impacts related to air quality plans that are already less than significant.

b) Cumulative Emissions.

As noted in a) above, project operational emissions would not exceed SJVAPCD significance thresholds. Future attainment of federal and State ambient air quality standards is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the application of significance thresholds for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Pursuant to the SJVAPCD's guidance, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable federal or State ambient air quality standards. As noted, project emissions would not exceed SJVAPCD significance thresholds. Therefore, the cumulative impacts of these emissions are considered less than significant.

c) Exposure of Sensitive Receptors to Pollutants.

As defined in the Guide for Assessing and Mitigating Air Quality Impacts, "sensitive receptors" include residences, schools, parks and playgrounds, day care centers, nursing homes, and hospitals (SJVAPCD 2015). The nearest sensitive receptors to the project site are the single-family residences to the north and northeast. The nearest residence to the project site is approximately 200 feet northeast of the site center.

Exposure of sensitive receptors to project construction emissions would be short-term and therefore would not have a lasting impact on health or well-being. As indicated in Table 3-2 above, project operational emissions would not exceed SJVAPCD significance thresholds. As discussed in a) above, the significance thresholds were established in part to ensure consistency with the objectives of air quality attainment plans adopted by the SJVAPCD. These plans are intended to have the Air Basin attain both federal and State ambient air quality standards, including federal primary standards designed to protect human health. Sensitive receptors in the vicinity of the project site would not be exposed to any substantial air pollutant emissions from project construction or operations. The project would have no impact on sensitive receptors.

CO hotspots have the potential to expose receptors to emissions that violate state and/or federal CO standards, even if the broader air basin is in attainment of these standards. The SJVAPCD guide indicates that a project would create no violations of the CO standards if neither of the following criteria are met (SJVAPCD 2015):

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or

- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity (See Section 3.17, Transportation, for an explanation of LOS).

A Traffic Impact Analysis of the project (see Section 3.17, Transportation) indicates that the Fulton Avenue/Arc Way intersection would experience LOS of E or F under existing traffic conditions, and LOS F only with project traffic. However, transportation improvement recommendations made in the Traffic Impact Analysis would improve LOS at this intersection to above E. With recommended improvements, the project would have no adverse impact related to CO emissions.

d) Odors and Other Emissions.

The project proposes the development of a gas station and retail center, with no development of significant sources of odors such as industrial plants and wastewater treatment plants. Retail centers do not generate odors in amounts that could affect sensitive receptors, which for this project would be the nearby residences. Fuel odors from dispensing operations would be localized and are not expected to extend beyond the fuel dispensing area, particularly since the project would be required to comply with SJVAPCD Rules 4621 and 4622 as noted above.

The main emissions of concern that could affect sensitive receptors are TACs. These would include diesel particulate matter emissions, prolonged exposure to which could lead to serious health effects, including cancer. One source of diesel particulate matter emissions is diesel engines in construction equipment. Construction equipment would be used only until project construction work is completed. Project construction activities would not result in prolonged exposure of sensitive receptors to diesel particulate matter emissions, which would be a health concern.

As noted, fueling station operations would involve the dispensing of gasoline, which can emit vapors that are considered TACs, such as benzene, ethyl benzene, toluene, and xylene. Also, truck traffic to and from the project site, along with onsite truck movement and idling, could generate emissions of diesel particulate matter, which is also considered a TAC. The exhaust PM_{10} emissions calculated by CalEEMod provide a reasonable representation of diesel particulate matter emissions that would be generated by the project. According to the CalEEMod results, the project would generate approximately 0.02 tons of exhaust PM_{10} annually, or approximately 0.11 pounds per day. This amount is small and expected to dissipate readily before it reaches sensitive receptors.

As noted, the ARB and the California Air Pollution Control Officers Association have developed a Gasoline Service Station Industrywide Risk Assessment Look-up Tool to screen service stations for their cancer and other risks. For this project, the maximum estimated fuel throughput is 2,500 gallons of gasoline and diesel fuel per day. As noted, the nearest sensitive receptor is a residence approximately 200 feet away, or approximately

61 meters. To provide conservative results, risk is also calculated for exposure of the nearest worker off the project site, considered to be 70 meters away.

The results of the Look-up Tool, available in Appendix A, indicate that the cancer risk at the residence would increase by 1.03 cancers per million, and at the nearest worker by 0.35 cancers per million. Both results are below the SJVAPCD significance threshold of 10 per million. The chronic and acute non-cancer hazard indices are 0.02 and 0.48, respectively, both of which are below the SJVAPCD significance threshold of 1 for each index. These results indicate that public health risks associated with the construction or operation of the proposed project would not lead to significant public health risks.

SJVAPCD Rules 4621 and 4622 would require the installation of vapor recovery systems, which would reduce the potential exposure of people using fuel pumps to potentially toxic emissions. The SJVAPCD may impose other conditions as warranted as part of its review conducted under SJVAPCD Rule 2201 as needed to prevent adverse air toxics effects on sensitive receptors in the project vicinity. Overall, project impacts related to odors and other emissions would be less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			✓	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				✓

Environmental Setting

The project site is a vacant site within a mostly developed area. Aside from the project site, the only open space area in the vicinity is a parcel of vacant land to the east. Roads with light to moderate vehicle traffic border the project site except along its western boundary.

BaseCamp Environmental conducted a field survey of the project site. The project site is overgrown with grasses and weeds. No trees or shrubs, including blue elderberry, were observed. There are no streams, ponds, or other waters on or adjacent to the project site. No birds or other wildlife were observed on the project site, although there was evidence of small mammal burrowing.

Special-Status Species

Special-status species are plant or wildlife species that are in one or more of the following categories:

- Legally protected under the federal Endangered Species Act, the California Endangered Species Act, or other regulations.
- Designated rare, threatened, or endangered and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS).
- Considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat.
- Considered rare or endangered under the conditions of CEQA Guidelines Section 15380, such as species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California by the California Native Plant Society, and species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on List 3 in the California Native Plant Society Inventory.

Searches of the California Natural Diversity Database (CNDDB), maintained by the California Department of Fish and Wildlife (CDFW), and of the IPaC database, maintained by the U.S. Fish and Wildlife Service. were conducted. The results of the searches are in Appendix B and summarized in Table 3-3, which lists the special-status plant and wildlife species that have been documented in the greater project vicinity or for which there is potentially suitable habitat on the project site. This table also includes an assessment of the likelihood of occurrence of each of these species on the site. Table 3-3 excludes fish species

as there are no streams or bodies of water on or adjacent to the project site. It also excludes species for which their data status is listed in the CNDDB as "unprocessed," meaning that the data for the species have not been reviewed by the CDFW for accuracy.

TABLE 3-3
SPECIAL-STATUS SPECIES AND POTENTIAL FOR OCCURRENCE

Common Name	Scientific Name	Fed. Status[1]	State Status[2]	CNPS List[3]	Habitat	Potential for Occurrence
Plants						
Lesser saltscale	*Atriplex minuscula*	None	None	1B	Chenopod scrub, playas, valley and foothill grassland; in sandy alkaline soils.	Unlikely: the site does not provide suitable habitat.
Delta button-celery	*Eryngium racemosum*	None	E	1B	Seasonally inundated (usually floodplain) riparian scrub with a clay substrate.	Unlikely: the site does not provide suitable habitat.
Alkali-sink goldfields	*Lasthenia chrysantha*	None	None	1B	Vernal pools.	Unlikely: there are no vernal pools on the project site.
California alkali grass	*Puccinellia simplex*	None	None	1B	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pool habitats; in alkaline, vernally mesic sinks, flats, and lake margins.	Unlikely: the site does not provide suitable habitat.
Birds						
Swainson's hawk	*Buteo swainsoni*	None	T	N/A	Breeds in stands of tall trees in open areas. Requires adjacent suitable foraging habitats such as grasslands or alfalfa fields supporting rodents.	Possible: vacant land in the project vicinity may provide marginal foraging habitat, and trees near the site may be suitable for nesting.
Aleutian cackling goose	*Branta hutchinsii leucopareia*	None	WL	N/A	Winters in the Sacramento and San Joaquin Valleys. Require inland lakes and marshes that provide roosting areas. Foraging habitat consists	Unlikely: the site does not provide suitable roosting or foraging habitat.

Common Name	Scientific Name	Fed. Status[1]	State Status[2]	CNPS List[3]	Habitat	Potential for Occurrence
					mostly of agricultural lands	
Tricolored blackbird	*Agelaius tricolor*	None	T	N/A	Requires open water and protected nesting substrate, usually cattails and riparian scrub with surrounding foraging habitat.	Unlikely: there is no open water on or near the site.
Least Bell's vireo	*Vireo bellii pusillus*	E	E	N/A	Nests in willow thickets and other shrubs, primarily in southern California riparian forests.	Unlikely: the site does not provide suitable habitat. This species is known primarily from southern California.
Yellow-billed cuckoo	*Coccyzus americanus*	T	E	N/A	Nests in mature riparian forests, along the broad, lower flood-bottoms of larger river systems.	Unlikely: the site does not provide suitable habitat.
Merlin	*Falco columbarius*	None	WL	N/A	Frequents open habitats at low elevation near water and tree stands. Favors coastlines, lakeshores, wetlands.	Unlikely: the site does not provide suitable habitat.
Mammals						
Riparian brush rabbit	*Sylvilagus bachmani riparius*	E	E	N/A	Dense riparian thickets along large rivers in Stanislaus and southern San Joaquin Counties.	Unlikely: the site does not provide suitable habitat.
San Joaquin Valley woodrat	*Neotoma fuscipes riparia*	E	SC	N/A	Dense riparian woodlands and scrub along major Central Valley rivers.	Unlikely: the site does not provide suitable habitat.
Reptiles and Amphibians						
California tiger salamander	*Ambystoma californiense*	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) and grassland/ woodland habitats	Unlikely: the site does not provide suitable habitat. This species occurs along the edges of the valley floor and foothills.

Common Name	Scientific Name	Fed. Status[1]	State Status[2]	CNPS List[3]	Habitat	Potential for Occurrence
					with summer refugia (i.e., burrows).	
Western spadefoot	*Spea hammondii*	None	SC	N/A	Breeds and lays eggs in seasonal water bodies such as deep vernal pools or stock ponds.	Unlikely: the site does not provide suitable aquatic habitat.
Northwestern pond turtle	*Actinemys marmorata*	PT	SC	N/A	Ponds, marshes, streams, and ditches with emergent aquatic vegetation and basking areas.	Unlikely: the site does not provide suitable aquatic habitat.
Invertebrates						
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	None	N/A	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely: there are no blue elderberry shrubs on the project site.
Vernal pool fairy shrimp	*Branchinecta lynchi*	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools on the site.
Conservancy fairy shrimp	*Branchinecta conservatio*	E	None	N/A	Vernal pools.	Unlikely: there are no vernal pools on the site.
Vernal pool tadpole shrimp	*Lepidurus packardi*	E	None	N/A	Vernal pools	Unlikely: there are no vernal pools on the site.
California linderiella	*Linderiella occidentalis*	None	S1	N/A	Vernal pools.	Unlikely: there are no vernal pools on the site.
Moestan blister beetle	*Lytta moesta*	None	S2	N/A	Grasslands in Central Valley and Sierra Nevada foothills	Unlikely: the site does not provide suitable habitat.
San Joaquin Valley giant flower-loving fly	*Rhaphiomidas trochilus*	None	S1	N/A	Dependent on areas of inland sand dunes.	Unlikely: the site does not provide suitable habitat. Known to exist only in Kern County.
Monarch butterfly	*Danaus plexippus*	C	None	N/A	Variety of habitats in California; larvae dependent on milkweed.	Unlikely: although the species could fly over the site during its migration, no extensive areas of milkweed were observed on the site.

Notes:

[1] T = Threatened; E = Endangered; C = Candidate for listing; PT = Proposed Threatened.

[2] T = Threatened; E = Endangered; CE = Candidate Endangered; SC= Species of Special Concern; FP = Fully Protected Species; S1 = Critically Imperiled Species per NatureServe Network; S2 = Imperiled Species per NatureServe Network; WL = on CDFW Watch List.

[3] 1B = rare, threatened, or endangered in California and elsewhere.

Waters of the U.S. and Wetlands

Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations 328 to include navigable waterways, their tributaries, and adjacent wetlands. Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Federal and state agencies regulate these waters. In April 2019, the State Water Resources Control Board (SWRCB) adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State*, which covers wetlands not regulated by federal agencies.

Habitat Conservation Plans

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) is a comprehensive program for assessing and mitigating the biological impacts of converting open space or biologically sensitive lands to urban development in San Joaquin County, including in Ripon. For the conversion of open space to non-open space uses that affect covered plant, fish, and wildlife species, the SJMSCP provides three compensation methods: preservation of existing sensitive lands, creation of new comparable habitat on the project site, or payment of fees that would be used to secure preserve lands outside the project site. In addition to fee payments, the SJMSCP identifies and requires the applicants to abide by Incidental Take Minimization Measures, which are protection measures that avoid direct impacts of development on special-status species (SJCOG 2000).

The City is a participant in the SJMSCP. The San Joaquin Council of Governments (SJCOG) implements the SJMSCP on a project-by-project basis. As a part of SJMSCP procedures, a SJMSCP biologist would perform a pre-construction survey of the project site prior to any ground disturbance, and Incidental Take Minimization Measures would be issued to the project based on the findings by the biologist.

Environmental Impacts and Mitigation Measures

a) Special-Status Species.

A search of the CNDDB and the IPaC identified 20 special-status plant and wildlife species as potentially occurring in the Ripon USGS topographical map quadrangle, excluding fish and “unprocessed” species. The IPaC database identified 12 wildlife special-status species, of which nine were also listed in the CNDDB.

The species listed in the CNDDB results generally require habitat that is aquatic or has substantial open spaces or natural vegetation. The project site, being within a developed area, has none of these habitats. Only one special-status species is considered to potentially occur in the project vicinity - Swainson’s hawk. Swainson’s hawk, a bird species listed as Threatened under the California Endangered Species Act, requires suitable foraging habitats such as grasslands or alfalfa fields supporting rodents, along with trees suitable for

nesting. The project site itself does not contain either of these features, while the vicinity has only limited available habitat.

As noted, the City is a participant in the SJMSCP, so the City would require the project to follow SJMSCP procedures, including the onsite survey and implementation of Incidental Take Minimization Measures if required, including for Swainson's hawk. With participation in the SJMSCP, project impacts on special-status species would be less than significant.

b) Riparian and Other Sensitive Habitats.

The project site does not have any riparian vegetation, as there are no streams on or adjacent to the site. No vernal pools or other sensitive habitats were observed on the site. The project would have no impact on riparian or other sensitive habitats.

c) State and Federal Jurisdictional Wetlands.

As noted, there are no streams, ponds, or other water features on or adjacent to the project site. The nearest stream to the project site is the Stanislaus River, approximately 1.2 miles to the southeast at its nearest. A review of the National Wetlands Inventory, available in Appendix B, plus the site visit, indicated no water or wetland features are present on the project site. The project would have no impact on State or federal jurisdictional wetlands.

d) Fish and Wildlife Movement.

As noted, there are no streams on or adjacent to the project site, so no fish movements would be affected by the project. There are no trees on the project site that protected migratory birds could use for nesting. There are two trees within the light industrial development near the southwestern corner of the project site, but they would not be affected by the project. Project impacts on fish and wildlife corridors and wildlife nesting sites would be less than significant.

e) Local Biological Requirements.

Chapter 16.46 of the Ripon Municipal Code establishes a Resource Conservation District, one of the purposes of which is to conserve and protect the natural resources along the Stanislaus River within the City's boundaries. As the project site is not along the Stanislaus River, Chapter 16.46 would not apply. The City has no other ordinances or regulations applicable to biological resources. The project would have no impact related to local biological requirements.

f) Conflict with Habitat Conservation Plans.

The City participates in the SJMSCP; as such, the project would comply with applicable provisions and measures of the SJMSCP as determined by SJCOG. No other habitat conservation plans apply to the project site. The project would have no impact related to conflict with habitat conservation plans.

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		✓		
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

Environmental Setting

The project site is situated within the San Joaquin Valley. Prehistoric populations in the valley were concentrated along river channels such as the Stanislaus River, as these were the areas with the richest available natural resources. The project site lies in the ethnographic territory of the Northern Valley Yokuts. Section 3.18, Tribal Cultural Resources, discusses the Yokuts in more detail. Archaeological research focused on the prehistory of the Ripon area has been limited and has been conducted almost entirely in the context of cultural resources management investigations.

The first documented European incursions into the region that would become San Joaquin County occurred in the early 19th century. The first Europeans to take up land along the Stanislaus River near where the Ripon settlement would develop were a group of Mormons under the leadership of Brigham Young in 1846. A settlement called New Hope was established, but it was abandoned after flooding in January 1847.

Several ferry crossings along the Stanislaus River near present-day Ripon were established. Among these was Murphy's Ferry, established in 1865. A settlement developed around this crossing, which became known as Stanislaus Station and Stanislaus City. In 1874, Amplias B. Crook, who opened a store and became a postmaster, proposed a new name for the settlement in honor of his hometown Ripon, Wisconsin. Ripon, California was established on December 21, 1874.

A principal commercial street began to develop through Ripon by the 1880s. Many of the local businesses supported the rapidly growing ranching and agricultural industries, which boomed in the early 20th century following the founding of the South San Joaquin Irrigation District (SSJID) in 1908. In 1945, the City of Ripon was incorporated.

Environmental Impacts and Mitigation Measures

a, b) Historical and Archaeological Resources.

There are no structures on the project site. A records search of the California Historical Resources Information System, conducted by the Central California Information Center,

did not find any recorded historical resources on the project site. The records search also did not find any recorded archaeological resources on or near the project site (CCIC 2024). A report on the records search is available in Appendix C.

Given past agricultural activities, it is unlikely that any intact historical or archaeological resources are on the project site. However, it is conceivable that project construction activities could unearth archaeological materials of significance that are currently unknown. The Central California Information Center considers Ripon to be relatively sensitive for the discovery of archaeological and historical resources (City of Ripon 2006b). Procedures to address discoveries if they should occur are set forth in the mitigation measure below. Implementation of this mitigation would reduce potential impacts to a level that would be less than significant.

Mitigation Measure:

CULT-1: If any subsurface cultural resources are encountered during construction of the project grading and excavation, the City Planning Department shall be notified and all construction activities within 50 feet of the encounter shall be halted until a qualified archaeologist can examine the discovered cultural materials and determine their significance. If the find is determined to be significant, then the archaeologist shall recommend further mitigation measures that would reduce potential effects on the find to a level that is less than significant. Recommended measures may include, but are not limited to, 1) preservation in place, or 2) excavation, recovery, and curation by qualified professionals.

If the resource is identified as a potential tribal cultural resource, then the City Planning Department shall contact the Northern Valley Yokuts and request a representative to visit the site and evaluate the find. The tribal representative, in consultation with other tribes if necessary, shall recommend measures for the disposition of the resource. The tribal representative would be allowed to monitor any remaining grading activities for potential disturbance of additional tribal resources.

The project developer shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written report to the City's Planning Department, consistent with the requirements of the CEQA Guidelines.

c) Human Burials.

There are no records of any human burials having taken place on the project site (see Section 3.18, Tribal Cultural Resources for a discussion of Native American burials). The Central California Information Center search did not find any record of human burials. Given past agricultural activities, it is unlikely that any intact human burials are on the

project site. However, it is conceivable that project construction activities could uncover a previously unknown burial.

CEQA Guidelines Section 15064.5(e) describes the procedure to be followed when human remains are uncovered in a location outside a dedicated cemetery. All work in the vicinity of the find shall be halted, and the County Coroner shall be notified to determine if an investigation of the death is required. If it is determined that the remains are Native American in origin, then the County Coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the Most Likely Descendants of the deceased Native American, and the Most Likely Descendants may make recommendations on the disposition of the remains and any associated grave goods with appropriate dignity. If a Most Likely Descendant cannot be identified or fails to make a recommendation, or the landowner rejects the recommendations of the Most Likely Descendant, then the landowner shall rebury the remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance.

Compliance with CEQA Guidelines Section 15064.5(e) would ensure that any human remains and associated grave goods encountered during project construction would be treated with appropriate dignity. Project impacts on human remains would be less than significant.

3.6 ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	✓	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	✓	☐

Environmental Setting

Electricity and natural gas are major energy sources for residences and businesses in California. In San Joaquin County, electricity consumption in 2022 totaled approximately 5,608 million kilowatt-hours, of which approximately 3,483 million kilowatt-hours were consumed by non-residential uses and the remainder by residential uses (CEC 2023a). In San Joaquin County, natural gas consumption in 2022 totaled approximately 186 million therms, of which approximately 96 million therms were consumed by non-residential uses and the remainder by residential uses (CEC 2023b).

Motor vehicle trips also account for substantial energy usage. The SJCOG estimated countywide daily vehicle miles traveled (VMT) was 17,015,116 miles in 2016, which led

to the consumption of approximately 1.29 million gallons of gasoline and diesel fuel per day (SJCOG 2022b).

California has implemented numerous energy efficiency and conservation programs that have resulted in substantial energy savings. The State has adopted comprehensive energy efficiency standards as part of its Building Standards Code, California Code of Regulations, Title 24. Part 6 of Title 24, known as the California Energy Code, contains energy conservation standards applicable to all residential and non-residential buildings throughout California, including schools and community colleges. These standards are occasionally updated. Also, the California Building Standards Commission adopted CALGreen, which became mandatory effective January 1, 2011. CALGreen sets forth mandatory energy efficiency measures for residential structures, which essentially require compliance with the latest building energy efficiency measures adopted by the State. The City has adopted the 2022 version of both the California Energy Code and CALGreen.

California has adopted a Renewables Portfolio Standard, which requires all electricity retailers in the state to generate 33% of electricity they sell from renewable energy sources (solar, wind, geothermal, etc.) by the end of 2020. Almost all of the electricity retail sellers reported meeting the 2020 compliance target (CPUC 2022). In 2015, SB 350 was signed into law, which increased the electricity generation requirement from renewable sources to 50% by 2030. In 2018, SB 100 was enacted, which accelerated the schedule for 50% electricity generation from renewable sources to 2026 and set a goal of 60% electrical generation from renewable sources by 2030. It also set the goal that zero-carbon resources will supply 100% of electricity to California by 2045.

Environmental Impacts and Mitigation Measures

a) Project Energy Consumption.

Project construction would involve fuel consumption and use of other non-renewable resources. Construction equipment used for such improvements typically runs on diesel fuel or gasoline. The same fuels typically are used for vehicles that transport equipment and workers to and from a construction site. However, construction-related fuel consumption would be finite, short-term, and consistent with construction activities of a similar character. This energy use would not be considered wasteful, inefficient, or unnecessary.

Electricity may be used for equipment operation during construction activities. It is expected that more electrical construction equipment would be used in the future, as it would generate fewer air pollutant emissions. This electrical consumption would be consistent with construction activities of a similar character; therefore, the use of electricity in construction activities would not be considered wasteful, inefficient, or unnecessary, especially since fossil fuel consumption would be reduced. Moreover, under California's Renewables Portfolio Standard, a greater share of electricity would be provided from renewable energy sources over time, so less fossil fuel consumption to generate electricity would occur.

The 2018 Commercial Buildings Energy Consumption Survey by the U.S. Energy Information Administration, the most recent such survey conducted, provides estimates for the amount of electricity and natural gas consumed by commercial activities based on type. Table 3-4 below shows the estimated energy consumption by the project assuming full activity, based on the assumed land uses described in Chapter 2.0, Project Description.

TABLE 3-4
ENERGY CONSUMPTION

	Electricity (kWh)		Natural gas (cubic feet)	
Commercial Type	**Per square foot[1]**	**Total**	**Per square foot[1]**	**Total**
Convenience store	50.7	263,539	27.4	142,425
Retail strip mall	20.6	88,992	48.7	210,384
TOTAL		**352,531**		**352,809**

Note: kWh – kilowatt-hour
[1] Source: EIA 2018.

The project would be required to comply with applicable provisions of the adopted California Energy Code and CALGreen in effect at the time of project approval. The provisions of these codes are intended to increase energy efficiency of buildings, thereby reducing energy consumption. Compliance with these standards would reduce energy consumption associated with project operations. Overall, project construction and operations would not consume energy resources in a manner considered wasteful, inefficient, or unnecessary. Project impacts related to energy consumption would be less than significant.

b) Consistency with Energy Plans.

The City does not have adopted plans for renewable energy or energy efficiency. However, the City has adopted the California Energy Code and CALGreen, both of which contain provisions that promote energy efficiency. The project would be required to comply with the applicable requirements of these two codes, which are designed to improve energy efficiency of structures, thereby forwarding State energy conservation goals. Project impacts related to energy plans would be less than significant.

3.7 GEOLOGY AND SOILS

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic-related ground failure, including liquefaction?			✓	
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?		✓		
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		

Environmental Setting

Existing Conditions

The project site is in the Central Valley, which is a topographically flat, northwest-trending trough about 50 miles wide and 450 miles long. The Geologic Map of the San Francisco-San Jose Quadrangle designates the underlying geology of the project site as the Modesto Formation, consisting of geologically recent sediments (Wagner et al. 1991).

The project site is relatively flat with minimal slope. The soil on the project site consists of Delhi loamy sand, 0 to 5 percent slopes. This is a very deep, somewhat excessively drained, nearly level soil formed in wind-modified alluvium derived from granitic rock sources. The permeability of Delhi soil is rapid, and runoff is slow. The water erosion hazard is slight, but the hazard of wind erosion is severe. The expansive (shrink-swell) potential of this soil is low (SCS 1992, NRCS 2024).

No faults, active or otherwise, have been identified in the vicinity of Ripon, and the nearest fault, the Tracy-Stockton Fault, is a buried, inactive fault located approximately 20 miles north. The closest active fault has been identified as the San Joaquin Fault, approximately 28 miles southwest. The Foothills Fault Zone, a potentially active fault zone, is approximately 15 miles east. The San Andreas Fault Zone is approximately 60 miles west. The Ripon area is subject to potential moderate to strong groundshaking (City of Ripon 2006b).

Paleontological resources, also known as fossils, are the remains or traces of prehistoric plants and animals. The database of the Museum of Paleontology at UC Berkeley shows that San Joaquin County has more than 800 documented fossil localities. Most paleontological specimens have been found in rock formations in the foothills of the Diablo Mountain Range, but remains of extinct animals could be found virtually anywhere in the County, especially along watercourses such as the San Joaquin River and its tributaries (San Joaquin County 2016).

Environmental Impacts and Mitigation Measures

a-i) Fault Rupture Hazards.

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 intends to identify faults within the State considered capable of generating damaging earthquakes and to regulate development near such faults to mitigate the hazard of ground ruptures. The California Geological Survey evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If a fault is determined to be active, then it is typically incorporated into a Special Studies Zone. There are no designated Special Study Zones in Ripon, including the project site (California Geological Survey 2024). The project would have no impact related to fault rupture hazards.

a-ii, iii) Seismic Hazards.

As noted, Ripon is within an area that could experience ground shaking. All structures built within the City are subject to the requirements of the California Building Code, the 2022 version of which has been adopted by the City. The California Building Code includes seismic safety provisions that require buildings to be constructed to withstand anticipated ground shaking, based on occupancy type.

When coarse sediments are saturated and compact during an earthquake, soils may lose strength and become fluid, a process called liquefaction. Water from voids may be forced to the ground surface, where it emerges in the form of mud spouts or sand boils. The potential for liquefaction is highest when groundwater levels are high in areas of loose, fine, sandy soils. As of Spring 2023, the groundwater level in the Ripon area is approximately 50 feet below the ground surface (San Joaquin County FCWCD 2023). Liquefaction occurs in areas with relatively shallow depths to groundwater. Therefore, the liquefaction potential on the project site is considered low.

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Because the project site is essentially flat, lateral spreading of soils is unlikely to occur. Project impacts related to seismic hazards are considered less than significant.

a-iv) Landslides.

The topography of the project site and surrounding area is flat; therefore, landslides would not occur. The project would have no impact related to landslides.

b) Soil Erosion.

As noted, the Delhi soil on the project site has a severe wind erosion hazard. However, compliance with dust control measures set forth in SJVAPCD Regulation VIII would minimize the potential wind erosion that could occur with the loosening of soils associated with construction activity.

The Delhi soil has a low water erosion hazard. However, project construction activities would likely loosen soils, making them more susceptible to water erosion. For all projects that disturb one acre of land or more, a Construction General Permit is required from the SWRCB. The permit requirements include preparation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer to address potential water quality issues. A SWPPP specifies the Best Management Practices (BMPs) needed to avoid or minimize adverse water quality impacts. Construction BMPs fall within the general categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control. BMPs applicable to the project are incorporated in the SWPPP as required, as well as project improvement plans and specifications, subject to the approval of the City Engineer. BMP function and effectiveness are monitored and reported, and remediation is required to address pollution occurrence. The project would also be required to implement post-construction BMPs, which are discussed in Section 3.10, Hydrology and Water Quality.

As the project would disturb more than one acre, it would be required to comply with the provisions of the Construction General Permit from the SWRCB, including preparation of a SWPPP, which is required by the mitigation measure below. Compliance with the mitigation measure, along with other applicable regulations, would minimize the amount of sediment that leaves the construction site and potential construction water quality effects, thereby reducing soil erosion impacts to a level that would be less than significant.

Mitigation Measure:

GEO-1: Prior to commencement of construction activity, the developer shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project and file a Notice of Intent with the State Water Resources Control Board (SWRCB) in compliance with the Construction General Permit and City of Ripon storm water requirements. The SWPPP shall be available on the construction site

at all times. The developer shall incorporate an Erosion Control Plan consistent with all applicable provisions of the SWPPP within the site improvement and building plans. The developer also shall submit the SWRCB Waste Discharger's Identification Number to the City prior to approval of development or grading plans.

c) Soil Instability.

Subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. Subsidence in the southern and central San Joaquin Valley has been attributed to overdraft of the groundwater. Historically, there have been no reports of subsidence and only small decreases in the groundwater table in the vicinity of Ripon (City of Ripon 2006b). Section 3.10, Hydrology and Water Quality, discusses groundwater issues in more detail.

No other potential issues of soil instability have been identified in the Ripon area, other than expansive soils, which are discussed in d) below. Project impacts related to soil instability would be less than significant.

d) Expansive Soils.

Expansive soils can lead to damage of buildings and supporting infrastructure if not addressed. As noted, the expansive soil potential of the Delhi soil on the project site is low; therefore, the potential expansive soil hazard is likewise low. Project impacts related to expansive soils would be less than significant.

e) Adequacy of Soils for Sewage Disposal.

The project would be connected to the City's wastewater system. It does not propose to install any septic system or other on-site wastewater disposal system. Because of this, the project would have no impact related to soil adequacy for sewage disposal.

f) Paleontological Resources and Unique Geological Features.

The project site is flat and contains no geological features that may be considered unique. There is no record of any paleontological resources in Ripon. Given the previous agricultural use of the project site, it is unlikely that intact paleontological resources would be found. However, the Modesto Formation that underlies the project site is considered to have a relatively high sensitivity for paleontological resources. Therefore, there is the possibility that paleontological resources that are currently unknown could be uncovered during project construction. Mitigation described below would require work to be stopped when paleontological resources are uncovered until these resources can be evaluated by a qualified paleontologist and recommendations made for their disposition. Implementation of this mitigation measure would reduce paleontological resource impacts to a level that would be less than significant.

Mitigation Measure:

GEO-2: If any subsurface paleontological resources are encountered during construction of the project, the City Planning Department shall be notified and all construction activities within 50 feet of the encounter shall be halted until a qualified paleontologist can examine these materials, determine their significance, and if significant recommend further mitigation measures that would reduce potential effects to a level that is less than significant. Such measures could include 1) preservation in place or 2) excavation, recovery, and curation by qualified professionals. The applicant shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written report to the City Planning Department, consistent with the requirements of the CEQA Guidelines.

3.8 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Environmental Setting

GHG Background

Greenhouse gases (GHGs) are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. GHGs are both naturally occurring and are emitted by human activity. GHGs include carbon dioxide, the most abundant GHG, as well as methane, nitrous oxide, and other gases. Potential climate change impacts occurring in the San Joaquin Valley include higher temperatures, longer and more severe droughts, more intense precipitation events, and more frequent and extensive wildfires (Fernandez-Bou et al. 2021).

Unlike the criteria air pollutants described in Section 3.3, Air Quality, GHGs have no "attainment" standards established by the federal or State government. In fact, GHGs are not generally thought of as traditional air pollutants because their impacts are global in nature, while air pollutants mainly affect the general region of their release to the atmosphere (SJVAPCD 2015). Nevertheless, the U.S. Environmental Protection Agency

(EPA) has found that GHG emissions endanger both the public health and public welfare under Section 202(a) of the Clean Air Act due to their impacts associated with climate change (EPA 2009).

GHG emissions in California in 2021, the most recent year for which data are available, were estimated at approximately 381.3 million metric tons carbon dioxide equivalent (CO_2e), which is below the 2020 GHG limit of 431 million metric tons CO_2e as set by AB 52 (see below). Transportation was the largest contributor to GHG emissions in California, with 38.2% of total emissions. Other significant sources include industrial activities, with 19.4% of total emissions, and electric power generation, both in-state and imported, with 16.4% of total emissions (ARB 2023). No data on GHG emissions in Ripon are available.

GHG Emission Reduction Plans

The State of California has implemented GHG emission reduction strategies through Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, which requires total statewide GHG emissions to reach 1990 levels by 2020, or an approximately 29% reduction from 2004 levels. For the target year of 2020, state GHG emissions were 369.2 million metric tons CO_2e, which was 61.8 million metric tons CO2e below the AB 52 target (ARB 2022a).

In 2016, Senate Bill (SB) 32 was enacted. SB 32 extends the GHG reduction objectives of AB 32 by mandating statewide reductions in GHG emissions to levels that are 40% below 1990 levels by the year 2030. The State has adopted an updated Scoping Plan that sets forth strategies for achieving the SB 32 target. The updated Scoping Plan continues many of the programs that were part of the previous Scoping Plans, including the cap-and-trade program, low-carbon fuel standards, renewable energy, and methane reduction strategies. It also addresses, for the first time, GHG emissions from the natural and working lands of California, including the agriculture and forestry sectors (ARB 2017).

In 2022, ARB adopted the 2022 Scoping Plan, which assesses progress towards achieving the SB 32 2030 reduction target and lays out a path to achieve carbon neutrality no later than 2045. Proposed strategies to achieve these reductions include rapid movement to zero-emission transportation, phasing out fossil fuel use for heating homes and buildings, restricting use of chemicals and refrigerants that are thousands of times more powerful at trapping heat than carbon dioxide, expanded development of renewable energy sources, increased use of natural and working lands for incorporating and storing carbon, and greater employment of carbon removal technology (ARB 2022b).

Cities and counties throughout California have prepared Climate Action Plans that outline how the local government will reduce GHG emissions, which are typically related to the 2020 emission reduction target set in the State's Climate Change Scoping Plan. Neither the City of Ripon nor San Joaquin County currently has a Climate Action Plan or other GHG reduction plan.

a, b) Project GHG Emissions and Consistency with GHG Reduction Plans.

The CalEEMod model estimated the total GHG construction and operational emissions associated with the project (see Appendix A). Table 3-5 presents the results of the CalEEMod run. "Mitigated emissions" are the result of project compliance with applicable laws, rules, and regulations, along with inclusion of project features that reduce GHG emissions. These include the following:

- Project buildings would consume less energy under the adopted 2022 California Energy Code than under the 2019 California Energy Code, which is the baseline used by CalEEMod.
- SB X7-7, enacted in 2009, sets an overall goal of reducing per capita urban water use by 20% by December 31, 2020. The California Green Building Code mandates a 20% reduction in indoor water use.
- AB 341 establishes the goal of diverting 75% of California's waste stream from landfills by 2020.

TABLE 3-5
PROJECT GHG EMISSIONS

GHG Emission Type	Unmitigated Emissions	Mitigated Emissions
Construction[1]	79.8	79.8
Operational[2]	2,539	2,533

[1] Total GHG emissions for construction period in metric tons carbon dioxide equivalent (CO_2e).
[2] Annual emissions in metric tons CO2e.
Sources: California Emissions Estimator Model v. 2020.4.0.

GHG construction emissions would be limited due to the length of time of construction activity; these emissions would cease once work is completed. Mitigated operational GHG emissions would be approximately 1% less than under business-as-usual (unmitigated) conditions.

The analysis of project impacts will be based on the 2017 California Scoping Plan. Approximately 83% of the GHG emission reduction programs in the Scoping Plan counted toward meeting the 29% objective for 2020 are State-level programs, with the remaining 17% to be achieved by programs at the local government level, including development review. Thus, the local action share of the 29% reduction would be 4.93%. Based on this, it can be assumed that a development project that achieves at least a 4.93% reduction in GHG emissions from business-as-usual levels would be consistent with the objectives of both State and SJVAPCD GHG reduction plans. The 1% reduction associated with the project would not exceed this local share. Therefore, further analysis is required.

The project is in an area where residences have limited access to convenience retail stores. As such, it could be expected to attract residents from the vicinity who would otherwise travel greater distances for retail services. The fueling station would draw many of its customers from local residents. As such, the project is expected to reduce the VMT in the area, which in turn would reduce GHG emissions from vehicles. The amount of VMT reduction cannot be estimated. However, as mobile emissions are the primary source of GHG emissions associated with the project, the reduction is expected to be significant.

The State of California has comprehensive GHG laws and regulations requiring reductions that affect project emissions. The project is subject to several State regulations applicable to project design, construction, and operation that would reduce GHG emissions, increase energy efficiency, and ensure compliance with the Scoping Plan. Legal mandates to reduce GHG emissions from vehicles, for example, would reduce project-related vehicular emissions. Other mandates that would reduce GHG emissions include reducing per capita water consumption and imposing waste management standards to reduce methane and other GHGs from solid wastes.

As discussed in Section 3.6, Energy, the project would be subject to codes that require energy efficiency measures, which would reduce the demand for electricity produced by fossil fuels – a major source of GHG emissions. Also, attainment of the targets of the Renewables Portfolio Standard would reduce the amount of electricity generated by fossil fuels, further reducing GHG emissions from energy sources.

Based on the information provided above, the project would be consistent with GHG reduction plans of the State. Project impacts related to GHG emissions and consistency with GHG emission reduction plans would be less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✓	

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		✓		
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				✓

Environmental Setting

This section focuses on hazards associated with hazardous materials, proximity to airports, and wildfires. Geologic and soil hazards are addressed in Section 3.7, Geology and Soils, and potential flooding hazards are addressed in Section 3.10, Hydrology and Water Quality.

Data on recorded hazardous material sites are kept in the GeoTracker database, maintained by the SWRCB, and in the EnviroStor database, maintained by the California Department of Toxic Substances Control. Both GeoTracker and EnviroStor provide the names and addresses of documented hazardous material sites, along with their cleanup status. A search of both GeoTracker and EnviroStor databases indicated no record of any active hazardous material sites on or within one-quarter mile of the project site (SWRCB 2024, DTSC 2024).

A list of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit did not show any locations in the Ripon area (CalEPA 2021a). Likewise, a list by SWRCB containing sites under Cease and Desist Orders and Cleanup and Abatement Orders showed no locations on or near the project site (CalEPA 2021b).

Facilities that store significant amounts of hazardous materials are required to prepare a Hazardous Material Business Plan that would be submitted to the County Environmental Health Department, which is the Certified Unified Program Agency (CUPA) for hazardous waste matters. Among other requirements, the Hazardous Material Business Plan must include emergency response plans and procedures to be followed in the event of a reportable release or threatened release of a hazardous material. The plan must be prepared by any facility that handles a hazardous material, or mixture containing a hazardous material, of a quantity at any one time during the reporting year equal to or greater than 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for a compressed gas.

Environmental Impacts and Mitigation Measures

a) Hazardous Material Transport, Use, and Storage.

The project would involve the transportation and storage of gasoline and diesel fuel to be sold on site. Gasoline is flammable and contains toxic substances such as benzene. Fuel

transportation would be subject to federal tank, placard, and shipment documentation and reporting requirements. Fuel would be stored in two underground tanks, the installation and operation of which would be required to follow State requirements implemented by the Underground Storage Tank Program of the local CUPA. The project also would be required to submit a Hazardous Material Business Plan that addresses the on-site use and storage of fuels. Fuel dispensing equipment would be subject to applicable vapor recovery and other requirements of the SJVAPCD, as described in Section 3.3, Air Quality.

Other hazardous materials that are likely to be used and stored on the project site would include cleaning products and landscaping chemicals such as pesticides, herbicides, and fertilizers. Facilities that store significant amounts of hazardous materials are required to prepare a Hazardous Material Business Plan that would be submitted to the County Environmental Health Department. However, none of these hazardous materials are likely to be stored in such quantities. Project impacts related to transport, use, or storage of hazardous materials, which is largely subject to regulation, would be less than significant.

b) Release of Hazardous Materials.

Construction activities on the project site may involve the use of hazardous materials such as fuels and solvents, and thus create a potential for hazardous material spills. Construction and maintenance vehicles would transport and use fuels in ordinary quantities. Fuel spills, if any occur, would be minimal and localized and would not typically have significant adverse effects. Potential hazardous materials spills during construction are addressed in the required SWPPP, described in Section 3.7, Geology and Soils. In accordance with SWPPP requirements, contractors have absorbent materials at construction sites to clean up minor spills. Other substances used in the construction process would be stored in approved containers and used in relatively small quantities, in accordance with the manufacturers' recommendations and/or applicable regulations.

As noted in a) above, the project would involve the transportation and storage of gasoline, and dispensing would involve potential for release of fuel vapors to the air. Fuel dispensing equipment would be subject to applicable vapor recovery and other related requirements of the SJVAPCD as needed to protect public health. Transportation of fuels to the project site by tanker trucks would involve potential for hazardous materials spills. As noted above, the transport of hazardous materials is subject to state and federal regulations designed to minimize the risk of release of hazardous materials into the environment. The City of Ripon and the Ripon Consolidated Fire District participate in the Joint County Hazardous Materials Response Team, which would handle any incident involving hazardous materials. The project would not result in a significant increase in hazards.

Hazardous materials transportation and storage on the project site would be subject to federal, state, and local regulations that would prevent release of hazardous materials to the soil and/or groundwater and the creation of new hazardous material or waste sites. These requirements would include registration in the California Environmental Reporting System and preparation and implementation of a Hazardous Materials Business Plan. Overall, impacts related to releases of hazardous materials would be less than significant.

c) Hazardous Materials Releases near Schools.

The nearest schools to the project site are Ripon High School and Ripon Christian School. Both are within one-quarter mile of the project site. However, as noted in a) above, hazardous materials to be stored or used at the fueling station are subject to regulations on their transport and storage. Moreover, the schools are separated from the project site by SR 99. The project would have no impact on schools within one-quarter mile of the project site.

d) Hazardous Materials Sites.

As previously noted, a search of the GeoTracker and EnviroStor databases did not identify any active hazardous material sites on or within one-quarter mile of the project site. As noted in Section 3.2, Agriculture and Forestry Resources, no agricultural activities have occurred on the project site for approximately 20 years, so contamination of the soil by residual agricultural chemicals, if any, would likely be minimal. Project impacts related to hazardous material sites would be less than significant.

e) Public Airport Operations.

The project site is not within two miles of a public or public use airport. The nearest such airport is Stockton Metropolitan Airport, approximately 11.5 miles to the north. The project site is not within the Airport Influence Area for the Stockton Airport, as delineated within its Airport Land Use Comprehensive Plan (Coffman Associates 2016). The project would have no impact related to airport operations safety.

f) Emergency Response and Evacuations.

The project would involve construction work on Arc Way and Frontage Road, mainly street frontage improvements and utility connections. Neither of these streets are considered important evacuation routes in Ripon. However, Arc Way is a connecting route between SR 99 and Fulton Avenue, which serves residential development in northern Ripon. Frontage Road provides access to light industrial development for emergency vehicles as well as employee traffic.

Construction work within public streets would require encroachment permits from the City, which include standard conditions for maintenance of public safety during construction. In addition, mitigation presented below would require preparation of a Traffic Control Plan, which would ensure that vehicle access would be maintained during construction activities within the adjacent streets. Implementation of this mitigation measure would reduce impacts related to emergency response and evacuation routes to a level that would be less than significant.

Mitigation Measure:

HAZ-1: Prior to the start of project construction, the developer shall prepare and implement a Traffic Control Plan, which shall include such items as traffic control requirements, resident notification of access closure, and daily access restoration. The contractor shall specify

dates and times of road closures or restrictions, if any, and shall ensure that adequate access will be provided for emergency vehicles. The Traffic Control Plan shall be reviewed and approved by the City Department of Public Works and shall be coordinated with the Ripon Police Department and the Ripon Fire Department if construction will require road closures or lane restrictions.

g) Wildland Fire Hazards.

The project site is in a mostly developed area with some vacant land. Developed land is not susceptible to wildfires. The project site is currently vacant land, and project development would reduce any existing fire hazard on the site by replacing the existing grasses and weeds with a developed and paved area. The project would have no impact related to wildfires. Section 3.20, Wildfire, provides a more detailed analysis of wildfire impacts.

3.10 HYDROLOGY AND WATER QUALITY

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

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

Environmental Setting

Local Hydrology

The Stanislaus River is the main surface water feature in the Ripon area. The river is a perennial stream, approximately 150 miles in length, that originates as three forks in the Sierra Nevada, then flows generally southwest to join the San Joaquin River southwest of Ripon. As noted in Section 3.4, Biological Resources, the Stanislaus River is approximately 1.2 miles southeast of the project site at its nearest. There are no surface streams or bodies of water in the immediate project vicinity.

The City is within the Eastern San Joaquin Groundwater Subbasin. As noted in Section 3.7, Geology and Soils, the groundwater level in the Ripon area is approximately 50 feet below the ground surface as of Spring 2023 (San Joaquin County FCWCD 2023). The City relies on groundwater for its potable water supply (see Section 3.19, Utilities and Service Systems). The City directs storm water to infiltration ponds; these waters and raw water provided by SSJID supplement natural groundwater recharge.

The project site and vicinity has been mapped by the Federal Emergency Management Agency (FEMA) for potential floodplains. According to the FEMA map that includes the project site, with an effective date of October 16, 2009, the entire site is in Zone X, designated as being in an area of minimal flood hazard (FEMA 2009). The project site is not within a Special Flood Hazard Area, which is defined as the 100-year floodplain; i.e., an area expected to flood on average once every 100 years.

Regulatory Framework

Water Quality

Storm water discharges from urban areas, known as "urban runoff," have the potential to contaminate surface waters. Such discharges are prevented by adherence to the National Pollutant Discharge Elimination System (NPDES) program, which is administered by the State of California. The City participates in the NPDES system by complying with a Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit, adopted by the SWRCB in 2013 as part of the NPDES program. NPDES permits such as the MS4 permit regulate storm water and other discharges, including from industrial sources, to maintain surface water quality.

To implement the requirements of its MS4 permit, the City has adopted a Storm Water Management Plan (SWMP), which addresses potential construction and post-construction storm water quality impacts of development. The SWMP includes post-construction Storm Water Development Standards that apply to "regulated projects" – projects that will create and/or replace 5,000 square feet or more of impervious surface. Among other requirements, regulatory projects must identify potential sources of pollutants and include in their design appropriate BMPs/Source Controls, as listed in the Standards. They also must demonstrate

how identified Drainage Management Areas on their project sites have been designed to accomplish listed Low Impact Development standards, and they must select one or more Site Design Measures that infiltrate, evapo-transpire, harvest and reuse, or biotreat storm water runoff (City of Ripon 2015b). The project is a "regulated project" as defined in the Storm Water Development Standards.

Groundwater

The State enacted the Sustainable Groundwater Management Act in 2014. This act requires the creation of local Groundwater Sustainability Agencies, each of which must prepare and adopt a Groundwater Sustainability Plan to ensure sustainable groundwater yields and prevent groundwater depletion in the agency's jurisdiction. In 2017, the City, as part of the South San Joaquin Groundwater Sustainability Agency, joined the Eastern San Joaquin Groundwater Joint Powers Authority. The Authority is a Groundwater Sustainability Agency that covers most of the Eastern San Joaquin Groundwater Subbasin.

The Authority adopted a Groundwater Sustainability Plan for the Subbasin and submitted it to the Department of Water Resources in January 2020, which approved the plan in March 2023 after revisions. The goal of the Groundwater Sustainability Plan is to achieve sustainable groundwater management of the Subbasin on a long-term average basis by increasing recharge and/or reducing groundwater pumping, while avoiding undesirable results such as degraded water quality and declining groundwater levels.

The Subbasin will achieve sustainability by implementing water supply projects that either replace groundwater use or supplement groundwater supplies to attain the current estimated pumping offset and/or recharge need. A final list of 23 potential projects is included in the Groundwater Sustainability Plan, representing a variety of project types, including direct and in-lieu recharge, intra-basin water transfers, demand conservation, water recycling, and stormwater reuse (ESJGA 2022).

Flooding

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate FEMA to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps for local and regional planners to promote sound land use and floodplain development by identifying potential flood areas based on the current conditions. On these maps, FEMA engineers and cartographers delineate Special Flood Hazard Areas, which correspond to the 100-year floodplain. As noted, the project site is not within a Special Flood Hazard Area.

In 2007, the State of California approved SB 5 and a series of related Senate and Assembly bills that establish the State standard for flood protection in urban areas in the Central Valley as protection from the 200-year flood (i.e., a flood with a chance of occurring on average once every 200 years). New development in areas potentially exposed to 200-year flooding more than three feet deep is prohibited, unless the local land use agency certifies that 200-year flood protection has been provided. "New development," as defined in Ripon Municipal Code Chapter 16.10 that incorporates SB 5 requirements, focuses on a new residence or a new building or construction that would result in an increase in allowed

occupancy for an existing building. A review of maps prepared by the California Department of Water Resources indicates that the project site is not within a 200-year floodplain (DWR 2024).

Environmental Impacts and Mitigation Measures

a) Surface Water Quality.

As discussed in Section 3.7, Geology and Soils, construction activities could lead to increased sedimentation of surface waters, as loosened soils are carried off the construction site by runoff. The project would be required to obtain a Construction General Permit, which would require the preparation and implementation of a SWPPP to address potential sedimentation issues. Compliance with the Construction General Permit would reduce potential erosion and sedimentation effects to a level that is less than significant. See c-iii) below for a discussion of the potential impacts of runoff on water quality.

b) Groundwater Supplies and Recharge.

Water supply for the project would be provided by the City of Ripon municipal water system; the project would not involve any direct groundwater extraction. The City obtains its water supply from groundwater; as such, the project would place an indirect demand on groundwater resources. As discussed in Section 3.19, Utilities and Service Systems, potable water demand from the project would not adversely affect the City's water supplies.

The project would introduce impervious surfaces to the project site, which would reduce the area that would allow percolation of precipitation into the ground, thereby locally reducing groundwater aquifer recharge. However, the reduction in recharge area is relatively small compared with the rural area surrounding Ripon, plus storm water management requirements together with the proposed landscaping on the project site would provide some percolation area. Given this, project development would not involve significant groundwater recharge effects on the City and surrounding area. Project impacts on groundwater supplies and recharge would be less than significant.

c-i, ii) Drainage Patterns.

The project would alter existing storm drainage patterns, due to site grading and the introduction of impervious surfaces such as buildings and pavement. However, on-site drainage would be percolated into stormwater management features; excess drainage would be collected and discharged into the City's storm drainage system in accordance with the City's Storm Water Development Standards. As a result, no significant on-site or off-site erosion or siltation would occur, and no on-site or off-site flooding would result. Project impacts on drainage patterns would be less than significant.

c-iii) Runoff.

As noted above, on-site runoff would be collected by a storm water drainage system that would be percolated into storm water management features and discharged to the City's system in accordance with the City's Storm Water Development Standards. Drainage

facilities would be designed in accordance with the City standards and subject to the approval of the City Engineer. As such, it would avoid runoff that exceeds the capacity of the City's system.

With development of the project site, runoff may contain motor vehicle fluids, trace metals, and other contaminants - known collectively as "urban runoff" - that could enter surface water, with potentially adverse consequences to water quality and aquatic habitat. The City's Storm Water Management Program implements the requirements of its MS4 permit. The program includes Post-Construction Stormwater Standards that apply to new development. Compliance with the City's Storm Water Management Program, including implementation of applicable Post-Construction Stormwater Standards, would reduce impacts of runoff on surface water quality and quantity to a level that is less than significant.

c-iv) Flood Flows.

As noted, the project site is in an area designated Zone X by the FEMA flood map for the site, and it is not within a Special Flood Hazard Area. Given the limited flood hazard, the project is not expected to impede or redirect 100-year flood flows. In addition, the project site is not located within a 200-year flood area as defined by SB 5. The project would have no impact related to flood flows.

d) Release of Pollutants in Flood Zones.

As indicated in c-iv) above, the project site is not within a 100-year flood zone, which is considered a Special Flood Hazard Area, nor is the site exposed to potential 200-year flooding. The project site is not located near a large body of water where seiches or tsunamis may occur.

The City's General Plan EIR states that the Ripon area is within a potential inundation area resulting from failure of the New Melones Dam on the Stanislaus River (City of Ripon 2006b). However, the probability of failure of New Melones Dam is low at any given time, and the dam is subject to maintenance, inspection and improvement as required to address predicted flows and flooding potential. Project impacts related to the release of pollutants during flooding would be less than significant.

e) Conflict with Water Quality or Groundwater Plans.

As noted in c-iii) above, the City has adopted a SWMP with Storm Water Development Standards to facilitate compliance with the provisions of the MS4 permit. The project would be required to comply with these standards. Also, as noted, a Groundwater Sustainability Plan for the Eastern San Joaquin Groundwater Subbasin has been adopted. The Groundwater Sustainability Plan contains proposed projects at the subbasin level and encourages the preparation of local water management plans. It does not contain any actions or requirements specific to projects. As noted, the project is not expected to significantly affect groundwater supplies. The project would have no impact on water quality or groundwater sustainability plans.

3.11 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	✓
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✓	☐

Environmental Setting

The City of Ripon is the southernmost city in San Joaquin County, located along the north bank of the Stanislaus River. The city has a rural location and an agricultural economy; however, it has experienced considerable residential and commercial growth in recent years. The project vicinity is a mixed residential/commercial area, although light industrial activities have been established west of the project site and along Frontage Road.

The City of Ripon adopted its current General Plan in 2006. The General Plan is a comprehensive, long-term plan for the physical development of the City and its Planning Area. It contains the goals and policies that guides land use planning decisions within the City and identifies implementation measures to ensure the vision and goals of the General Plan are carried out. The General Plan contains a land use diagram, which serves as a general guide to the distribution of land uses throughout the City and its Planning Area. The General Plan designates the project site as Community Commercial, which allows for retail, service, and office uses, public and quasi-public uses, and similar and compatible uses (City of Ripon 2006a).

The City's Development Title (Ripon Municipal Code Title 16) contains land use regulations adopted by the City of Ripon. It is the primary tool for implementing the goals and policies of the Ripon General Plan as mandated by the State Planning and Zoning Law, State Subdivision Map Act, CEQA, and other applicable State and local requirements. The Development Title establishes zoning districts that specify the range of land uses permitted on parcels consistent with the General Plan. The current City zoning for the project site is C-2, Community Commercial, which is consistent with the General Plan designation for the site.

Recently, the State has encouraged incorporating environmental justice concerns in local land use planning. Low-income residents, communities of color, tribal nations, and immigrant communities have historically experienced disproportionate environmental burdens and related health problems resulting from land use decisions. As part of legislation passed in 2012, the California Office of Environmental Health Hazard Assessment has developed the California Communities Environmental Health Screening Tool (CalEnviroScreen) to identify disadvantaged communities. CalEnviroScreen evaluates pollution and population characteristics of each U.S. Census tract in California

using 20 indicators such as air and drinking water quality, waste sites, toxic emissions, asthma rates, and poverty. These indicators are used to generate a score from 0 to 100 that rates the level of cumulative environmental impacts on each area. A Census tract with a CalEnviroScreen score in the top 25% (75 or higher) is considered a disadvantaged community. The project site is within Census Tract 6077005003, which covers northern Ripon and the surrounding rural area. This Census tract has a CalEnviroScreen score of 52, which is below the disadvantaged community threshold (OEHHA 2024).

Environmental Impacts and Mitigation Measures

a) Division of Established Communities.

The project site is in an area north of SR 99 that consists mainly of residential and commercial land uses with a few light industrial uses. The project would not divide existing residential communities in the area, which are located north of the project site across Arc Way. The project would have no impact on the division of established communities.

b) Conflicts with Plans, Policies and Regulations Mitigating Environmental Effects.

As noted, the proposed project is consistent with the allowable land uses under the Ripon General Plan and current C-2 zoning. This IS/MND analyzes the potential environmental impacts of the proposed project. For all environmental issues, the project would have no environmental impact, an impact that would be less than significant, or an impact that can be mitigated to a level that would be less than significant. This includes issues for which there are land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. These are discussed under the applicable environmental issue. No potential conflicts have been identified in these other issue sections. Project conflicts with plans and programs that mitigate environmental effects are considered less than significant.

3.12 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	✓
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	✓

Environmental Setting

The project site contains no existing mineral resource extraction activities. The Ripon General Plan does not identify any potentially valuable mineral resources in the Ripon area

(City of Ripon 2006a). The San Joaquin County General Plan Background Report identified significant mineral deposits in the County, based on California Division of Mines and Geology Mineral Classification maps. Neither the project site nor the Ripon area was identified as potentially containing known valuable mineral resources. (San Joaquin County 2016).

The project site contains no active oil or gas wells. The nearest active oil or natural gas field is the McMullin Ranch natural gas field more than 3.5 miles to the west (DOGGR 2024).

Environmental Impacts and Mitigation Measures

a, b) Availability of Mineral Resources.

As noted, the Ripon area has not been identified as having significant mineral resources. Given this and the lack of any mineral resource activity, including oil or natural gas well production, it is unlikely that mineral deposits would exist on the project site. The project would have no impact on the availability of or access to locally designated or known mineral resources.

3.13 NOISE

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

Environmental Setting

Assessment of noise impacts focuses on the “ambient" noise level, which is the all-encompassing noise level associated with a given area. Ambient noise is composed of noise from various sources, both near and far. The main source of noise in the project vicinity is vehicle traffic on SR 99, with less significant noise sources being traffic on the local streets (City of Ripon 2016a). A standard method of evaluating traffic noise impacts is to determine the number of decibels (dB) L_{dn} at 50 feet from the centerline of the roadway. L_{dn} is the Day-Night Average Level, which equates variable noise levels in the local

environment to the same total sound energy being produced over a given period. Then a +10-dB weighting is applied to noise occurring between 10:00 p.m. and 7:00 a.m., on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures.

Ripon Municipal Code Section 16.156.090 sets maximum exterior noise levels for receiving land uses in the City. The receiving land use of concern in the project vicinity is single-family residences. For single-family residences, the maximum exterior noise level is 60 A-weighted decibels (dBA) from 7:00 a.m. to 10:00 p.m., and 50 dBA from 10:00 p.m. to 7:00 a.m. By contrast, the maximum exterior noise level for light industrial land uses, which are adjacent to the project site, is 70 dBA at all times. For all receiving land uses, an additional five decibels are allowed for noise occurring during daytime hours only (7:00 a.m. to 7:00 p.m.).

Environmental Impacts and Mitigation Measures

a) Exposure to Noise Exceeding Local Standards.

The project site is in an area with potentially noise-sensitive land uses, mainly the nearby residential area to the north. The site is also near light industrial land uses and vacant land, neither of which is sensitive to changes in noise levels. As the project site is currently vacant, the project would be expected to increase the ambient noise level in the area. Project operations would generate noise primarily from vehicle traffic to and from the project site. The increased noise resulting from project traffic could adversely affect the existing nearby single-family residences.

In general, an increase in ambient noise levels of 3 dB is considered significant in an environment with an existing ambient noise level of 60-65 dB. For existing ambient noise above 65 dB, an increase of 1.5 dB is considered significant (FICON 1992). To estimate the increase in noise levels resulting from the project, the Highway Noise Model developed by the Federal Highway Administration was used, based on estimated traffic on Arc Way before and after the project. The traffic volumes before the project included both existing traffic conditions and traffic resulting from project development as estimated by a traffic study conducted for the project (City of Ripon 2015a, Flecker Associates 2024).

At a reference distance of 50 feet, traffic noise levels before the project are 64.3 dB L_{dn}. With the project, traffic noise levels would be 65.0 dB L_{dn}. The increase of 0.7 dB L_{dn} is below the significance thresholds for both ambient noise at 60-65 dB and at above 65 dB. Given this, project impacts on traffic noise would be less than significant.

Construction Noise

Project construction activities would generate a temporary increase in noise levels. As indicated in Table 3-6, activities involved in construction would generate maximum noise levels ranging from 76 to 90 A-weighted decibels (dBA) at 50 feet. For this project, construction equipment expected to be used includes backhoes, dozers, dump trucks, excavators, and pavers.

TABLE 3-6
CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Maximum Level (dBA at 50 feet)
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Paver	77
Pneumatic Tools	85

Source: FHWA 2006.

Construction noise would be temporary and would cease once work is completed. However, daytime noise could potentially exceed City noise standards at the nearby single-family residences. Mitigation described below would reduce noise generated by construction equipment to a level that would be less than significant.

Mitigation Measure:

NOISE-1: The City shall require the construction contractor to limit construction activities to the hours from 7:00 a.m. to 7:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the evenings and nights. Construction activities shall be prohibited on Sundays and federally recognized holidays, unless the contractor obtains prior approval from the City.

b) Exposure to Groundborne Vibration or Noise.

Groundborne vibration is not a common environmental problem. It is typically associated with transportation facilities, although it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment.

Other than operation of construction equipment during construction, the project would not involve these potential noise sources. In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures. Noise

from the equipment typically overshadows any meaningful ground vibration effects on people (Caltrans 2013). As the nearest residence is approximately 200 feet northeast of the site center, the residence is unlikely to receive any vibrations from the project site that would be perceptible. In any case, any vibrations generated by construction activities would cease once construction work is completed, and project operations would not generate any vibrations. Project impacts related to groundborne vibrations would be less than significant.

c) Public Airport and Private Airstrip Noise.

As noted in Section 3.9, Hazards and Hazardous Materials, there are no public or public use airports within two miles of the project site – the nearest is Stockton Metropolitan Airport approximately 11.5 miles to the north. The project would involve no exposure to airport or air traffic noise. There are no private airstrips in the project vicinity. The project would have no impact related to airport/airstrip noise.

3.14 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✓

Environmental Setting

According to the 2020 U.S. Census, the population of Ripon was 16,013 - an increase from its 2010 U.S. Census population of 14,297. The number of housing units in Ripon in 2020 was 5,658 (U.S. Census Bureau 2020) According to estimates from the California Department of Finance, approximately 80.8% of housing units in the City were single-family detached units (California Department of Finance 2024).

Environmental Impacts and Mitigation Measures

a) Unplanned Population Growth.

The proposed project is a commercial development; it does not include any residential component. As noted in Section 3.11, Land Use, the project would be on a site designated Community Commercial by the Ripon General Plan, so the project would not lead to a direct increase or decrease in the city's population anticipated by the Ripon General Plan.

The project would provide employment opportunities, so it may indirectly generate additional population growth. However, most of the employees are expected to come from the existing population of Ripon and surrounding areas. In any case, given the Community Commercial designation of the project site, the project is not expected to have an impact on population growth not otherwise planned for in the General Plan. The project would have no impact related to unplanned population growth.

b) Displacement of Housing or People.

The project site is vacant. No housing is on the project site, and no people reside on the site. The project would have no impact regarding the displacement of housing or people.

3.15 PUBLIC SERVICES

Would the project:

a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Fire protection?	☐	☐	✓	☐
ii) Police protection?	☐	☐	✓	☐
iii) Schools?	☐	☐	☐	✓
iv) Parks?	☐	☐	☐	✓
v) Other public facilities?	☐	☐	☐	✓

Environmental Setting

The project site is within the service boundary of the Ripon Consolidated Fire District, which covers approximately 55 square miles in the southern portion of San Joaquin County and is centered around Ripon. The Fire District provides fire protection, emergency medical, hazardous material response, and other services. As of 2018, the Fire District employed 12 full-time staff, supplemented by 30 volunteers (San Joaquin LAFCo 2018). The nearest fire station to the project site is Station 1, located at 142 S. Stockton Avenue approximately three-quarters mile from the project site. Also in the vicinity is Station 3, located at 1705 N. Ripon Road more than one mile to the north. Station 3 is currently unstaffed. The Fire District typically achieves a 4.5-minute response time from the main station (Station 1) 90% of the time within the City limits, which exceeds the City's recommended goal of a five-minute emergency response time (City of Ripon 2018).

Law enforcement services are provided by the Ripon Police Department, which is stationed at 259 N. Wilma Avenue, less than one-half mile southwest of the project site. As of 2018,

the Police Department had 24 sworn officers, along with six dispatchers and other support staff and volunteers. The police officer staffing level equated to 1.5 sworn officers per 1,000 population, which met the City's staffing ratio goal (City of Ripon 2018). Average response times to calls for service have been just below four minutes (Daniel Sauer electronic mail).

The project site is within the boundaries of the Ripon Unified School District, a public school district that provides educational services for students from transitional kindergarten to high school. As of the 2022-23 school year, the School District had an enrollment of 5,068 (EdData 2024). As noted in Section 3.9, Hazards and Hazardous Materials, the closest public school to the project site is Ripon High School, within one-quarter mile of the project site to the southwest, across SR 99. Ripon Christian Schools, which are private schools, are also located across SR 99 from the project site.

Park and recreation services are provided by both the City and the County. Section 3.16, Recreation, provides more detailed information. Other public services include the Ripon Memorial Library on Main Street.

Environmental Impacts and Mitigation Measures

a-i) Fire Protection.

The project would place new demands on the Ripon Consolidated Fire District for fire protection services. However, as noted, Station 1 is approximately three-quarters of a mile from the project site, which would allow the station to respond to emergencies relatively quickly. Also, when staffed, Station 3 would be approximately one mile away and on the same side of SR 99 as the project site. As discussed in Section 3.14, Population and Housing, the project is not expected to induce population growth not otherwise planned for in the Ripon General Plan. No new or expanded facilities are required. Additionally, the project would be required to comply with the adopted 2022 California Fire Code, which contains requirements on fire resistance of buildings and on fire protection and life safety systems.

The City collects Public Facility Fees on behalf of the Fire District to provide an acceptable level of fire and emergency response services to the residents of the Fire District by funding construction of additional fire stations and related infrastructure, equipment and related Capital needs. The project would be required to pay Public Facility Fees for fire facilities, which are currently approximately $2,310 per 1,000 square feet of commercial development. With payment of this fee, along with the other items discussed above, project impacts on fire protection facilities would be less than significant.

a-ii) Police Protection.

The project would place new demands on the Ripon Police Department for police protection services. As discussed in Section 3.14, Population and Housing, the project is not expected to affect the City's population in a manner unplanned by the City. Because of this, the project is not expected to affect the officer/population ratio such that new officers would need to be hired and facilities would need to be built or expanded to accommodate

them. Also, the City police station is less than one-half mile from the project site, which would allow for adequate response times to emergencies. The Ripon Police Department, in its review of the project, indicated that it could adequately serve the project (Daniel Sauer electronic mail).

The project would be assessed a Public Facility Fee by the City to fund future police facilities when necessary. The project would be required to pay Public Facility Fees for police facilities, which are currently approximately $0.04 per square foot of commercial development. With payment of this fee, along with the other items discussed above, project impacts on police protection facilities would be less than significant.

a-iii) Schools.

As noted in Section 3.14, Population and Housing, the project would not construct residences that would encourage or accommodate new population growth in the area. In turn, it would not lead to the generation of students that would need new or expanded school facilities. Although the project would not generate any students, the proposed development would be required to pay development impact fees to the Ripon Unified School District to defray the costs of providing new school facilities. The current developer fee for new retail development is $0.66 per building square foot. Under State law, payment of development impact fees is considered adequate mitigation of potential environmental impacts. The project would have no impact on schools.

a-iv, v) Parks and Other Public Facilities.

As discussed in Section 3.14, Population and Housing, the project would not generate an increase in population. Therefore, additional demands on parks and other public facilities such as libraries are not expected, and no new or expanded public facilities would be required. The project would have no impact on parks or other public facilities. Section 3.16, Recreation, discusses project impacts on parks and recreational facilities in more detail.

3.16 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	✓
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	✓

Environmental Setting

As noted in Section 3.15, Public Services, public parks and recreational services are provided by the City of Ripon and by San Joaquin County. The city manages 21 parks, ranging in size from mini-parks of less than one acre to Mistlin Sports Park, which is approximately 80 acres. The city also manages the Jack Tone Golf Course. The nearest city park to the project site is Boesch-Kingery Park, a seven-acre park approximately one-quarter mile to the northeast.

San Joaquin County, through its Parks and Recreation Department, owns and operates 19 parks, which fall into three categories: neighborhood, community, and regional. The County also manages a day use area, a public access area, a wilderness area, the Harmony Grove Church building near Lockeford, and a regional sports complex near the Stockton Metropolitan Airport. The nearest county park to the project site is Raymus Village Park near Manteca.

Environmental Impacts and Mitigation Measures

a, b) Recreational Facilities.

As noted in Section 3.14, Population and Housing, the project would not construct residences that would encourage or accommodate new population growth in the area. Because of this, it would not create additional demand for recreational facilities, nor would it increase the use of existing facilities. No new or expanded facilities that could have environmental impacts would be required. The project would have no impact related to recreational facilities.

3.17 TRANSPORTATION

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

Environmental Setting

Information for this section primarily comes from a Traffic Impact Analysis conducted for the project by Flecker Associates. Appendix D contains the analysis, which describes existing traffic conditions in the vicinity of the project site and analyzes conditions with implementation of the project. LOS was evaluated for two intersections to provide a baseline analysis to meet local transportation impact criteria. However, the significance of CEQA environmental impacts were based on analysis of VMT, as discussed below.

Existing Transportation Facilities and Services

Streets and Intersections

Two existing intersections were identified by City staff for evaluation: Fulton Avenue at Arc Way and W. Milgeo Avenue at Arc Way.

- *Fulton Avenue/Arc Way* is a tee intersection with an "off-ramp" configuration for eastbound Fulton Avenue to southbound Arc Way movements. The intersection is stop-controlled along Arc Way. Fulton Avenue west of Arc Way is a two-lane roadway providing access to the west side of the City past SR 99. Arc Way is a two-lane roadway with a single northbound lane leading to the intersection. The City's North Pointe Specific Plan anticipates future installation of a roundabout at this intersection.

- *W. Milgeo Avenue/Arc Way/SR 99 Northbound Ramps/Frontage Road* is an all-way, stop-controlled intersection. All approaches to the intersection are a single lane except for westbound W. Milgeo Avenue, which consists of a shared left-through lane and a right turn only lane.

Intersection turning movement counts were completed during mid-April 2024 while school was in session. The a.m., p.m., and midday peak hour periods were analyzed at both study locations. The midday peak hour coincides with the end of school, with Ripona Elementary School in the vicinity.

Table 3-7 summarizes existing LOS at the intersections during a.m. and p.m. peak hours. Midday peak results are available in the Traffic Impact Analysis in Appendix D. The Fulton Avenue / Arc Way intersection currently operates at LOS F in the a.m. peak hour and LOS E in the p.m. peak hour. The W. Milgeo Ave/Arc Way intersection currently operates at LOS B in the a.m. peak hour and the p.m. peak hour. Both intersections studied operate at an acceptable LOS during the midday peak hour under existing conditions. Further traffic operations information at the two intersections is provided in Appendix D.

TABLE 3-7
INTERSECTION OPERATIONS UNDER EXISTING CONDITIONS
WITHOUT AND WITH PROJECT

Intersection	Control Type	AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus Project		Existing		Existing Plus Project	
		Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Fulton Ave/Arc Way NB	NB Stop	**125.1**	**F**	**178.5**	**F**	**40.2**	**E**	**60.0**	**F**
Fulton Ave/Arc Way WB Left		8.3	A	8.3	A	8.2	A	8.3	A
W. Milgeo Ave/Arc Way	AWS	13.6	B	24.7	C	13.2	B	22.9	C
Frontage Rd/Project D/W SB	SB Stop			9.7	A			10.2	B
Frontage Rd/Project D/W EB Left				7.6	A			7.6	A
Arc Way/Project D/W EB Right	EB Stop			10.1	B			10.3	B

Bold indicates LOS does not meet City criteria.
Notes: AWS = all-way stop; D/W = driveway; LOS = Level of Service
Source: Flecker Associates 2024.

Non-Motor Vehicle Facilities

Various limited bus services are provided within Ripon. These include the City of Ripon Blossom Express, the San Joaquin Regional Transit District (SJRTD), and the SJRTD Van Go!. The Blossom Express operates Tuesdays and Thursdays in a fixed route service beginning at the Ripon Library and proceeding in a clockwise loop around the City and to Kaiser Hospital, Vintage Faire Mall, and the Target Center in Modesto. The closest stops are W. Colony Road at Fulton Avenue and E. Milgeo Avenue at John Roos Avenue. SJRTD operates the 91 Hopper route Monday through Friday with five northbound runs and four southbound runs. The northbound route passes the Fulton Avenue/Arc Way intersection into Ripon before heading north towards Manteca. The Van Go! Program is a ride-share service that offers trips throughout the County on a first-come, first-served basis due to the limited number of vehicles.

Class 2 bike lanes are present throughout the City of Ripon. In the immediate vicinity, bike lanes are present along W. Milgeo Avenue east of Acacia Avenue and along Acacia Avenue north of W. Milgeo Avenue. In addition, a Class 1 bike path (multi-use path) is present along Fulton Avenue from Arc Way to River Road. A sidewalk has been installed along the Arc Way frontage of the project site.

Transportation Plans and Guidelines

As the designated metropolitan planning organization representing San Joaquin County, SJCOG is required by both federal and State law to prepare a long-range transportation planning document known as a Regional Transportation Plan. The most recently adopted

Regional Transportation Plan, in 2022, sets forth how the SJCOG region will meet its transportation needs for the period from 2022 to 2046, considering existing and projected land use patterns and forecasted population and job growth. It identifies and prioritizes expenditures of anticipated funding for transportation projects of all transportation modes, as well as transportation demand management measures and transportation systems management (SJCOG 2022a). Several projects in the Ripon area have been identified in the current Regional Transportation Plan, but none directly affect the project site.

The Circulation Element of the Ripon General Plan sets forth policies and implementation strategies related to transportation and circulation including streets and highways, transportation corridors, public transit, railroads, bicycle and pedestrian facilities, and commercial, general, and military airports (City of Ripon 2006a). The Circulation Element states that the City shall maintain LOS D or better on the City's street system. LOS measures the quality of traffic movement on roadways and through intersections. It is represented by letter designations from A to F, with A representing the best movement conditions and F representing the worst. However, LOS is no longer used to determine the environmental impacts of projects, as it had been previously.

The State of California has recently added Section 15064.3 to the CEQA Guidelines, which is meant to incorporate SB 743 into CEQA analysis. SB 743 was enacted in 2013 with the intent to balance congestion management needs and the mitigation of the environmental impacts of traffic with statewide GHG emission reduction goals, mainly by developing an alternative mechanism for evaluating transportation impacts. Section 15064.3 states that VMT is the preferred method for evaluating transportation impacts, rather than LOS. The VMT metric measures the total miles traveled by vehicles as a result of a given project. VMT accounts for the total environmental impact of transportation associated with a project, including use of non-vehicle travel modes.

The Governor's Office of Planning and Research (OPR) has issued a Technical Advisory on the evaluation of CEQA transportation impacts based on VMT. Based on OPR's extensive review of the applicable research and an assessment by the ARB quantifying the need for VMT reduction to meet the State's long-term climate goals, the OPR Technical Advisory recommends VMT thresholds based on land use. For retail projects, OPR suggests that a net increase in total VMT may indicate a significant transportation impact. However, the advisory also suggests various "screening thresholds" that assume particular types of projects would have VMT impacts that are less than significant (OPR 2018).

Environmental Impacts and Mitigation Measures

a) Conflict with Transportation Plans, Ordinances and Policies.

The Traffic Impact Analysis evaluated the impacts of project traffic on LOS at the two intersections, along with impacts at the project site driveway. Project traffic was determined by the use of trip generation rates published in the *Trip Generation Manual, 11th Edition* by the Institute of Transportation Engineers, with adjustments for internal trips and pass-by/diverted trips plus anticipated distribution of project traffic on the local street network. With the adjustments for internal trips and pass-by/diverted trips, the project is expected to generate 1,481 new daily trips.

The results of the analysis are provided in Table 3-7 above. As indicated by Table 3-7, with the addition of project traffic, affected intersections would operate at an acceptable LOS in accordance with the Ripon General Plan, except for the Fulton Avenue/Arc Way intersection. This intersection would operate at LOS F in both the a.m. and p.m. peak hours. It should be noted that, under existing conditions without the project, this intersection also operates at an unacceptable LOS during a.m. and p.m. peak hours. However, delay at this intersection with project traffic would increase by approximately 42.7% during the a.m. peak hour and by 49.3% during the p.m. peak hour. All existing and new intersections studied would operate at an acceptable LOS during the midday peak hour.

The Traffic Impact Analysis indicates that the installation of all-way stop control would improve traffic operations at the intersection with the project to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour. Both are acceptable LOS as established in the Ripon General Plan.

A roundabout should be installed at the Fulton Avenue / Arc Way intersection as designated in the Ripon General Plan; the roundabout would improve the intersection operations to LOS C or better. The applicant should construct the roundabout and receive credits for their fair share costs; additional costs would be recoverable through a reimbursement agreement between the applicant and the City.

With installation of the roundabout, LOS at this intersection would be consistent with the LOS standard set in the Ripon General Plan. This recommendation is presented as Transportation Improvement Recommendation, not a mitigation measure, as changes to LOS are not considered environmental impacts under CEQA. These recommendations should be included in the project City's conditions of approval should it approve the project.

Given the character of the proposed development, the project is not expected to increase demand for public transit, nor would it require new or expanded bicycle and pedestrian facilities. As noted in Chapter 2.0, Project Description, the project would include bicycle racks in accordance with the provisions of the adopted CALGreen. As noted, existing sidewalk is in place along the Arc Way frontage of the project site. In addition, the project would install five electric vehicle charging stations, which would be consistent with the objectives of GHG reduction plans (see Section 3.8, Greenhouse Gas Emissions).

Overall, with implementation of the Transportation Improvement Recommendation below, the project would not conflict with transportation plans, ordinances, and policies. Project impacts would be less than significant.

Transportation Improvement Recommendations:

TIR-1: The project applicant shall design and construct a roundabout at the intersection of Fulton Avenue and Arc Way. The applicant shall receive credits for their fair share portion of the improvement costs; additional roundabout installation costs would be recoverable through a reimbursement agreement between the applicant and the

City.vThe City Engineer would determine the appropriate fair-share cost in coordination with the project applicant.

b) Conflict with CEQA Guidelines Section 15064.3(b).

As discussed above, VMT is now the preferred method for evaluating transportation impacts, rather than LOS. The City currently does not have VMT standards. Therefore, guidance provided by the OPR Technical Advisory is used for this analysis.

The OPR Technical Advisory identifies screening criteria that can be used to determine whether sufficient evidence exists to presume a project will have a less-than-significant VMT impact without conducting a detailed study. Each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. One of the screening criteria is "local serving retail," which is defined as retail uses of 50,000 square feet or less. Local serving retail can be presumed to have a VMT impact that is less than significant impact (OPR 2018). The project has a proposed total retail space of 10,000 square feet; therefore, the project meets the local serving retail screening criteria. Based on this, the project would not conflict with CEQA Guidelines Section 15064.3(b). Project VMT impacts are considered less than significant.

c) Transportation Hazards.

The Traffic Impact Analysis evaluated the potential traffic impacts of installing the proposed roundabout at Fulton Avenue and Arc Way (see a) above). This improvement would eliminate potential queuing concerns and the need for additional pavement striping mitigation.

The Traffic Impact Analysis assessed the impacts of truck traffic associated with the project. Three design vehicles were reviewed regarding access to and within the project site: a dual tanker fuel truck for the fueling station, and WB-40 and WB-50 trucks for the convenience store. Both the fuel truck and the WB-40 trailer can maneuver through the project site; however, the drive aisles could be blocked while these trucks are loading/ unloading. Additionally, a WB-50 truck would overtop the curb at both driveways in both travel directions. The Traffic Impact Analysis recommended that truck traffic to the project site be limited to fuel trucks and WB-40 trailers, with deliveries limited to off-hours to minimize blocking of driveways and drive aisles, which could create a safety hazard. Mitigation provided below would incorporate this recommendation.

The Traffic Impact Analysis evaluated sight distances for vehicles from both proposed driveways on the project site, using the Minimum Stopping Sight Distance criteria in Caltrans' *Highway Design Manual*. For both driveways, sight distance appears adequate, but proposed landscaping on the project site, as well as parked vehicles on the streets along the project site frontage, could potentially interfere with the line of sight. Mitigation identified below would ensure that landscaping does not interfere with the views of drivers leaving the driveways, thereby reducing potential safety hazards.

To further prevent interference with sight lines, No Parking signs shall be installed along Frontage Road along the project site frontage. Such signs currently are in place along the Arc Way frontage. Overall, with proposed mitigation and recommended road

improvements, project impacts related to transportation hazards would be less than significant.

Mitigation Measures:

TRANS-1: Truck traffic on the project site shall be limited to fuel tankers and WB-40 trucks. Deliveries by these vehicles shall be limited to off-hours to minimize blocking of driveways and drive aisles.

TRANS-2: Landscaping within the sight triangles at the project site driveways, as identified in the Traffic Impact Analysis prepared for the project by Flecker Associates on May 8, 2024, shall be limited to low-lying landscaping with any trees having canopies no less than eight feet. In addition, parking shall not be allowed within the sight triangles. No Parking signs shall be installed along the Frontage Road frontage of the project site.

d) Emergency Access.

The project proposes construction of two driveways – one off Arc Way and one off Frontage Road. These driveways would provide adequate access to the project site by emergency vehicles. Project impacts related to emergency access would be less than significant.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	✓	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✓	☐	☐

Environmental Setting

As noted, in Section 3.5, Cultural Resources, the project site lies within the traditional territory of the Northern Valley Yokuts, whose territory extended from the large bend in

the San Joaquin River near Mendota north to the confluence of the San Joaquin and Calaveras Rivers. Yokut groups lived in small seasonal camps geared towards hunting or acorn gathering and processing or in larger settlements on perennial water sources. These larger settlements might include approximately 200 inhabitants, constituting a small sub-tribe of the Yokut. Dwellings in the larger villages consisted of circular tule covered structures and more elaborate semi-subterranean pit houses. Ceremonial sweat houses and assembly chambers were often constructed within the more substantial villages. Yokuts material culture and technological systems were as varied as the environments in which they resided and reflected the diversity of the resources available for their use. (City of Ripon 2024).

The Yokuts were severely impacted by Euro-American settlement. Missionization and exposure to disease decimated the population. The influx of Europeans during the Gold Rush era further reduced the population because of disease and violent encounters with the miners. Because of this, the Northern Valley Yokuts are generally not well documented in the ethnographic record. Nevertheless, members of the Yokuts exist to the present day. The Nototome/North Valley Yokut Tribe, Inc., represents the Northern Valley Yokuts in the San Joaquin County region.

In 2014, the California Legislature enacted AB 52, which focuses on CEQA consultation with Native American tribes on projects potentially affecting the tribes. The intent of this consultation is to avoid or mitigate potential impacts on "tribal cultural resources," which are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe." Under AB 52, when a tribe requests consultation with a CEQA lead agency on projects within its traditionally and culturally affiliated geographical area, the lead agency must provide the tribe with notice of a proposed project within 14 days of a project application being deemed complete or when the lead agency decides to undertake the project if it is the agency's own project. The tribe has up to 30 days to respond to the notice and request consultation; if consultation is requested, then the local agency has up to 30 days to initiate consultation.

Matters which may be subjects of AB 52 consultation include the type of CEQA environmental review necessary, the significance of tribal cultural resources, and project alternatives or appropriate measures for preservation or mitigation of the tribal cultural resource that the tribe may recommend to the lead agency. The consultation process ends when either (1) the resource in question is not considered significant, (2) the parties agree to mitigate or avoid a significant effect on a tribal cultural resource, or (3) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. Regardless of the outcome, a lead agency is still obligated under CEQA to mitigate any significant environmental effects, as explicitly noted in AB 52.

Environmental Impacts and Mitigation Measures

a, b) Tribal Cultural Resources.

As noted in Section 3.5, Cultural Resources, a records search of the California Historical Resources Information System, conducted by the Central California Information Center, did not find any formal records of archaeological resources on the project site. The search

also found no records of resources known to have value to local cultural groups (CCIC 2024). In addition, a search of the Sacred Lands File by the Native American Heritage Commission had negative results. These results by themselves do not mean that there are no tribal cultural resources on the project site, as tribes may be reluctant to disclose information on such resources.

Two tribes have requested that the City notify them of future projects – the Buena Vista Rancheria and the Torres Martinez Desert Cahuilla Indians. The City sent letters to both tribes on May 23, 2024 inviting them to consult on this project per AB 52. To date, no request for consultation from either tribe has been received.

Project construction could potentially uncover previously unknown archaeological resources, including those of Native American origin. Mitigation Measure CULT-1 would require construction work to stop at an uncovered resource site until an archaeologist can evaluate the resource and give recommendations for its disposition. In addition, a tribal representative would be allowed to evaluate the find and recommend measures for the disposition of the resource and would monitor remaining construction activities.

As indicated in Section 3.5, there are no records of any human burials occurring on the project site, including Native American burials. CEQA Guidelines Section 15064.5(e) describes the procedure to be followed when human remains are uncovered in a location outside a dedicated cemetery, with specific guidance on Native American remains.

Mitigation Measure: Implementation of Mitigation Measure CULT-1.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✓	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✓	☐
c) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✓	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	✓	☐

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓

Environmental Setting

Domestic water service is currently provided within the City limits by the City of Ripon. All potable water in Ripon is provided by five municipal groundwater wells. In 2015, annual water production was 4,142 acre-feet (City of Ripon 2017). Water is distributed to City residents and businesses through a system of water lines ranging in diameter from 4 to 24 inches. An existing water line 12 inches in diameter is located beneath Frontage Road adjacent to the project site. It should be noted that the City is pursuing a project that would connect the City's water system to surface water provided by SSJID, thereby providing an additional water source.

The City of Ripon provides wastewater treatment and collection services to residential, commercial, and industrial land uses within the City limits. Wastewater is collected through a system of sewer lines and force mains and conveyed to the City's Wastewater Treatment Plant, located south of the City near the Stanislaus River. The maximum treatment capacity of the plant is 2.43 million gallons per day (mgd). As of 2015, the amount of wastewater collected and treated was approximately 1,153 acre-feet per year, or approximately 1.03 mgd (City of Ripon 2017). Existing wastewater collection lines and manholes are located north of the project site along Arc Way and southeast of the project site south of East Milgeo Avenue.

The City maintains a network of storm drains and detention basins that collect storm water runoff from existing urbanized areas. Most of the collected storm drainage is discharged to retention basins and the Stanislaus River. Existing storm drainage lines are located along the project site frontages beneath Arc Way and Frontage Road. As noted in Section 3.10, Hydrology and Water Quality, the City operates under the MS4 General Permit, in accordance with which the City has adopted its Storm Water Development Standards that provide guidance to developers in meeting the SWRCB's requirements for mitigating water quality impacts associated with storm drainage.

Solid waste collection services in Ripon are provided by Gilton Solid Waste Management, which operates under a City franchise. Solid waste from the City is taken to the McClure Transfer Station in Modesto, which in turn is sent to the Fink Road Sanitary Landfill in southwestern Stanislaus County. The Fink Road Landfill has a maximum permitted capacity of 28,289,900 cubic yards and currently has a remaining capacity of 18,993,322 cubic yards. The facility is expected to remain open until 2050 (CalRecycle 2024).

Electricity is provided to Ripon by PG&E and the Modesto Irrigation District; the City is within a "joint electric distribution service area" where both utilities may compete for customers. Existing overhead electrical lines are along Frontage Road, and underground lines are available at the project site. Natural gas services are provided by PG&E. It should be noted that the SSJID is seeking to be an electricity distributor in its service area, which includes Ripon. This change was approved by the San Joaquin Local Agency Formation

Commission in 2014. However, ongoing litigation has delayed implementation of this change.

Environmental Impacts and Mitigation Measures

Existing water, wastewater, and storm drainage lines are along or near the project site. The project would connect to these existing lines without a need for their relocation or extension. The project would also connect to existing electricity and natural gas lines in the vicinity with no need for relocations or extensions. Infrastructure serving the proposed buildings would be installed as part of site development, and therefore would not have impacts distinct from overall site development. Project impacts related to the construction or relocation of infrastructure would be less than significant.

b) Water Systems and Supply.

The project would connect to the City's water supply system; an existing water main is located beneath Frontage Road. As noted, water production from the City's wells was 4,142 acre-feet in 2015. It was estimated that total potable and non-potable water demand would be 10,221 acre-feet by 2040 (City of Ripon 2017). The City wells have been determined to be capable of delivering more than 17,000 acre-feet of water per year (City of Ripon 2018).

Based on a recent Water Supply Assessment conducted by the City, commercial development consumes 2.01 acre-feet of water per year per acre (City of Ripon 2015b). Based on this, project water demand would be approximately 3.24 acre-feet per year. Therefore, current water supplies would be adequate to serve the project without requiring new or expanded water entitlements. Moreover, based on an analysis in the City's Urban Water Management Plan, adequate supplies would be available for the project even during multiple-dry years, as water demand is not anticipated to exceed the maximum productive capacity of the City's wells (City of Ripon 2017). As noted, the City is pursuing a project to access SSJID water, which would supplement existing groundwater supplies. Therefore, project impacts on water supply would be less than significant.

c) Wastewater Treatment Capacity.

The project would connect to the City's wastewater system. Existing wastewater lines are in the project vicinity. As noted, the City's Wastewater Treatment Plant treated approximately 1.03 mgd of wastewater, and the maximum capacity of the plant is 2.43 mgd. Based on information in a Stockton wastewater plan, commercial development generates approximately 1,037 gallons per day per acre (Stockton MUD 2022). Using this factor, the project would generate approximately 1,670 gallons per day (0.0017 mgd) of wastewater. The Wastewater Treatment Plant would have adequate capacity to treat wastewater from the project. Project impacts on wastewater treatment capacity would be less than significant.

d) Solid Waste Services.

Development of the project site would generate a substantial new demand for solid waste disposal services. CalRecycle posted solid waste generation rates for commercial retail

land uses from several sources that range from 0.006 to 0.046 pounds per square foot per day (CalRecycle 2019). For this analysis, the more conservative 0.046 factor will be used. Using this factor, the project would generate an estimated 460 pounds per day, or approximately 84 tons per year.

While the content of a ton of solid waste varies, it has been approximated that a cubic yard of solid waste weighs 300 pounds, so the project would generate approximately 560 cubic yards of solid waste per year. As noted, the Fink Road Landfill has a remaining capacity of 18,993,322 cubic yards. Therefore, sufficient capacity exists at the landfill to accommodate the solid waste generated by the project without the need for expansion. Project impacts related to solid waste would be less than significant.

e) Solid Waste Regulations.

The project is expected to comply with applicable State and local solid waste regulations. These include the State recycling statutes and Ripon Municipal Code Chapter 8.12, which sets forth solid waste collection, disposal, and diversion requirements for residential, commercial, industrial, and other uses and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste. The project would have no impact related to compliance with solid waste regulations.

3.20 WILDFIRE

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

Environmental Setting

Wildland fires are an annual hazard in San Joaquin County. Wildland fires burn natural vegetation on undeveloped lands and include rangeland, brush, and grass fires. Long, hot, and dry summers, with temperatures often exceeding 100°F, add to the County's fire

hazard. Human activities are the major cause of wildland fires, with lightning another significant cause. High hazard areas for wildland fires are the grass-covered areas in the east and the southwest foothills of the County (San Joaquin County 2016).

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program identifies fire threat based on a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior. These two factors are combined in determining the following Fire Hazard Severity Zones: Moderate, High, Very High, Extreme. These zones apply to areas designated as State Responsibility Areas – areas in which the State has primary firefighting responsibility. The project site is not within a State Responsibility Area and therefore has not been placed in a Fire Hazard Severity Zone. The area surrounding the project site is likewise not in any designated fire hazard zone (Cal Fire 2022).

Environmental Impacts and Mitigation Measures

a) Emergency Response Plans and Emergency Evacuation Plans.

As noted in Section 3.9, Hazards and Hazardous Materials, the project would not interfere with movement of emergency response vehicles or evacuations once construction work is completed. The project would have no impact on emergency responses and evacuations.

b) Exposure of Project Occupants to Wildfire Hazards.

The project site is within a predominantly developed area that is not in a Fire Hazard Severity Zone. The nearest wildlands are along the Stanislaus River, which is approximately 1.2 miles to the southeast and is separated from the project site by roadways and urban development. Wildland along the Stanislaus River is limited, so fires and smoke produced by them would likewise be limited. The project would have no impact related to exposure of project occupants to wildfire hazards.

c) Installation and Maintenance of Infrastructure.

The project proposes the installation of parking areas and the extension of utility lines from existing facilities in the vicinity. The installation of these facilities is not expected to exacerbate the wildfire risk on the project site, which is minimal as explained in b) above. The project would have no impact related to exacerbation of wildfire hazards by infrastructure improvements.

d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes.

The project site is in a topographically flat area. There are no streams or other channels that cross the site. As such, it is not expected that people or structures would be exposed to significant risks from changes resulting from fires in steeper areas, including downslope or downstream flooding or landslides. The project would have no impact related to risks from runoff, post-fire slope instability, or drainage changes.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

a) Findings on Biological and Cultural Resources.

The project's potential biological resource impacts were described in Section 3.4, and its potential cultural resource impacts were described in Sections 3.5 and 3.18. No potentially significant environmental effects were identified for biological resources. Potentially significant effects were identified for cultural and tribal cultural resources; however, implementation of mitigation measures identified in Section 3.5 would reduce these effects to levels that would be less than significant.

b) Findings on Individually Limited but Cumulatively Considerable Impacts.

The potential cumulative impacts of urban development of the project site as part of development of the City were accounted for in the Ripon General Plan EIR (City of Ripon 2006b). The proposed project is consistent with the designation under the Ripon General Plan; as such, the project would not introduce any new cumulative impacts that were not analyzed in the General Plan EIR, nor would it lead to more severe cumulative impacts.

The potential environmental effects identified in this IS/MND have been considered in conjunction with each other as to their potential to generate other potentially significant effects. As described in this IS/MND, the potential environmental effects of the project would either be less than significant or would have no impact at all. Where the project involves potentially significant effects, these effects would be avoided or reduced to a level that is less than significant with proposed mitigation measures and/or compliance with applicable regulations and conditions of required permits. The various potential

environmental effects of the project would not combine to generate any potentially significant cumulative effects.

c) Findings on Adverse Effects on Human Beings.

Potential adverse effects on human beings were discussed in Section 3.7, Geology and Soils (seismic hazards); Section 3.9, Hazards and Hazardous Materials; Section 3.10, Hydrology and Water Quality (flooding); Section 3.17, Transportation (traffic hazards); and Section 3.20, Wildfire. All potential adverse effects on human beings identified in those sections would be reduced to levels that are less than significant through mitigation measures or through compliance with applicable laws, regulations, and ordinances.

4.0 REFERENCES

4.1 DOCUMENT PREPARERS

This IS/MND was prepared by BaseCamp Environmental, Inc. for use by and under the supervision of the City of Ripon. The following persons were involved in preparation of the IS/MND:

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4.3 PERSONS CONSULTED

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Katie Greene. Building Department, City of Ripon.

Daniel Sauer. Chief, Ripon Police Department.

Ken Zuidervaart, Director of Planning, Building & Economic Development, City of Ripon

5.0 NOTES RELATED TO 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, then 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 "Earlier Analyses," as described in (5) below, 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). Reference 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 significance 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 significance.

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AIR QUALITY MODELING RESULTS

Arc Way Station Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Arc Way Station
Construction Start Date	5/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	25.4
Location	37.74731480105794, -121.13183530123757
County	San Joaquin
City	Ripon
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2127
EDFZ	4
Electric Utility	Modesto Irrigation District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Convenience Market with Gas Pumps	4.00	1000sqft	0.09	4,000	20,874	—	—	—
Strip Mall	6.00	1000sqft	0.14	6,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-12	Sweep Paved Roads
Transportation	T-34*	Provide Bike Parking
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards
Water	W-7	Adopt a Water Conservation Strategy
Waste	S-1/S-2	Implement Waste Reduction Plan

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	10.1	10.4	0.02	0.46	5.37	5.84	0.43	2.58	3.01	1,790
Mit.	1.12	10.1	10.4	0.02	0.46	2.13	2.60	0.43	1.02	1.44	1,790
% Reduced	—	—	—	—	—	60%	55%	—	61%	52%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.40	5.21	7.09	0.01	0.22	0.15	0.34	0.20	0.03	0.21	1,385

Mit.	9.40	5.21	7.09	0.01	0.22	0.15	0.34	0.20	0.03	0.21	1,385
% Reduced	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.29	1.57	2.12	< 0.005	0.07	0.04	0.11	0.06	0.02	0.08	407
Mit.	0.29	1.57	2.12	< 0.005	0.07	0.03	0.09	0.06	0.01	0.07	407
% Reduced	—	—	—	—	—	43%	17%	—	50%	11%	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.29	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	67.4
Mit.	0.05	0.29	0.39	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	67.4
% Reduced	—	—	—	—	—	43%	17%	—	50%	11%	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	1.12	10.1	10.4	0.02	0.46	5.37	5.84	0.43	2.58	3.01	1,790
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	9.40	5.21	7.09	0.01	0.22	0.15	0.34	0.20	0.03	0.21	1,385
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	0.29	1.57	2.12	< 0.005	0.07	0.04	0.11	0.06	0.02	0.08	407
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.05	0.29	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	67.4

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	1.12	10.1	10.4	0.02	0.46	2.13	2.60	0.43	1.02	1.44	1,790
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	9.40	5.21	7.09	0.01	0.22	0.15	0.34	0.20	0.03	0.21	1,385
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	0.29	1.57	2.12	< 0.005	0.07	0.03	0.09	0.06	0.01	0.07	407
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.05	0.29	0.39	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	67.4

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.3	10.6	101	0.25	0.20	21.0	21.2	0.19	5.34	5.53	26,693
Mit.	11.3	10.6	101	0.25	0.20	21.0	21.2	0.19	5.34	5.53	26,660
% Reduced	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	12.2	86.0	0.23	0.20	21.0	21.2	0.19	5.34	5.53	24,828
Mit.	10.4	12.2	86.0	0.23	0.20	21.0	21.2	0.19	5.34	5.53	24,795
% Reduced	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.98	6.77	50.5	0.11	0.10	9.67	9.77	0.10	2.46	2.56	12,788
Mit.	8.98	6.77	50.5	0.11	0.10	9.67	9.77	0.10	2.46	2.56	12,755

% Reduced	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.64	1.24	9.22	0.02	0.02	1.76	1.78	0.02	0.45	0.47	2,117
Mit.	1.64	1.24	9.22	0.02	0.02	1.76	1.78	0.02	0.45	0.47	2,112
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	11.0	10.5	100	0.25	0.20	21.0	21.2	0.18	5.34	5.53	25,475
Area	0.30	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Energy	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	343
Water	—	—	—	—	—	—	—	—	—	—	9.36
Waste	—	—	—	—	—	—	—	—	—	—	34.5
Refrig.	—	—	—	—	—	—	—	—	—	—	829
Total	11.3	10.6	101	0.25	0.20	21.0	21.2	0.19	5.34	5.53	26,693
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	12.2	86.0	0.23	0.20	21.0	21.2	0.18	5.34	5.53	23,612
Area	0.23	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	343
Water	—	—	—	—	—	—	—	—	—	—	9.36
Waste	—	—	—	—	—	—	—	—	—	—	34.5
Refrig.	—	—	—	—	—	—	—	—	—	—	829
Total	10.4	12.2	86.0	0.23	0.20	21.0	21.2	0.19	5.34	5.53	24,828
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Mobile	8.71	6.72	50.3	0.11	0.10	9.67	9.77	0.09	2.46	2.55	11,570
Area	0.26	< 0.005	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.89
Energy	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	343
Water	—	—	—	—	—	—	—	—	—	—	9.36
Waste	—	—	—	—	—	—	—	—	—	—	34.5
Refrig.	—	—	—	—	—	—	—	—	—	—	829
Total	8.98	6.77	50.5	0.11	0.10	9.67	9.77	0.10	2.46	2.56	12,788
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.59	1.23	9.18	0.02	0.02	1.76	1.78	0.02	0.45	0.47	1,916
Area	0.05	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15
Energy	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	56.8
Water	—	—	—	—	—	—	—	—	—	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	5.72
Refrig.	—	—	—	—	—	—	—	—	—	—	137
Total	1.64	1.24	9.22	0.02	0.02	1.76	1.78	0.02	0.45	0.47	2,117

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	11.0	10.5	100	0.25	0.20	21.0	21.2	0.18	5.34	5.53	25,475
Area	0.30	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Energy	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	338
Water	—	—	—	—	—	—	—	—	—	—	7.49
Waste	—	—	—	—	—	—	—	—	—	—	8.64
Refrig.	—	—	—	—	—	—	—	—	—	—	829

Total	11.3	10.6	101	0.25	0.20	21.0	21.2	0.19	5.34	5.53	26,660
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	12.2	86.0	0.23	0.20	21.0	21.2	0.18	5.34	5.53	23,612
Area	0.23	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	338
Water	—	—	—	—	—	—	—	—	—	—	7.49
Waste	—	—	—	—	—	—	—	—	—	—	8.64
Refrig.	—	—	—	—	—	—	—	—	—	—	829
Total	10.4	12.2	86.0	0.23	0.20	21.0	21.2	0.19	5.34	5.53	24,795
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.71	6.72	50.3	0.11	0.10	9.67	9.77	0.09	2.46	2.55	11,570
Area	0.26	< 0.005	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.89
Energy	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	338
Water	—	—	—	—	—	—	—	—	—	—	7.49
Waste	—	—	—	—	—	—	—	—	—	—	8.64
Refrig.	—	—	—	—	—	—	—	—	—	—	829
Total	8.98	6.77	50.5	0.11	0.10	9.67	9.77	0.10	2.46	2.56	12,755
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.59	1.23	9.18	0.02	0.02	1.76	1.78	0.02	0.45	0.47	1,916
Area	0.05	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15
Energy	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	56.0
Water	—	—	—	—	—	—	—	—	—	—	1.24
Waste	—	—	—	—	—	—	—	—	—	—	1.43
Refrig.	—	—	—	—	—	—	—	—	—	—	137
Total	1.64	1.24	9.22	0.02	0.02	1.76	1.78	0.02	0.45	0.47	2,112

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	862
Dust From Material Movement	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	47.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	862
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	47.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	1,720
Dust From Material Movement	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.02	0.39	0.00	0.00	0.06	0.06	0.00	0.01	0.01	70.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	1,720
Dust From Material Movement	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.39	0.00	0.00	0.06	0.06	0.00	0.01	0.01	70.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.41	1.90	< 0.005	0.06	—	0.06	0.05	—	0.05	359
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	59.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	30.1
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	27.1
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.62
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.20
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.41	1.90	< 0.005	0.06	—	0.06	0.05	—	0.05	359

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	59.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	30.1
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	27.1
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.62
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.20
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	4.37	5.31	0.01	0.19	—	0.19	0.18	—	0.18	826
Paving	0.12	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.72	0.00	0.00	0.15	0.15	0.00	0.03	0.03	148
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	4.37	5.31	0.01	0.19	—	0.19	0.18	—	0.18	826
Paving	0.12	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.72	0.00	0.00	0.15	0.15	0.00	0.03	0.03	148
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	9.27	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.13	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Architectural Coating (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	9.27	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.13	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.42

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	9.91	9.52	90.6	0.22	0.18	19.0	19.2	0.17	4.83	4.99	23,023
Strip Mall	1.06	1.01	9.65	0.02	0.02	2.02	2.04	0.02	0.51	0.53	2,452
Total	11.0	10.5	100	0.25	0.20	21.0	21.2	0.18	5.34	5.53	25,475
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	9.16	11.0	77.7	0.21	0.18	19.0	19.2	0.17	4.83	4.99	21,339

Strip Mall	0.98	1.17	8.28	0.02	0.02	2.02	2.04	0.02	0.51	0.53	2,273
Total	10.1	12.2	86.0	0.23	0.20	21.0	21.2	0.18	5.34	5.53	23,612
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	1.43	1.04	7.79	0.02	0.01	1.43	1.45	0.01	0.36	0.38	1,565
Strip Mall	0.16	0.18	1.39	< 0.005	< 0.005	0.33	0.34	< 0.005	0.08	0.09	351
Total	1.59	1.23	9.18	0.02	0.02	1.76	1.78	0.02	0.45	0.47	1,916

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	9.91	9.52	90.6	0.22	0.18	19.0	19.2	0.17	4.83	4.99	23,023
Strip Mall	1.06	1.01	9.65	0.02	0.02	2.02	2.04	0.02	0.51	0.53	2,452
Total	11.0	10.5	100	0.25	0.20	21.0	21.2	0.18	5.34	5.53	25,475
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	9.16	11.0	77.7	0.21	0.18	19.0	19.2	0.17	4.83	4.99	21,339
Strip Mall	0.98	1.17	8.28	0.02	0.02	2.02	2.04	0.02	0.51	0.53	2,273
Total	10.1	12.2	86.0	0.23	0.20	21.0	21.2	0.18	5.34	5.53	23,612
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	1.43	1.04	7.79	0.02	0.01	1.43	1.45	0.01	0.36	0.38	1,565
Strip Mall	0.16	0.18	1.39	< 0.005	< 0.005	0.33	0.34	< 0.005	0.08	0.09	351

Total	1.59	1.23	9.18	0.02	0.02	1.76	1.78	0.02	0.45	0.47	1,916

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	229
Strip Mall	—	—	—	—	—	—	—	—	—	—	58.5
Total	—	—	—	—	—	—	—	—	—	—	288
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	229
Strip Mall	—	—	—	—	—	—	—	—	—	—	58.5
Total	—	—	—	—	—	—	—	—	—	—	288
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	37.9
Strip Mall	—	—	—	—	—	—	—	—	—	—	9.68
Total	—	—	—	—	—	—	—	—	—	—	47.6

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	227
Strip Mall	—	—	—	—	—	—	—	—	—	—	56.9
Total	—	—	—	—	—	—	—	—	—	—	284
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	227
Strip Mall	—	—	—	—	—	—	—	—	—	—	56.9
Total	—	—	—	—	—	—	—	—	—	—	284
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	37.7
Strip Mall	—	—	—	—	—	—	—	—	—	—	9.43
Total	—	—	—	—	—	—	—	—	—	—	47.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	38.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	16.6

Total	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	55.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	38.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	16.6
Total	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	55.5
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.44
Strip Mall	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.75
Total	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.19

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	37.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	15.8
Total	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	53.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	37.9
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	15.8

Total	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	53.7
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.27
Strip Mall	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.62
Total	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.89

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.21	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Total	0.30	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.21	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—
Total	0.23	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	0.04	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15
Total	0.05	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.21	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Total	0.30	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.21	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—
Total	0.23	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.04	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	—	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15
Total	0.05	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.15

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	4.09
Strip Mall	—	—	—	—	—	—	—	—	—	—	5.27
Total	—	—	—	—	—	—	—	—	—	—	9.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	4.09
Strip Mall	—	—	—	—	—	—	—	—	—	—	5.27
Total	—	—	—	—	—	—	—	—	—	—	9.36
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.68
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.87
Total	—	—	—	—	—	—	—	—	—	—	1.55

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	3.27
Strip Mall	—	—	—	—	—	—	—	—	—	—	4.22
Total	—	—	—	—	—	—	—	—	—	—	7.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	3.27
Strip Mall	—	—	—	—	—	—	—	—	—	—	4.22
Total	—	—	—	—	—	—	—	—	—	—	7.49
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.54
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	1.24

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	22.7
Strip Mall	—	—	—	—	—	—	—	—	—	—	11.9
Total	—	—	—	—	—	—	—	—	—	—	34.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	22.7
Strip Mall	—	—	—	—	—	—	—	—	—	—	11.9
Total	—	—	—	—	—	—	—	—	—	—	34.5
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	3.75
Strip Mall	—	—	—	—	—	—	—	—	—	—	1.97
Total	—	—	—	—	—	—	—	—	—	—	5.72

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	5.67
Strip Mall	—	—	—	—	—	—	—	—	—	—	2.97
Total	—	—	—	—	—	—	—	—	—	—	8.64

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	5.67
Strip Mall	—	—	—	—	—	—	—	—	—	—	2.97
Total	—	—	—	—	—	—	—	—	—	—	8.64
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.94
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.49
Total	—	—	—	—	—	—	—	—	—	—	1.43

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	829
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	829
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	829
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.04

Total	—	—	—	—	—	—	—	—	—	—	829
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	137
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.01
Total	—	—	—	—	—	—	—	—	—	—	137

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	829
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	829
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	829
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	829
Annual	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	137
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.01
Total	—	—	—	—	—	—	—	—	—	—	137

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	5/16/2025	5/17/2025	5.00	1.00	—
Grading	Grading	5/18/2025	5/20/2025	5.00	2.00	—
Building Construction	Building Construction	5/21/2025	10/8/2025	5.00	100	—

Paving	Paving	10/9/2025	10/16/2025	5.00	5.00	—
Architectural Coating	Architectural Coating	10/17/2025	10/24/2025	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41

Site Preparation	Tractors/Loaders/Backh	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backh oes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backh oes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backh oes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT

Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3.20	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	1.64	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.64	11.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	9.10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.9	LDA,LDT1,LDT2

Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3.20	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	1.64	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.64	11.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	9.10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	15,000	5,000	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.22

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market with Gas Pumps	0.11	100%
Strip Mall	0.11	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	488	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Convenience Market with Gas Pumps	2,497	2,497	2,497	911,332	5,018	26,654	26,654	4,087,983

Strip Mall	266	252	123	88,873	2,839	2,693	1,309	948,754

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Convenience Market with Gas Pumps	2,497	2,497	2,497	911,332	5,018	26,654	26,654	4,087,983
Strip Mall	266	252	123	88,873	2,839	2,693	1,309	948,754

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	15,000	5,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Convenience Market with Gas Pumps	204,867	406	0.0330	0.0040	120,951
Strip Mall	52,272	406	0.0330	0.0040	51,754

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Convenience Market with Gas Pumps	203,328	406	0.0330	0.0040	117,845
Strip Mall	50,888	406	0.0330	0.0040	49,231

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Convenience Market with Gas Pumps	296,290	292,989
Strip Mall	444,435	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Convenience Market with Gas Pumps	237,032	234,391
Strip Mall	355,548	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	12.0	—
Strip Mall	6.30	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	3.01	—
Strip Mall	1.58	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	22.4	annual days of extreme heat
Extreme Precipitation	1.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	21.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.9
AQ-PM	52.8
AQ-DPM	37.0
Drinking Water	97.9
Lead Risk Housing	9.46
Pesticides	97.3
Toxic Releases	61.0
Traffic	21.2
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	80.4
Haz Waste Facilities/Generators	39.8
Impaired Water Bodies	83.0
Solid Waste	0.00

Sensitive Population	—
Asthma	36.7
Cardio-vascular	46.2
Low Birth Weights	84.5
Socioeconomic Factor Indicators	—
Education	38.5
Housing	4.74
Linguistic	12.3
Poverty	35.2
Unemployment	51.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	74.3744386
Employed	67.86860003
Median HI	83.29269858
Education	—
Bachelor's or higher	56.2042859
High school enrollment	100
Preschool enrollment	58.48838701
Transportation	—
Auto Access	77.83908636
Active commuting	19.1068908
Social	—
2-parent households	91.65918132

Voting	94.00744258
Neighborhood	—
Alcohol availability	90.83793148
Park access	32.04157577
Retail density	6.249197998
Supermarket access	29.89862697
Tree canopy	85.30732709
Housing	—
Homeownership	85.42281535
Housing habitability	89.88836135
Low-inc homeowner severe housing cost burden	89.79853715
Low-inc renter severe housing cost burden	74.86205569
Uncrowded housing	82.07365584
Health Outcomes	—
Insured adults	91.18439625
Arthritis	0.0
Asthma ER Admissions	51.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	72.8
Cognitively Disabled	35.0
Physically Disabled	65.4
Heart Attack ER Admissions	36.8

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	69.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	44.4
Elderly	37.4
English Speaking	78.4
Foreign-born	6.4
Outdoor Workers	39.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	76.2
Traffic Density	48.4
Traffic Access	0.0
Other Indices	—
Hardship	24.1
Other Decision Support	—
2016 Voting	82.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	52.0
Healthy Places Index Score for Project Location (b)	80.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	No demolition required.
Construction: Paving	Estimated paved area.

2022 CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-up Tool
Version 1.0 - February 18, 2022

Required Value	User Defined Input	Instructions
Annual Throughput (gallons/year)	912500	Enter your gas station's annual throughput in gallons of gasoline dispensed per year.
Hourly Dispensing Throughput (gallons/hour)	500	The tool will calculate the maximum hourly vehicle fueling throughput based on annual throughput as defined by Table 10 of the 2020 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Document (Technical Guidance). If a different value is desired please enter it into cell L4.
Hourly Loading Throughput (gallons/hour)	8800	The tool will calculate the maximum hourly loading throughput based on annual throughput as defined by Table 10 of the Technical Guidance. If a different value is desired please enter it into cell L5.
Meteorological Data	Fresno	Select appropriate meteorological data. Met sets provided include 2 rural (Redding and Lancaster) and 4 urban (Fresno, Ontario, San Diego, and San Jose) locations. Use whichever best correlates to your location. If you would like to use site-specific meteorological data please refer to the Variable Met Tool.
Distance to Nearest Resident (meters)	61	Enter the distance to the nearest residential receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Nearest Business (meters)	70	Enter the distance to the nearest worker receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Acute Receptor (meters)	61	Enter the distance where acute impacts are expected in meters as measured from the edge of the station canopy. This can be the distance to the property boundary, nearest resident, nearest worker, or any other user defined location. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Control Scenario	EVR Phase I & EVR Phase II	Select the appropriate control scenario for your gas station. Please refer to technical Guidance for an explanation of the different control scenarios. Almost all gas stations in California are equipped with EVR Phase I and EVR Phase II controls.
Include Building Downwash Adjustments	yes	Building downwash may over estimate risk results. High results should be investigated further through site-specific health risk assessment.

Risk Value	Results
Max Residential Cancer Risk (chances/million)	1.03
Max Worker Cancer Risk (chances/million)	0.07
Chronic HI	0.00
Acute HI	0.48

APPENDIX B
BIOLOGICAL RESOURCE MATERIALS

Element_Type	Scientific_Name	Common_Name	Element_Code	Federal_Status	State_Status	CDFW_Status	CA_Rare_Plant_Rank	Quad_Code	Quad_Name	Data_Status	Taxonomic_Sort
Animals - Amphibians	Ambystoma californiense pop. 1	California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	WL	-	3712162	RIPON	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense pop. 1
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	Proposed Threatened	None	SSC	-	3712162	RIPON	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Birds	Accipiter cooperii	Coopers hawk	ABNKC12040	None	None	WL	-	3712162	RIPON	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Buteo swainsoni	Swainsons hawk	ABNKC19070	None	Threatened	-	-	3712162	RIPON	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712162	RIPON	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	WL	-	3712162	RIPON	Mapped and Unprocessed	Animals - Birds - Anatidae - Branta hutchinsii leucopareia
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3712162	RIPON	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3712162	RIPON	Mapped	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Spinus lawrencei	Lawrences goldfinch	ABPBY06100	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3712162	RIPON	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia

Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Crustaceans	Branchinecta conservatio	Conservancy fairy shrimp	ICBRA03010	Endangered	None	-	-	3712162	RIPON	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta conservatio
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3712162	RIPON	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3712162	RIPON	Mapped	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3712162	RIPON	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Fish	Acipenser medirostris pop. 1	green sturgeon - southern DPS	AFCAA01031	Threatened	None	-	-	3712162	RIPON	Mapped and Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 1
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Centrarchidae - Archoplites interruptus
Animals - Fish	Cottus gulosus	riffle sculpin	AFC4E02140	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Cottidae - Cottus gulosus
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3712162	RIPON	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii

Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Oncorhynchus keta	chum salmon	AFCHA02020	None	None	-	-	3712162	RIPON	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus keta
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3712162	RIPON	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	-	-	3712162	RIPON	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3712162	RIPON	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Lytta moesta	moestan blister beetle	IICOL4C020	None	None	-	-	3712162	RIPON	Mapped	Animals - Insects - Meloidae - Lytta moesta
Animals - Insects	Rhaphiomidas trochilus	San Joaquin Valley giant flower-loving fly	IIDIP05010	None	None	-	-	3712162	RIPON	Mapped	Animals - Insects - Mydidae - Rhaphiomidas trochilus
Animals - Mammals	Neotoma fuscipes riparia	riparian (=San Joaquin Valley) woodrat	AMAFF08081	Endangered	None	SSC	-	3712162	RIPON	Mapped	Animals - Mammals - Cricetidae - Neotoma fuscipes riparia
Animals - Mammals	Sylvilagus bachmani riparius	riparian brush rabbit	AMAEB01021	Endangered	Endangered	-	-	3712162	RIPON	Mapped and Unprocessed	Animals - Mammals - Leporidae - Sylvilagus bachmani riparius
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	Proposed Threatened	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712162	RIPON	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Community - Terrestrial	Elderberry Savanna	Elderberry Savanna	CTT63440CA	None	None	-	-	3712162	RIPON	Mapped	Community - Terrestrial -

											Elderberry Savanna
Community - Terrestrial	Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	-	-	3712162	RIPON	Mapped	Community - Terrestrial - Great Valley Cottonwood Riparian Forest
Community - Terrestrial	Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	CTT61420CA	None	None	-	-	3712162	RIPON	Mapped	Community - Terrestrial - Great Valley Mixed Riparian Forest
Community - Terrestrial	Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	-	-	3712162	RIPON	Mapped	Community - Terrestrial - Great Valley Valley Oak Riparian Forest
Plants - Vascular	Eryngium racemosum	Delta button-celery	PDAPI0Z0S0	None	Endangered	-	1B.1	3712162	RIPON	Mapped	Plants - Vascular - Apiaceae - Eryngium racemosum
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	None	None	-	1B.1	3712162	RIPON	Mapped	Plants - Vascular - Asteraceae - Lasthenia chrysantha
Plants - Vascular	Atriplex coronata var. coronata	crownscale	PDCHE040C3	None	None	-	4.2	3712162	RIPON	Unprocessed	Plants - Vascular - Chenopodiaceae - Atriplex coronata var. coronata
Plants - Vascular	Atriplex minuscula	lesser saltscale	PDCHE042M0	None	None	-	1B.1	3712162	RIPON	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex minuscula
Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3712162	RIPON	Mapped	Plants - Vascular - Poaceae - Puccinellia simplex

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Riparian Brush Rabbit Sylvilagus bachmani riparius Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6189	Endangered

Riparian Woodrat (=san Joaquin Valley) Neotoma fuscipes riparia — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6191

Birds

NAME	STATUS
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot Spea hammondii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

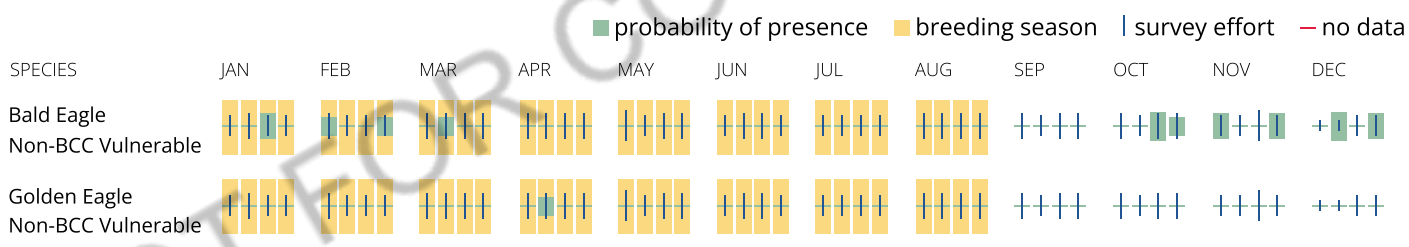
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and

that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

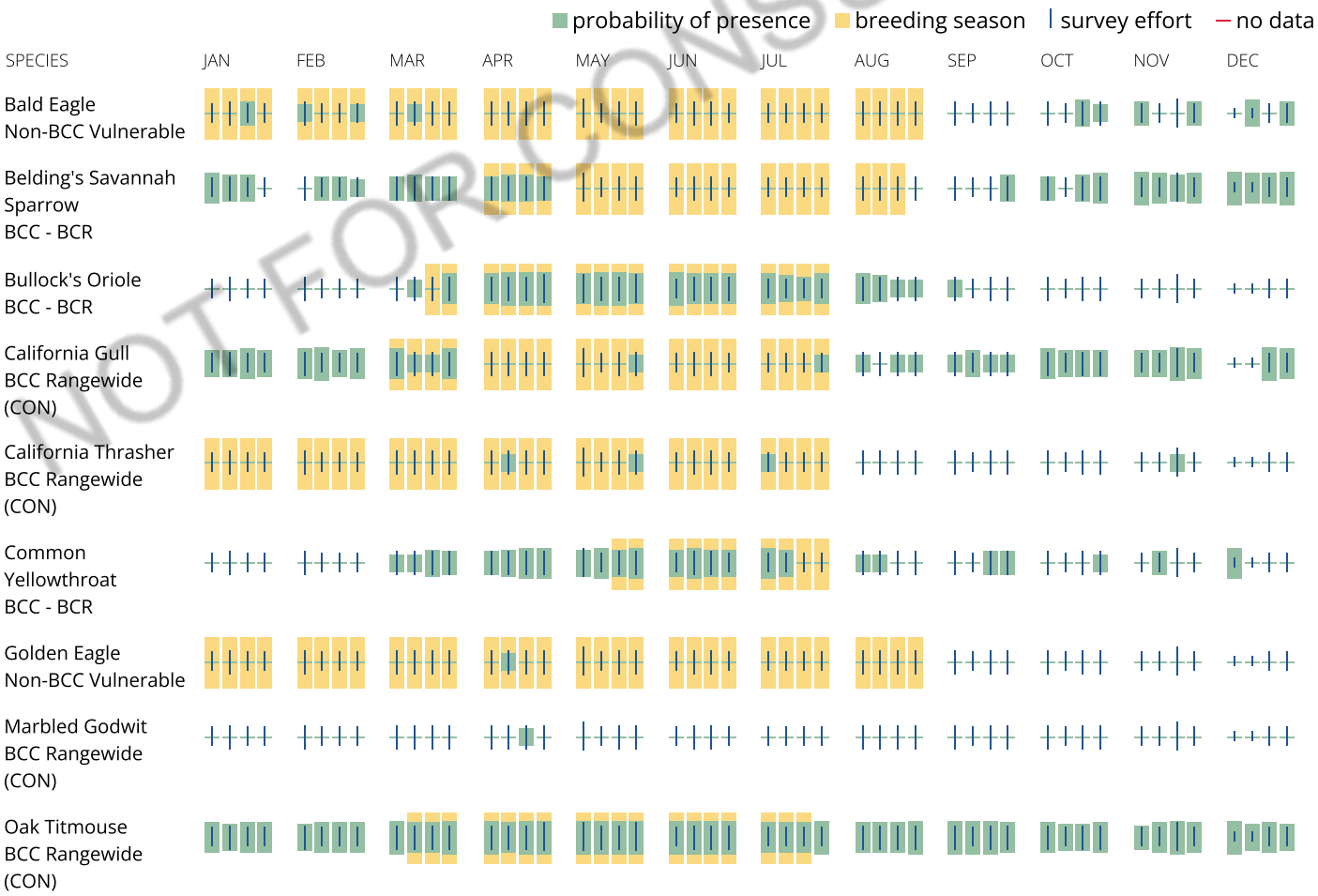
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

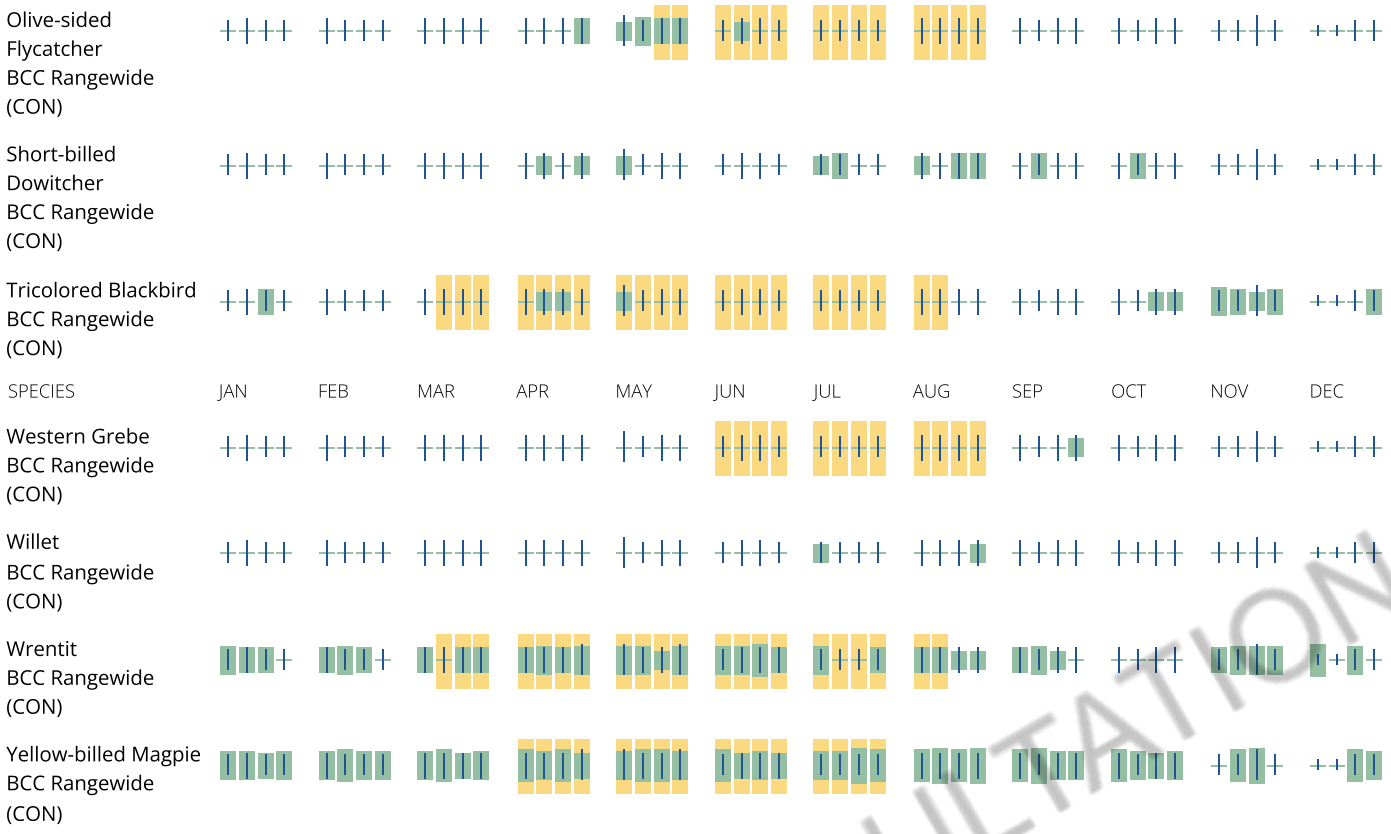
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral

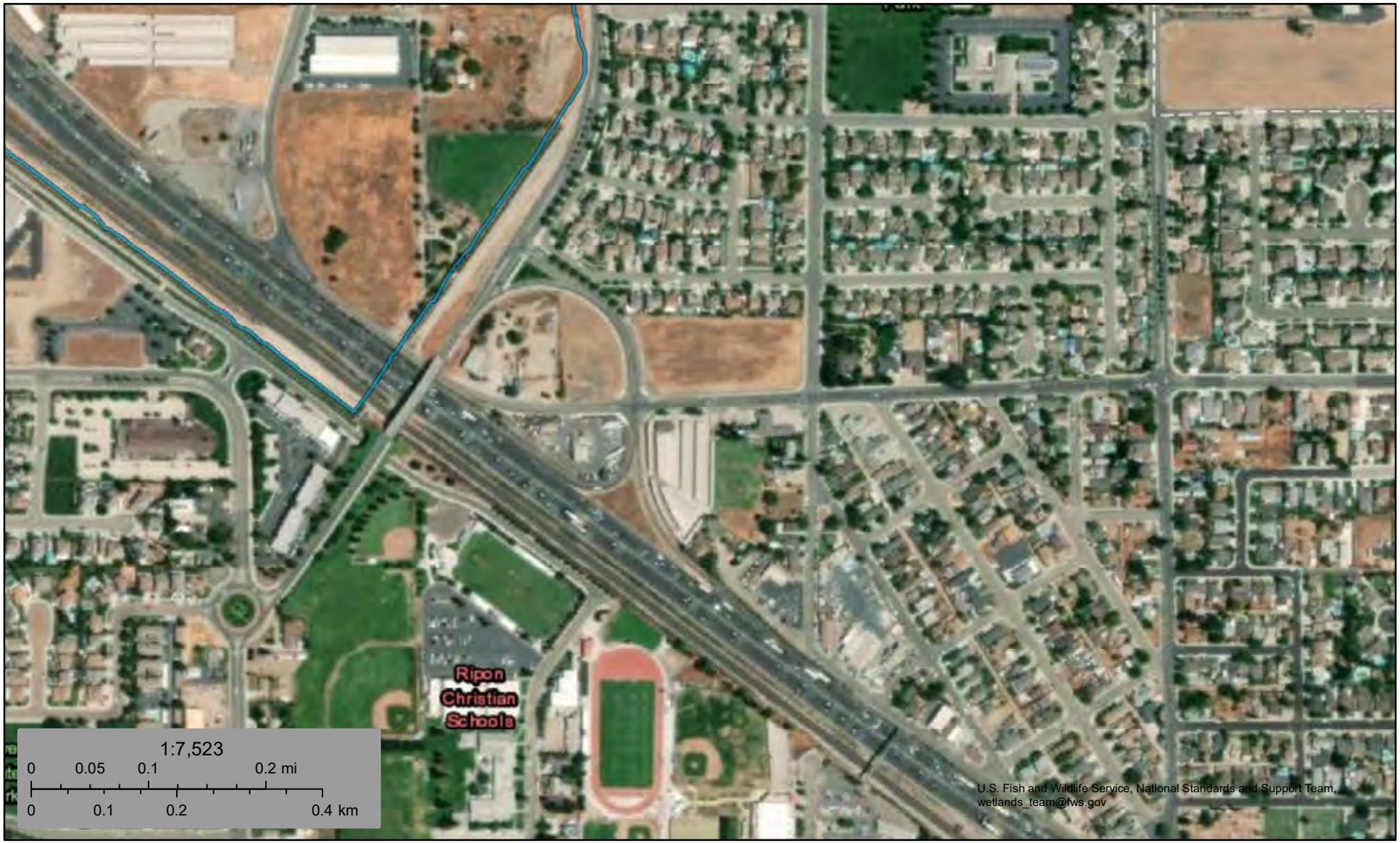
or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Arc Way



March 6, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

APPENDIX C
CENTRAL CALIFORNIA INFORMATION CENTER LETTER

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: 1/23/2024

Records Search File #: 12783L
Project: Arc Road Fueling and Convenience Station, 769 Frontage Road, Ripon, CA

Rayanna Beck
BaseCamp Environmental
802 West Lodi Ave.
Lodi, CA 95240
209-224-8213

rbeck@basecampenv.com

Dear Ms. Beck:

We have conducted a non-confidential extended records search as per your request for the above-referenced project area located on the Ripon USGS 7.5-minute quadrangle map in San Joaquin 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 following:

National Register of Historic Places (NRHP)
California Register of Historical Resources (CRHR)
California Inventory of Historic Resources (1976)
California Historical Landmarks
California Points of Historical Interest listing
Office of Historic Preservation Built Environment Resource Directory (BERD) and the Archaeological Resources Directory (ARD)
Survey of Surveys (1989)
Caltrans State and Local Bridges Inventory
General Land Office Plats
Other pertinent historic data available at the CCaIC for each specific county

The following details the results of the records search:

Prehistoric or historic resources within the project area:

- There are no formally recorded prehistoric or historic archaeological resources or historic buildings or structures within the project area.

- The General Land Office Survey Plat for T2S R8E (dated 1854) shows the NE ¼ of Section 19 as a 160-acre parcel.

- The Map of the County of San Joaquin, California (1883) shows Section 19, T2S R8E

within the “Estate of John McMullen.”

- The 1914 edition of the Ripon 15’ USGS quadrangle shows the W. Milgeo Avenue road alignment immediately south of the project area. The Southern Pacific Railroad is also referenced south of the project area.

- The 1952 edition of the Ripon 7.5’ quadrangle shows Milgeo Avenue, the railroad, and SR 99.

Prehistoric or historic resources within the immediate vicinity of the project area: None has been formally reported to the Information Center.

Resources that are known to have value to local cultural groups: None has been formally reported to the Information Center.

Previous investigations within the project area: None has been formally reported to the Information Center.

Recommendations/Comments:

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. Since the project area has not been subject to previous investigations, 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 the current project does not include ground disturbance, further study for archaeological resources is not recommended at this time. If ground disturbance is considered a part of the current project, we recommend further review for the possibility of identifying prehistoric or historic-era archaeological resources.

If the proposed project contains buildings or structures that meet the minimum age requirement (45 years in age or older) it is recommended that the resource/s be assessed by a professional familiar with architecture and history of the county. Review of the available historic building/structure data has included only those sources listed above and should not be considered comprehensive.

If at any time you might require the services of a qualified professional the Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at http://chrisinfo.org

If archaeological resources are encountered during project-related activities**,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the

situation and provided appropriate recommendations. Project personnel should not collect cultural resources.

If human remains are discovered, California Health and Safety Code Section 7050.5 requires you to protect the discovery and notify the county coroner, who will determine if the find is Native American. If the remains are recognized as Native American, the coroner shall then notify the Native American Heritage Commission (NAHC). California Public Resources Code Section 5097.98 authorizes the NAHC to appoint a Most Likely Descendant (MLD) who will make recommendations for the treatment of the discovery.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the State 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 contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Thank you for submitting the signed **Access Agreement Short Form. Note:** Billing will be transmitted separately via email from the Financial Services office ($150.00), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

APPENDIX D
TRANSPORTATION IMPACT ANALYSIS

TRAFFIC IMPACT ANALYSIS

FOR

769 ARC WAY COMMERCIAL PROJECT

Ripon, CA

Prepared For:

BASECAMP ENVIRONMENTAL, INC.
802 LW. Lodi Avenue
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Prepared By:

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8020 SW Valley View Ct
Portland, OR 97225
(916) 501-7513

May 8, 2024

0900-01

769 Arc Way

769 ARC WAY COMMERCIAL PROJECT
TRAFFIC IMPACT ANALYSIS

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FA

769 ARC WAY COMMERCIAL PROJECT
TRAFFIC IMPACT ANALYSIS

EXECUTIVE SUMMARY

Project Description. This study evaluates the traffic impacts associated with the proposed commercial project at 769 Arc Way in Ripon. The project is located in the northwest quadrant of the Arc Way / W. Milgeo Avenue / Northbound State Route (SR) 99 northbound ramps / Frontage Road intersection and includes the following development:

- 12 fueling position gas station with a 4,000 square foot convenience store
- 6,000 square foot retail center

The project is expected to generate approximately 3,508 daily trips with 115 a.m. trips, 130 p.m. trips and 111 midday trips projected. After accounting for internal and pass-by trips the project is expected to generate 1,481 new daily trips, 82 new a.m. peak hour trips, 117 new p.m. peak hour trips and 94 new midday peak hour trips.

Existing Conditions.

VMT

A screen line VMT analysis was conducted for the site. The proposed project is a 4,000 square foot – 12 vehicle fueling position gas station / convenience store retail business and a 6,000 square foot retail center. This site is 50,000 square feet or less of local retail use and is therefore presumed to be less than significant under this screen line criteria.

Intersection Level of Service

Levels of Service were evaluated for two intersections to provide a baseline analysis to meet local transportation impact criteria. The intersection locations included the Fulton Avenue / Arc Way intersection and the Arc Way – SR 99 NB Ramps / W. Milgeo Avenue – Frontage Road intersection. The analysis included a.m., p.m. and midday peak hours at each intersection; the midday peak hour coincides with the release time of the nearby elementary school. City of Ripon Level of Service policy considers LOS D as the acceptable threshold.

The Fulton Avenue / Arc Way intersection currently operates at LOS F in the a.m. peak hour and LOS E in the p.m. peak hour. The intersection does not meet the peak hour signal warrant. Installation of all-way stop control will improve the intersection to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour. The longest projected queue along the eastbound Fulton Avenue

approach is about 228 feet during the a.m. peak hour. The distance from the projected stop line to the free right turn ramp to Arc Way is about 200 feet; thus, an all-way stop could queue vehicles beyond the ramp. The roadway width between the ramp and the Arc Way intersection is about 24 feet and is consistent with the two-lane departure on the east side of the intersection. The addition of lane striping to provide two approach lanes will further improve the intersection operation to LOS C and will also reduce the queue on this approach to about 60 feet.

Significant Transportation Effects for Existing plus Project Conditions. The Fulton Avenue / Arc Way intersection will operate at LOS F conditions in both a.m. and p.m. peak hours with the project.

The following recommendations are made:

- The project should pay their fair share traffic impact fees in Ripon.

- The addition of an all-way stop condition will improve the operation of the intersection to LOS D and C in the a.m. and p.m. periods, respectively. The eastbound queue along Fulton Avenue will be worsened; however, with the lane striping added between Arc Way and the ramp to Arc Way, the queue will shorten to about 63 feet.

- Truck traffic to the site should be limited to fuel trucks and WB-40 trailers with deliveries limited to off-hours to minimize blocking of driveways and drive aisles.

- Landscaping within the sight triangles should be limited to low-lying landscaping with any trees having canopies no less than eight feet. In addition, parking should not be allowed within the sight triangles. No parking signs currently exist along Arc Way. No parking sign should be implemented along the project frontage along Frontage Road from the Arc Way intersection to the project driveway.

769 ARC WAY COMMERCIAL PROJECT
TRAFFIC IMPACT ANALYSIS

INTRODUCTION

Study Purpose and Objectives

This study evaluates the traffic impacts associated with the proposed 769 Arc Way project in Ripon. The project is located in the northwest quadrant of the Arc Way / W. Milgeo Avenue / Northbound State Route (SR) 99 northbound ramps / Frontage Road intersection as shown in Figure 1. The project includes the following development:

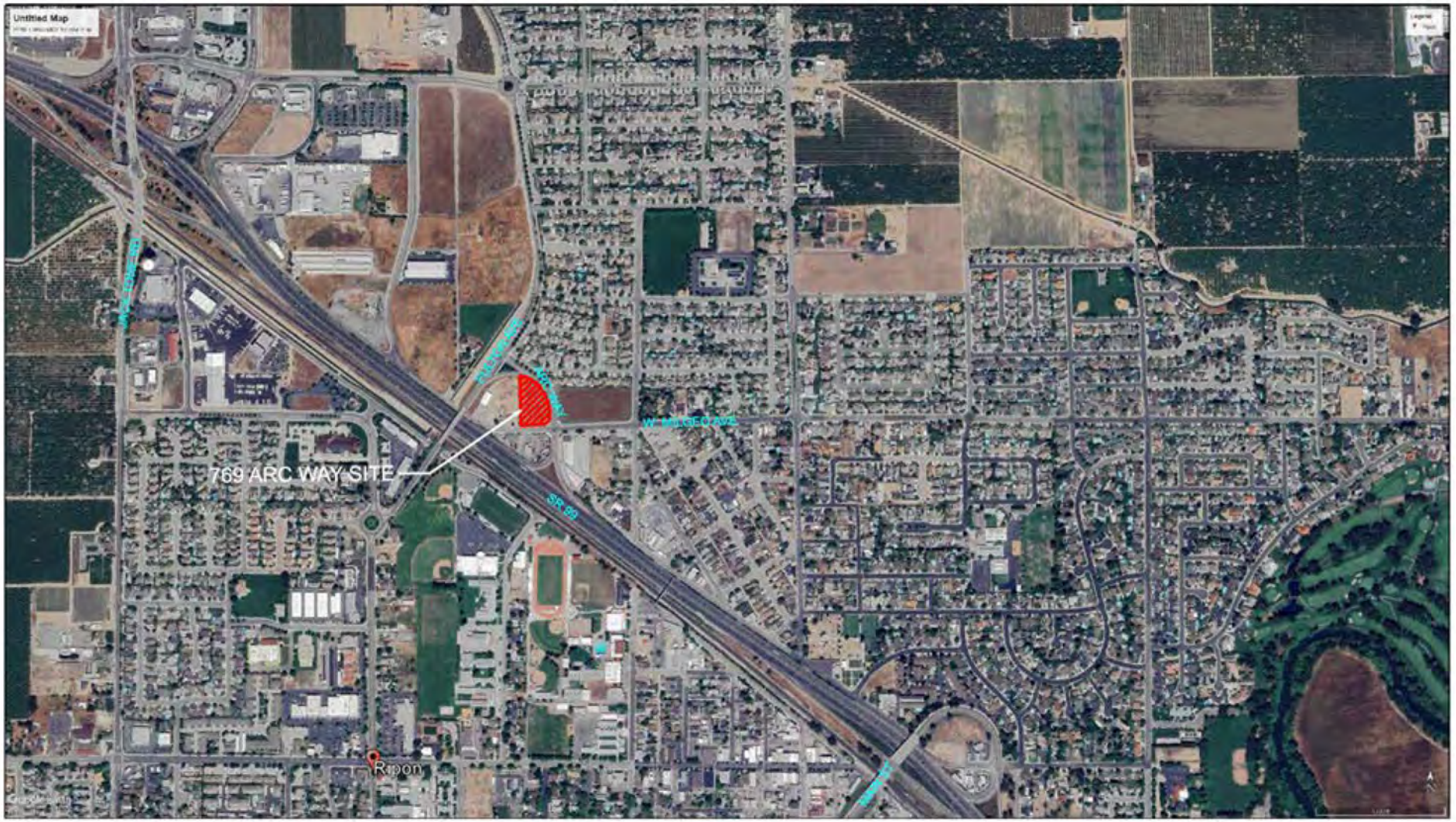
- 12 fueling position gas station with a 4,000 square foot convenience store
- 6,000 square foot retail center

The proposed site plan is shown in Figure 2. Access to the site will be via two new driveways; one driveway will provide right-in, right-out access along Arc Way while the second access is along Frontage Road and will be full access.

The study parameters are consistent with City of Ripon guidelines. The study addresses the following traffic scenarios:

1. Existing (2024) Peak Hour Traffic Conditions;
2. Existing plus Project Peak Hour Traffic Conditions;

The purpose of this analysis is to identify the potential traffic-related impacts of the project within the context of current traffic conditions and to evaluate site access and on-site circulation for the proposed project. The extent to which improvements may already be needed to meet minimum standards was evaluated. The characteristics of the proposed project were determined based on probable peak hour, regional trip distribution and local trip assignment. Improvements needed to ensure satisfactory operation of area intersections under each development scenario are identified.

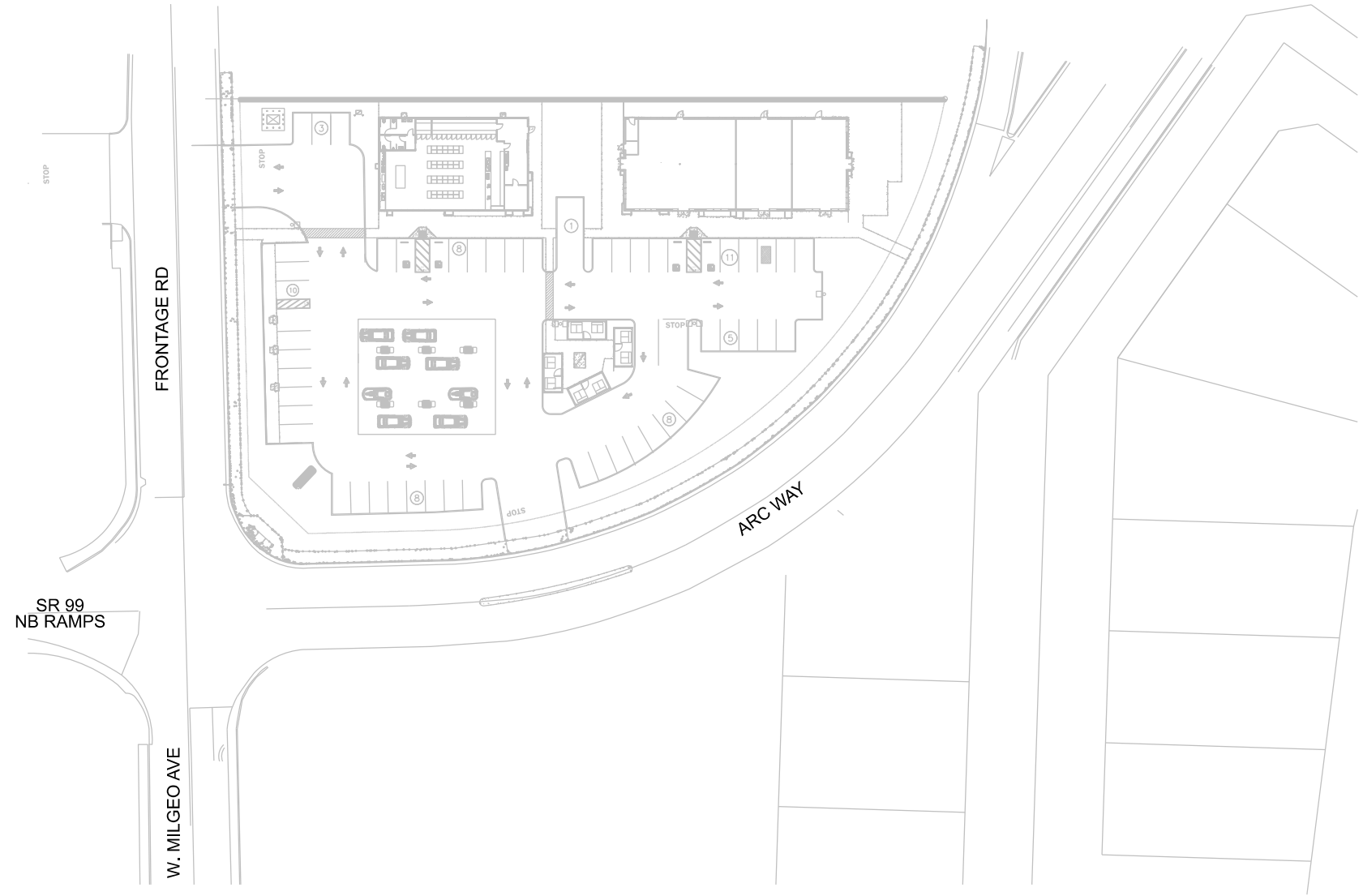


VICINTY MAP

FIGURE 1

FLECKER ASSOCIATES

0900-01



769 ARC WAY COMMERCIAL SITE PLAN

FIGURE 2

FLECKER ASSOCIATES

0900-01

ANALYSIS CRITERIA

Vehicles Miles Travelled

With the implementation of SB 743 the focus of a transportation impact analysis under CEQA moves from consideration of operating Level of Service (LOS) to evaluation of a project's effects on regional VMT. Based on discussion with City staff Ripon has not yet adopted VMT guidelines for VMT. For the purposes of this study, the Office of Planning and Research (OPR) guidelines were used to analyze the effects of VMT by the project.

The materials which follow describe the approved and proposed land uses on the Midway Plaza site and explain the methodology and significance criteria employed to determine regional VMT impacts. The results of the analysis are described in terms of quantitative analysis based on a review of the relationships between the project and its surrounding land uses.

Background. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers to measuring the environmental impact of driving. The change has been made by replacing LOS with VMT. This change was made to align CEQA transportation impact analysis and mitigation with the State's goals for reducing greenhouse gas (GHG) emissions, to encourage infill development, and to improve public health through more active transportation. Level of Service is still used to assess a project's effects outside of CEQA and this traffic operational analysis under City of Ripon guidelines was also prepared for this project.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of Administrative Law and are now in effect. The provisions apply statewide as of July 1, 2020.

To help aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the *Technical Advisory on Evaluating Transportation Impacts in CEQA*[1] (December 2018). This document provides guidance regarding the variety of implementation questions to be faced with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per capita" and "per employee" basis.
- OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable significance threshold. In other words, an office project that generates VMT per employee that is more than 85 percent of the regional

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

average VMT per employee could result in a significant impact. OPR notes that this threshold is supported by evidence that connects this level of reduction to the State's emissions goals.

- OPR recommends that where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.
- OPR states that by adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Generally, OPR suggested that retail development including stores smaller than 50,000 square feet might be considered local serving.
- Lead agencies have the discretion to set or apply their own significance thresholds.

Vehicle Miles Traveled Analysis

Vehicle Miles Traveled (VMT) refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT shall be calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from the project.

Process. As has not yet adopted guidelines for addressing VMT impacts for land development projects in compliance with CEQA Guidelines Section 15064.3, guidance provided in the Governor's Office of Planning and Research (OPR) technical directive on CEQA has been employed. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- ***Screening Criteria***: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study.

- ***Significance Thresholds***: Significance thresholds define what constitutes an acceptable level of VMT and what is considered a significant level of VMT requiring mitigation.

- ***Analysis Methodology***: These are the procedures and tools for producing VMT forecasts to use in the VMT impact assessment.

- ***Mitigation***: Projects that are found to have a significant VMT impact based on the City's significance thresholds are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening Criteria. Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a

detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Projects meeting at least one of the criteria below can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

The following screening criteria have been reviewed. The extent to which the proposed project qualifies under each criterion is also noted.

- Small Projects – The proposed project is estimated to generate 978 new daily trips. This value exceeds the 110 daily threshold, and this screening criterion does not apply.

- Affordable Housing – The proposed project is not a residential use, and this screening criterion does not apply.

- Locations Served by High Quality Transit – The proposed project is along two transit routes; however, the current service does not meet the 15-minute headway. Therefore, this screening criterion does not apply.

- Local Serving Retail – The proposed project is a 4,000 square foot – 12 vehicle fueling position gas station / convenience store retail business and a 6,000 square foot retail center. **This site is 50,000 square feet or less of local retail use and is therefore presumed to be less than significant under this screen line criteria.**

General Plan Policy Consistency Level of Service Analysis Methodology

To assess the quality of existing traffic conditions and provide a basis for analyzing project impacts, Levels of Service were calculated at study area intersections and project driveways. "Level of Service" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment.

The analysis techniques presented in the Highway Capacity Manual 7th Edition were used to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

Various software programs have been developed to assist in calculating intersection Level of Service, and the level of sophistication of each program responds to factors that affect the overall flow of traffic. *Synchro* software, Version 12 was utilized for the analysis.

The Level of Service (LOS) policy of the City of Ripon governs this analysis. The City identifies LOS D is the design standard for the City.

Table 1 presents general characteristics associated with each Level of Service grade.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Ave Delay ≤ 10 seconds per vehicle	Little or no delay. Ave Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10 sec/veh and ≤ 20 sec/veh	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay >20 sec/veh and <35 sec/veh	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35 sec/veh and < 55 sec/veh	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay >55 sec and ≤ 80 sec/veh	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80 sec/veh	Intersection often blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: Highway Capacity Manual, 7th Edition			

Traffic Signal Warrants. The extent to which existing or projected traffic volumes may justify signalization at un-signalized intersections has been determined based on consideration of traffic signal warrant presented in the *Manual of Uniform Traffic Control Devices, 2014.* For this analysis, the volume thresholds associated with Warrant 3 (Peak Hour Volume) have been assessed. The urban criteria was used based on the location and surrounding roadway speed limits under 40 mph. The meeting of a traffic signal warrant does not, in itself, require installation of a traffic signal but serves as a method to identify a location where further analysis is required.

EXISTING SETTING

Study Area

This study addresses traffic conditions in the vicinity of the Commercial project site. The proposed project will be served locally via Arc Way, W. Milgeo Avenue and Frontage Road and regionally by the SR 99 northbound ramps.

Study Area Intersections

The quality of traffic flow is typically governed by the operation of major intersections. Two existing intersections were identified by City staff for evaluation. These include:

1) Fulton Avenue at Arc Way
2) W. Milgeo Avenue at Arc Way

A.m, midday and p.m. mid-week peak hour counts were conducted at each intersection during mid-April 2024. Each study intersection is described below:

Fulton Avenue / Arc Way is a tee intersection with an "off-ramp" configuration for eastbound Fulton Avenue to southbound Arc Way movements; for this analysis Fulton Avenue is referred to as east and west, although the roadway is actually oriented northeast-southwest.

The intersection is stop controlled along Arc Way. Fulton Avenue west of Arc Way is a two-lane roadway providing access to the west side of the City past SR 99. As noted above the eastbound to southbound movement occurs via an "off-ramp" that is yield controlled at the merge along Arc Way. A single eastbound through lane is present along the approach with two lanes on the departure side of the intersection. The westbound approach along Fulton Avenue includes two through lanes and a left turn lane; the through lanes merge into a single lane as vehicles cross the Arc Way intersection. Arc Way is a two-lane roadway with a single northbound lane leading to the intersection. The lane is wide enough to allow right turning traffic to slip past left turning vehicles. A marked east-west crosswalk is present across the south side (Arc Way approach) of the intersection.

W. Milgeo Avenue / Arc Way / SR 99 Northbound Ramps / Frontage Road is an all-way stop controlled intersection. All approaches to the intersection a single lane except for westbound W. Milgeo Avenue which consists of a shared left-through lane and a right run only lane.

Existing Traffic Conditions

Traffic Volume Counts. Intersection turning movements (ITM) counts were completed during mid-April 2024 while school was in session. Figure 3 presents the a.m., p.m., and midday peak hour periods at both study locations. The midday peak hour coincides with the end of school, with Ripona Elementary School in the vicinity. Traffic count data is included in the Appendix.

Intersection Levels of Service. Table 2 summarizes current Levels of Service at the study area intersections during each of the three study periods. The Fulton Avenue / Arc Way intersection operates at LOS F in the a.m. peak hour, LOS E in the p.m. peak hour and LOS C in the midday peak period. The W. Milgeo Avenue / Arc Way intersection operates at LOS B during each peak period. Neither intersection meets the peak hour signal warrant.

Non-Automobile Transportation

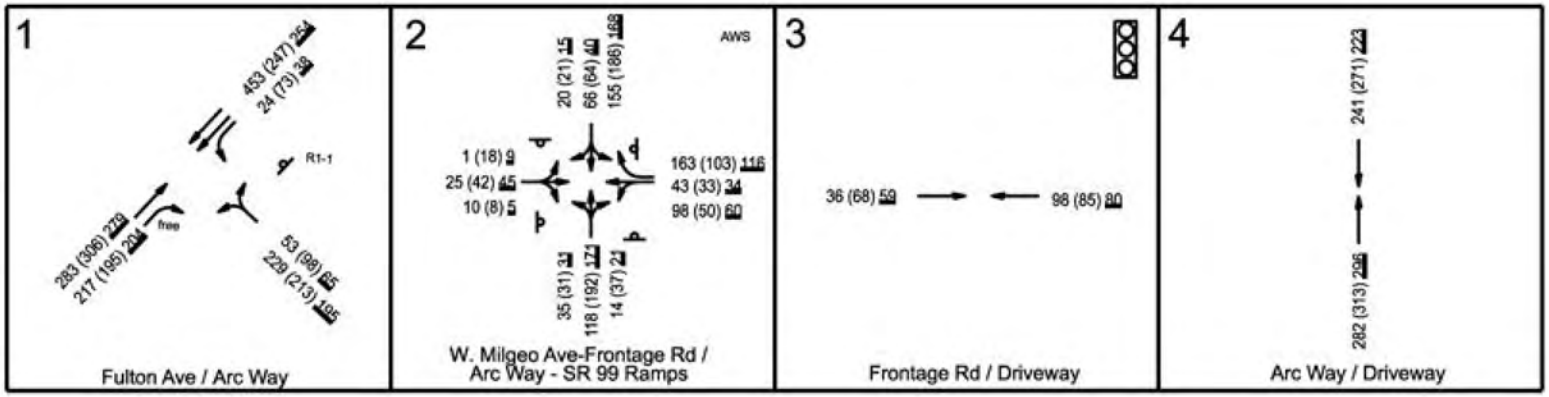
Public Transit. Various limited bus services are provided within Ripon. These include the Blossom Express, operated entirely within Ripon, the San Joaquin Regional Transit District (SJRTD), and the RTD Van GO!.

The Blossom Express operates Tuesdays and Thursdays in a fixed route service beginning at the Ripon Library and proceeding in a clockwise loop around the City and to Kaiser Hospital, Vintage Faire Mall and the Target Center in Modesto. The closest stops are W. Colony Road at Fulton Avenue and E. Milgeo Avenue at John Roos Avenue. Blossom Express operates on Tuesdays and Thursdays with approximately hourly service beginning at the Ripon Library at 9:25 a.m. and the last run beginning at 1:15 p.m.

SJRTD operates a single route in Ripon, the #91 Hopper route. This route operates Monday through Friday with five northbound runs and four southbound runs. The northbound route begins its route at Colony Goodwin at 5:55 a.m. and passes the Fulton Avenue / Arc Way intersection into Ripon before heading north towards Manteca; the last bus departs at 7:40 p.m. The first southbound route departs Stockton at 7:30 a.m. while the last bus departs at 6:35 p.m.

The Van Go! Program is a ride-share service available through a smartphone or computer. The services operates on a first-come, first-served basis due to the limit number of vehicles. The program offers trips throughout the County.

Bicycle and Pedestrian Facilities. Class 2 bike lanes are present throughout the City of Ripon. In the immediate vicinity bike lanes are present along W. Milgeo Avenue east of Acacia Avenue and along Acacia Avenue north of W. Milgeo Avenue. In addition, a Class 1 bike path (multi-use path) is present along Fulton Avenue from Arc Way to River Road.



EXISTING VOLUMES
AM / PM PEAK HOURS

FIGURE 3

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TABLE 2
EXISTING PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	AM Peak Hour		PM Peak Hour		Midday Peak Hour		Peak Hour Warrant Met?
		LOS	Average Delay (secs)	LOS	Average Delay (secs)	LOS	Average Delay (secs)	
1. Fulton Ave / Arc Way								
NB	NB Stop	**F**	**125.1**	**E**	**40.2**	C	22.0	No
WB Left		A	8.3	A	8.2	A	8.0	
2. W. Milgeo Ave / Arc Way	AWS	B	13.6	B	13.2	B	11.5	No

AWS – all way stop

Bold indicates exceeds City LOS threshold

EXISTING PLUS PROJECT CONDITIONS

The development of this project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Project Description

Land Use. The proposed project consists of a Convenience Store (C-store) / gas station and includes 12 fueling positions (VFP) and a 4,000 square foot convenience store. A 6,000 square foot retail pad is also proposed adjacent to the C-store.

Access. Access to the site is proposed via two driveways, one along Arc Way and one along Frontage Road. The Arc Way driveway provides right-in, right-out access only while the Frontage Road driveway provides full access.

Trip Generation. Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends. Specific trip generation rates published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition.* were reviewed, and the number of vehicle trips that are expected to be generated by development of the project was estimated.

Trip generation rates that are applicable to gasoline stations / C stores, Land Use (LU) 945, *Gas Station with Convenience Store* were reviewed considering both vehicle fueling positions (VFP) and thousand square feet (KSF) as a subcategory. The trip generation rates for this land use uses a multi-variable equation, thus the independent variable was the one not identified as the subcategory. LU 822, Strip Retail, was used for the adjacent retail use. Table 3 presents the projected trip generation for the project, including internal and pass-by trips. The project is projected to generate 207 a.m. peak hour trips, 261 p.m. peak hour trips and 216 midday peak hour trips.

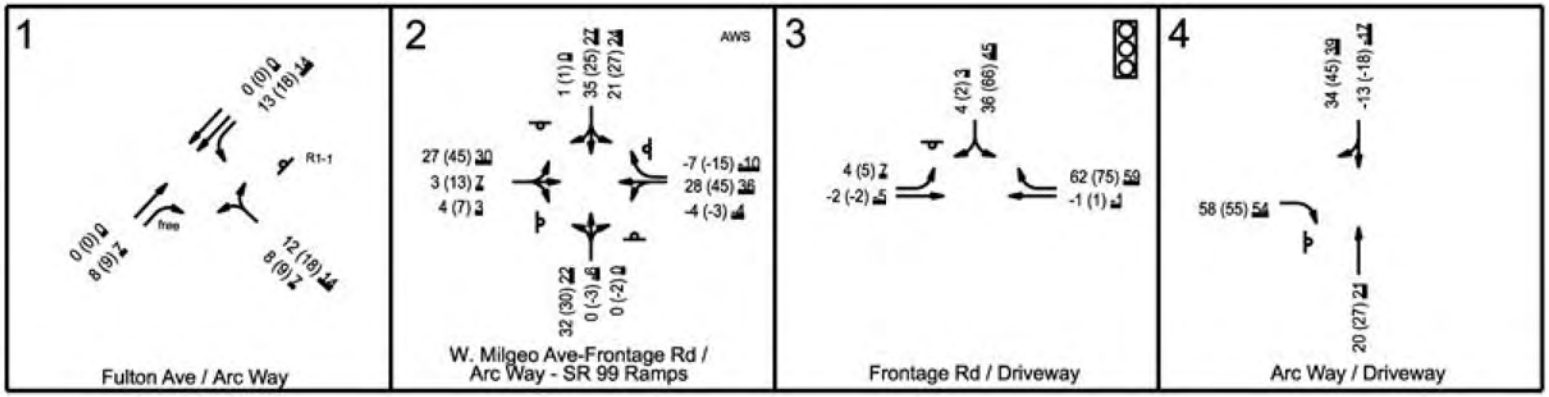
Internal Trips. The interaction between on-site uses would result in "internal" trips that would not reach the local street system and would reduce the gross trip generation estimate. This analysis assumes that 5% of the trips would be made by motorists visiting both uses. The project is projected to generate a total of 10 internal a.m. peak hour trips, 13 internal p.m. peak hour trips and 11 internal midday peak hour trips.

Pass-by Trips / Diverted Linked Trips. A share of the trips associated with retail uses are typically

drawn from the stream of traffic already near the site by customers who stop on their way as part of another trip. The ITE Trip Generation handbook contains the results of pass-by trip studies prepared for various uses. The rates identified for each land use were used. The project is projected to generate a total of 3,508 daily trips, 115 a.m. pass-by trips, 130 p.m. pass-by trips and 111 midday pass-by trips.

After reduction of the internal and pass-by trips, the project is expected to generate 1,481 new daily trips, 82 new a.m. trips, 117 new trips in the p.m. and 94 new trips in the midday peak hour.

Trip Distribution & Assignment. To evaluate the traffic related effects of the Project, trips that would be generated by the Project were distributed onto the roadway network. Trip distribution simulates the geographical pattern of travel, matching trips generated by one type of land use (e.g. residential) with trips generated by other types of land uses (e.g., education, employment, and shopping). The traffic distribution is shown in Table 4 while the generated traffic volumes are shown in Figure 4.



PROJECT VOLUMES
AM / PM PEAK HOURS

FIGURE 4

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TABLE 3
TRIP GENERATION

Land Use	Unit Quantity	Size	Trips Per Unit									
			Daily	AM Peak Hour			PM Peak Hour			Midday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
Strip Retail (LU 822)	KSF	6.00	54.45	60%	40%	2.36	50%	50%	6.59	6.1%†	6.1%†	
Gas Station with Convenience Store (LU 945)	VFP	12	265.12	50%	50%	16.06	50%	50%	18.42	6.1%†	5.8%†	
Strip Retail (LU 822)			327	8	6	14	20	20	40	13	13	26
Gas Station with Convenience Store (LU 945)			3181	96	96	193	111	111	221	97	92	189
Sub-Total Trips			**3508**	105	102	**207**	130	130	**261**	110	105	**215**
Internal Trips												
Strip Retail *(5% AM, PM)*			(16)	(0)	(0)	(1)	(1)	(1)	(2)	(1)	(1)	(1)
Gas Station with Convenience Store (5% *AM, PM)*			(159)	(5)	(5)	(10)	(6)	(6)	(11)	(5)	(5)	(9)
Sub-Total Trips			**(175)**	(5)	(5)	**(10)**	(7)	(7)	**(13)**	(6)	(5)	**(11)**
Pass-By Trips												
Strip Retail *(22% Daily, 10% AM, 34% PM)*			(68)	(1)	(1)	(1)	(6)	(8)	(13)	(3)	(3)	(6)
Gas Station *(59% Daily, 62% AM, 56% PM, 59%)◊*			(1783)	(57)	(57)	(114)	(59)	(59)	(118)	(54)	(52)	(106)
Total Pass-By Trips			**(1851)**	(58)	(57)	**(115)**	(65)	(65)	**(130)**	(57)	(54)	**(111)**
Net New Trips			***(1481)***	***42***	***40***	***82***	***59***	***59***	***117***	***48***	***46***	***94***

KSF – thousand square feet
Numbers may not match due to rounding
◊ ITE Trip Generation Handbook, 3rd Ed
†ITE Trip Generation Manual, 11th Edition Hourly Distribution of Entering and Existing Vehicle Trips

TABLE 4
TRIP DISTRIBUTION

Route	% of Total Trips					
	AM		PM		Midday	
	C-Store	Retail	C-Store	Retail	C-Store	Retail
To / From Fulton Ave West	20%	15%	15%	15%	15%	15%
To / From Fulton Ave East	30%	30%	30%	30%	30%	30%
To / From Frontage Road	5%	5%	5%	5%	5%	5%
To / From SR 99 NB Ramps	5%	5%	5%	5%	5%	5%
To / From W. Milgeo Ave	40%	45%	45%	45%	45%	45%
Total	100%	100%	100%	100%	100%	100%

Existing Plus Project VMT / Level of Service Impacts

Vehicle Miles Traveled

SB 743 requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis. The CEQA Guidelines state that lead agencies, such as the City of Ripon, may establish "thresholds of significance" to assist with the determination of significant impacts of a project. The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less than significant transportation impact. The CEQA Guidelines do not provide any specific criteria on how to determine what level of project VMT would be considered a significant impact.

The extent to which VMT analysis is applicable to this project has been considered from several perspectives and is discussed in the materials which follow:

Vehicle Types. OPR guidance notes that CEQA VMT analysis is intended to focus on passenger vehicles.

Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.

OPR guidance allows Heavy-duty truck VMT to be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT).

Methods and Significance Criteria. The OPR *Technical Advisory* provides general direction regarding the methods to be employed and significance criteria to evaluate VMT impacts, absent policies adopted by local agencies. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- ***Screening Criteria***: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study.
- ***Significance Thresholds***: Significance thresholds define what constitutes an acceptable level of VMT effect and what could be considered a significant level of VMT effect requiring mitigation.
- ***Analysis Methodology***: These are the potential procedures and tools for producing VMT forecasts to use in the VMT impact assessment.

- ***Mitigation***: Projects that are found to have a significant VMT impact based on the adopted significance thresholds are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening Criteria. Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Under OPR guidance projects meeting at least one of the criteria below can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

- ***Small Projects***: Defined as a project that generates 110 or fewer average daily vehicle trips.

- ***Affordable Housing***: Defined as a project consisting of deed-restricted 100% affordable housing.

- ***Local Serving Retail***: Defined as retail uses of 50,000 square feet or less can be presumed to have a less than significant impact. Increasing retail opportunities closer to homes and workplaces may decrease VMT by substituting shorter trips for longer ones. Projects that fit this criterion for an individual retail site are used to distinguish local serving retail from more regional type businesses that draw customers from greater distances.

- ***Proximity to High Quality Transit***: The directive notes that employment and residential development located within ½ mile of a high-quality transit corridor offering 15-minute headways can be presumed to have a less than significant impact. A high-quality transit stop is defined as a site containing an existing rail transit station or the intersection of at least two bus routes with a frequency of service of at least 15 minutes during the morning and evening commute periods. The City maintains a map showing the parcels that fit this criterion.

Screen line Evaluation. The extent to which the VMT impacts of the project can be presumed to be less than significant has been determined based on review of the OPR directive's screening criteria and general guidance.

Each of the OPR criteria was reviewed in relation to the project.

Small Project. In an unlikely worst case scenario the regular operation of the facility would generate about 1481 new midweek daily trips. This volume indicates the project would not be considered a small project.

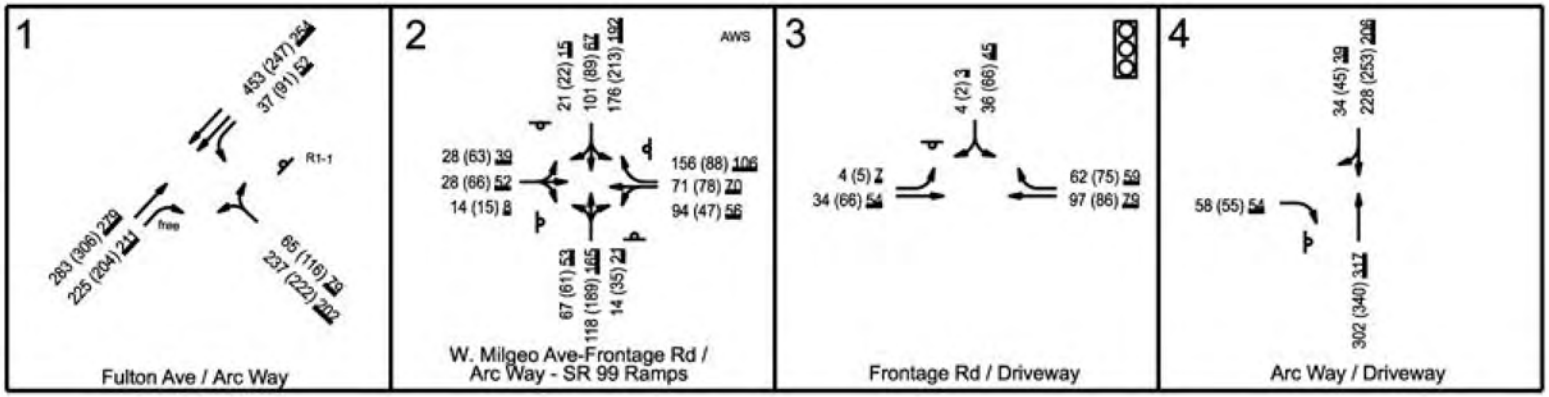
Affordable Housing. This project does not contain affordable housing; therefore, this criterion does not apply.

Local Serving Retail. The site includes a 4,000 square foot convenience store and 6,000 square feet of retail space. For a retail use to be presumed to be less than significant the site needs to be less than 50,000 square feet; the gross square footage of the site is 10,000 square feet; therefore, the project's VMT impacts could be presumed to be less than significant.

Proximity to High Quality Transit. OPR notes that employment within ½ mile of a high-quality transit corridor offering 15-minute or less headways can be presumed to have a less than significant impact. There is limited transit service in Ripon, and the site does not meet this criterion for proximity to high quality transit.

Intersection Levels of Service

Figure 5 presents the Existing plus Project traffic volumes at the two study intersections and the project driveways. Existing plus Project a.m., p.m. and midday peak hour Levels of Service were calculated at the four locations. Tables 5A and 5B present the LOS results which show that the level of service at the Fulton Avenue / Arc Way intersection will continue to operate below City LOS thresholds, at LOS F in both the a.m. and p.m. peak hour. The intersection will continue to operate within the City threshold during the midday peak hour. The W. Milgeo Avenue / Arc Way intersection will continue to operate within the City threshold during each peak hour as will the project driveways. None of the intersections will meet the peak hour signal warrant.



EXISTING PLUS PROJECT VOLUMES
AM / PM PEAK HOURS

FIGURE 5

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TABLE 5A
EXISTING PLUS PROJECT PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	AM Peak Hour				PM Peak Hour				Peak Hour Warrant Met?
		Existing		Existing plus Project		Existing		Existing plus Project		
		LOS	Average Delay (secs)	LOS	Average Delay (secs)	LOS	Average Delay (secs)	LOS	Average Delay (secs)	
1. Fulton Ave / Arc Way	NB Stop									
NB		**F**	**125.1**	**F**	**178.5**	**E**	**40.2**	**F**	**60.0**	No
WB Left		A	8.3	A	8.3	A	8.2	A	8.3	
2. W. Milgeo Ave / Arc Way	AWS	B	13.6	C	24.7	B	13.2	C	22.9	No
3. Frontage Road / Project D/W	SB Stop									
SB		---	---	A	9.7	---	---	B	10.2	No
EB Left				A	7.6			A	7.6	
4. Arc Way / Project D/W	EB Stop									
EB Right		---	---	B	10.1	---	---	B	10.3	No

AWS – all way stop

Bold indicates exceeds City LOS threshold

TABLE 5B
EXISTING PLUS PROJECT PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	Midday Peak Hour				Peak Hour Warrant Met
		Existing		Existing plus Project		
		LOS	Average Delay (secs)	LOS	Average Delay (secs)	
1. Fulton Ave / Arc Way NB WB Left	NB Stop	C A	22.0 8.0	D A	26.0 8.1	No
2. W. Milgeo Ave / Arc Way	AWS	B	11.5	C	15.1	No
3. Frontage Road / Project D/W SB EB Left	SB Stop	--- ---	--- ---	A A	9.8 7.5	No
4. Arc Way / Project D/W EB Right	EB Stop	---	---	A	8.8	No
AWS – all way stop						

PROJECT ACCESS

Two access locations will be provided for the project. One access will be along Arc Way and provide right-in, right-out access only while the second driveway will be along Frontage Road and provide full access.

Sight Distance.

A sight distance analysis was completed at both project access locations. Available sight distance was evaluated using the standards documented in the Caltrans *Highway Design Manual* (HDM). Based on the location of the driveways "**Minimum Stopping Sight** Distance" (SSD) criterion was used to analyze the line of sight. While not required for urban driveways Corner Sight Distance (CSD) was also reviewed. These criteria are documented in Tables 201.1 and 405.1A of the HDM. The SSD is the distance required for an approaching motorist to identify a hazard and come to a stop while the Corner Sight Distance (CSD) is the distance needed for a motorist to see approaching vehicles and complete a turning maneuver before that vehicle arrives.

Frontage Road Driveway. The posted speed limit along Frontage Road is 35 mph at the project access intersection. The Caltrans Highway Design Manual (HDM) Table 201.1 notes that the SSD for the posted speed limit of 35 mph is 250 feet. Figure 6 illustrates the sight lines for a motorist exiting the driveway looking north along Frontage Road as well as the line of sight of a driver along Frontage Road seeing a vehicle exiting the driveway. The site is located on the east side of the Frontage Road, and a curve to the northeast begins at about the north property line. Because of the curve, the SSD sight line cuts across what appears to be a future sidewalk area of the adjacent property. Sight distance looking south towards the Arc Way intersection is across the

SIGHT DISTANCE

FIGURE 6

FLECKER ASSOCIATES

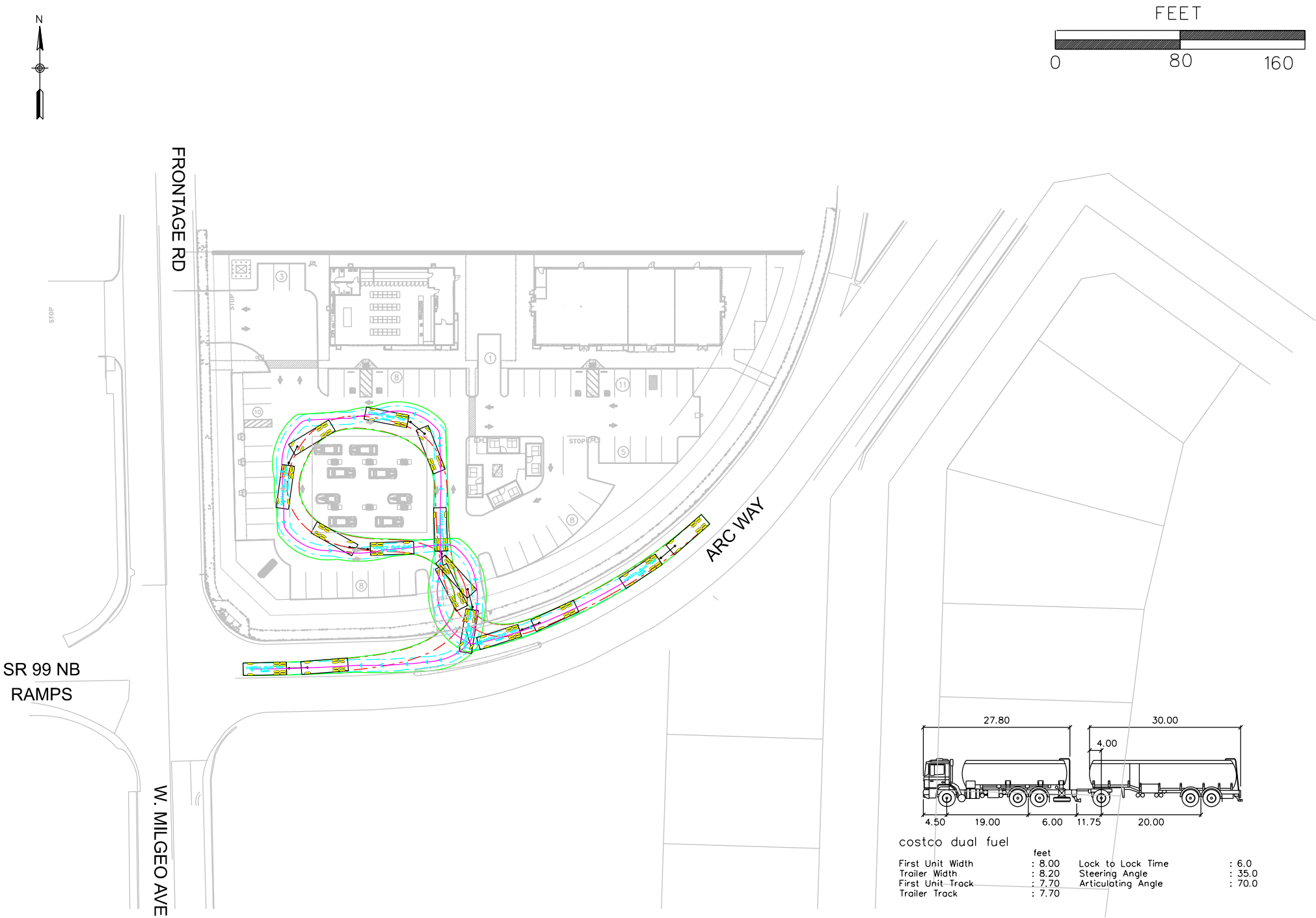
0900-01

property's frontage. As the W. Milgeo Avenue / Arc Way intersection is all-way stop controlled the stopping sight distance is generally from the departure side of the intersection. The sight distance to the intersection is about 178 feet and corresponds to a speed of about 27 mph.

Arc Way Driveway. The posted speed along Arc Way is 25 mph at the project access intersection. The SSD for the posted speed limit of 25 mph is 150 feet. Figure 6 also illustrates the sight lines for a motorist exiting the driveway looking north along Arc Way as well as the line of sight of a driver along Arc Way seeing a vehicle exiting the driveway. The sight line from the driveway is across the property's frontage. To ensure adequate visibility is maintained, all landscaping within the sight line should be less than two feet with any trees having a canopy of no less than eight feet.

Truck Circulation.

Three design vehicles were reviewed regarding access to and within the site. These included a dual tanker fuel truck for the gas station and WB-40 and WB-50 trucks for the C-store. An *AutoTurn* assessment was completed for these vehicles. Figures 7-9 illustrate fuel truck entry from Arc Way and Frontage Road. A fuel truck entering from Arc Way can depart from either driveway while a truck entering from Frontage Road would exist via Arc Way. Figures 10 and 11 illustrate a WB-40 trailer entering from both Arc Way and Frontage Road and departing via the other driveway. Both fuel truck and WB-40 trailer can maneuver through the site. A WB-50 trailer was also reviewed and the turning templates are shown in Figures 12 and 13. In both directions the truck will overtop the curb at both driveways. To enable this larger trailer, the driveways would need to be widened so the curbs are not overtopped. Deliveries for both fuel trucks and WB-40 trailers should be limited to off-hours as the drive aisles could be blocked while trucks are loading / unloading.

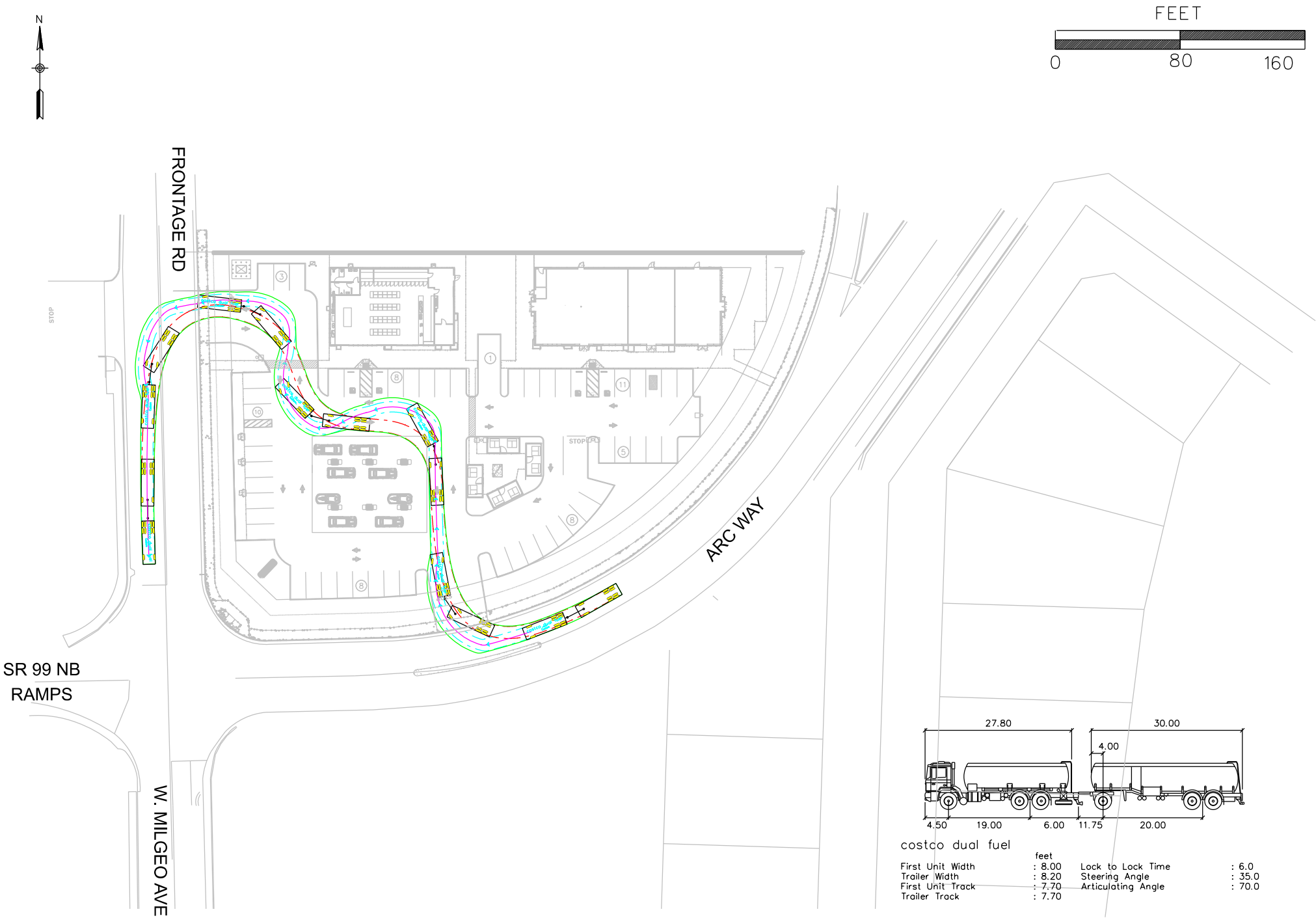


FUEL TRUCK - ARC WAY IN/OUT

FIGURE 7

FLECKER ASSOCIATES

0900-01

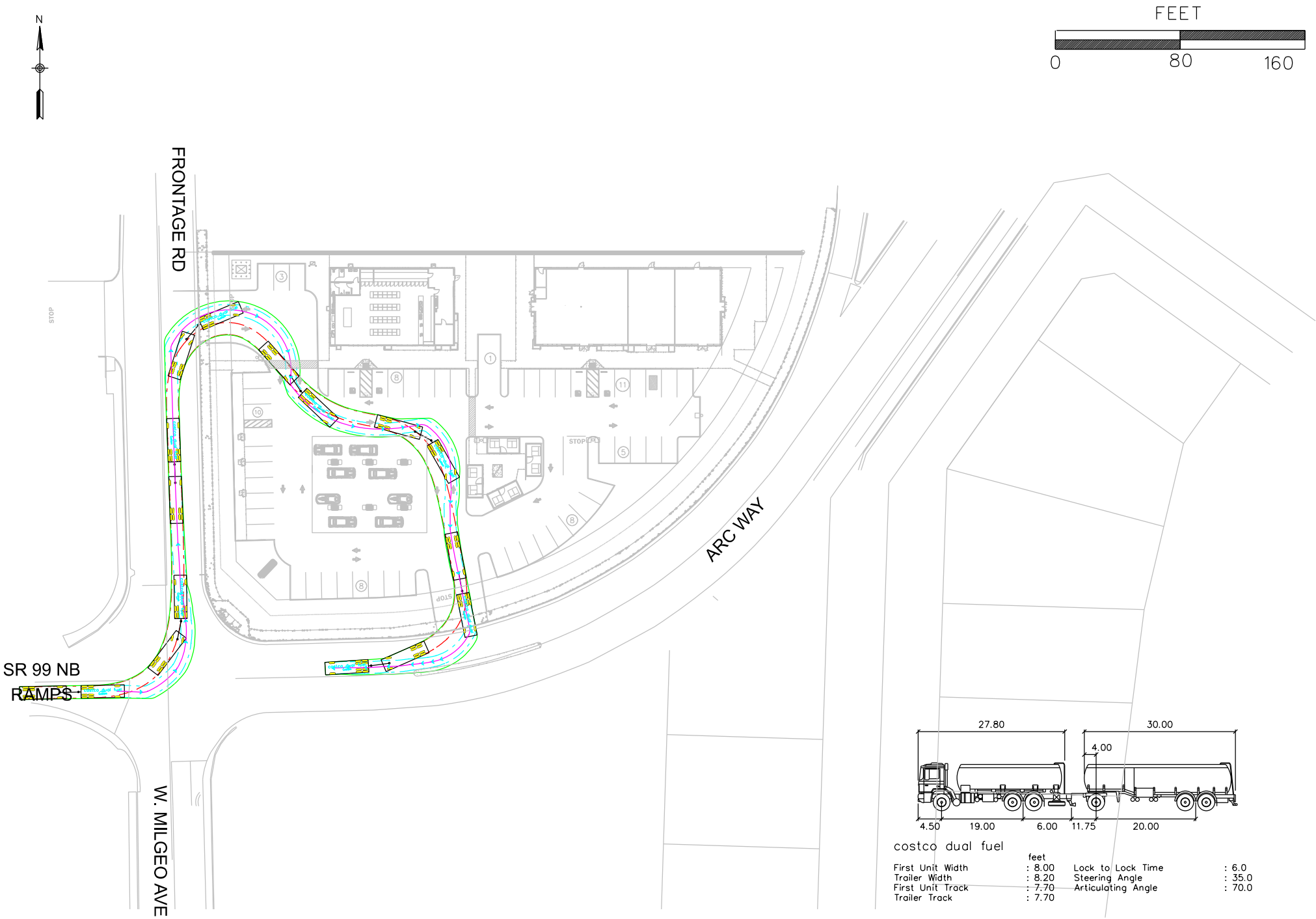


FUEL TRUCK - ARC WAY IN / FRONTAGE ROAD OUT

FIGURE 8

FLECKER ASSOCIATES

0900-01

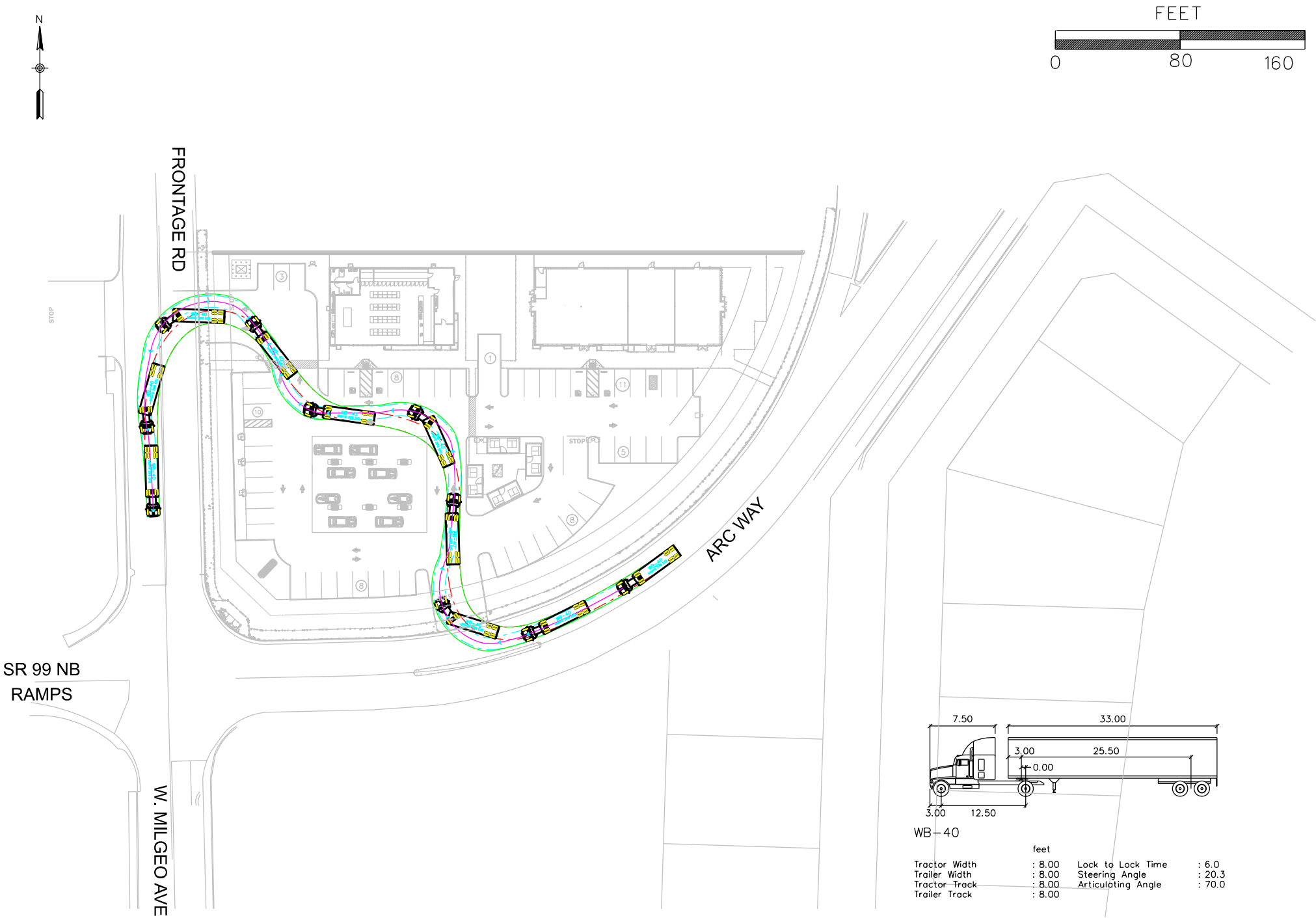


FUEL TRUCK - FRONTAGE ROAD IN / ARC WAY OUT

FIGURE 8

FLECKER ASSOCIATES

0900-01

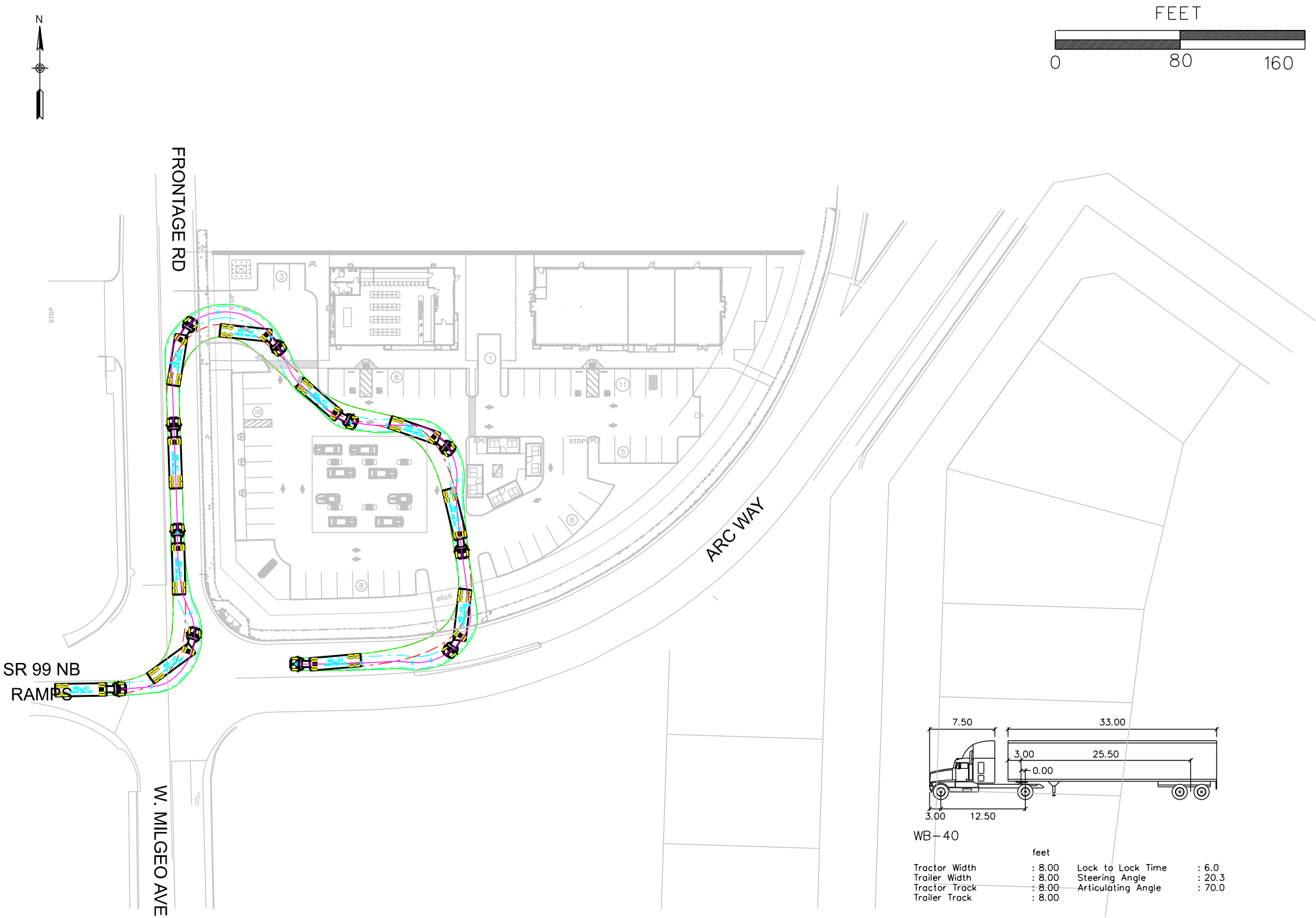


FLECKER ASSOCIATES

0900-01

WB-40 TRAILER - ARC WAY / FRONTAGE ROAD OUT

FIGURE 10

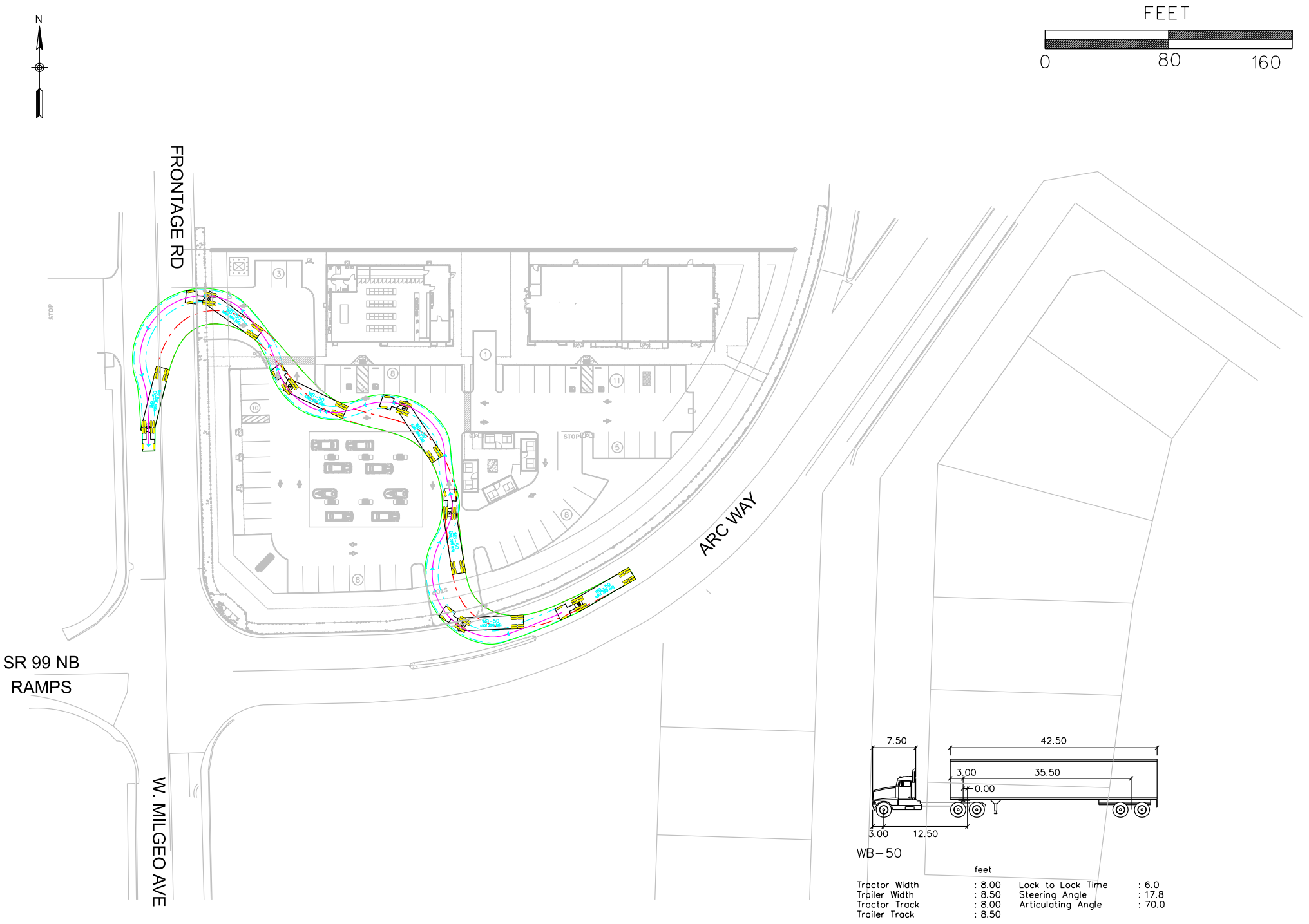


FLECKER ASSOCIATES

0900-01

WB-40 TRAILER - FRONTAGE ROAD IN / ARC WAY OUT

FIGURE 11

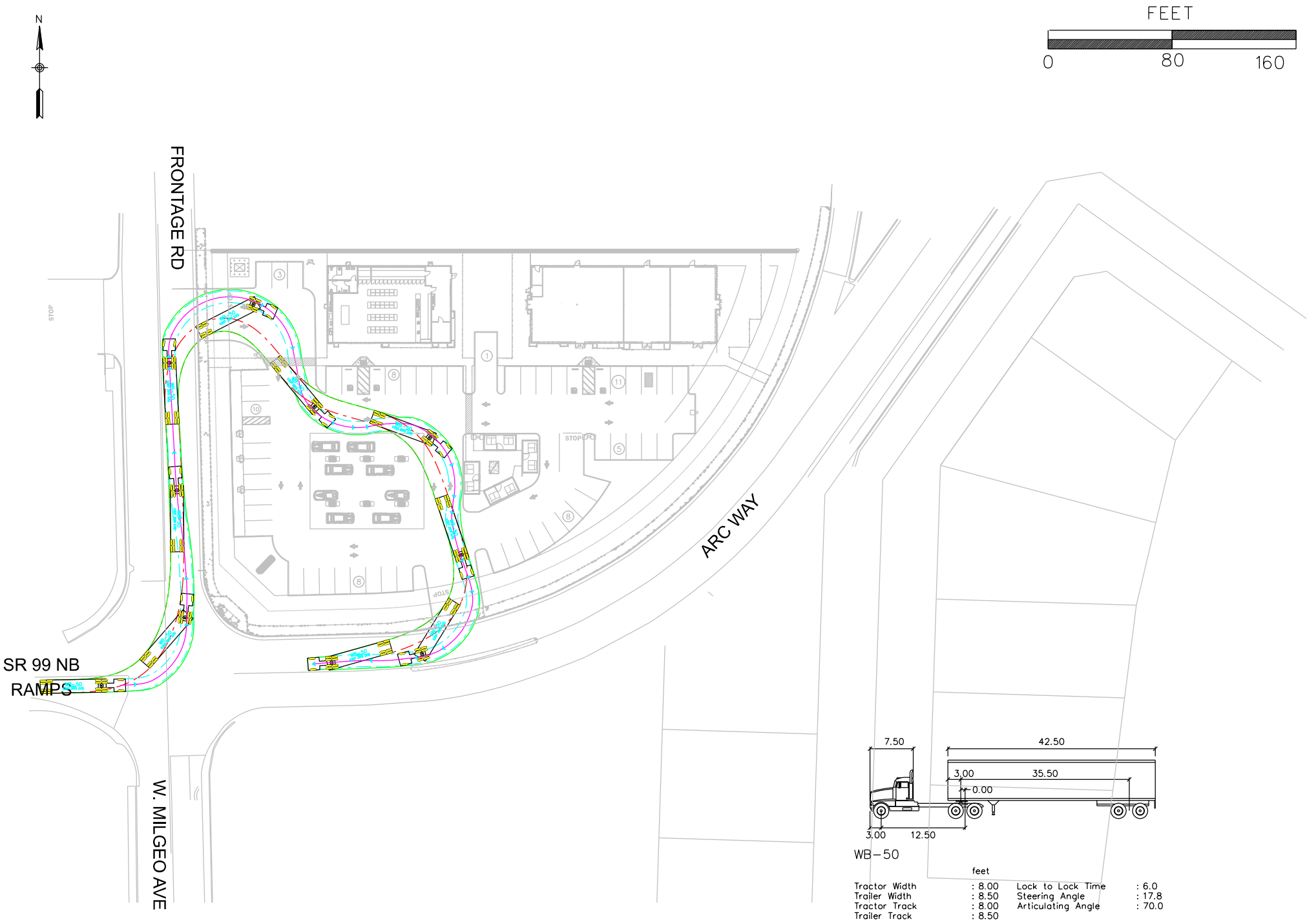


WB-50 TRAILER - ARC WAY IN / FRONTAGE ROAD OUT

FIGURE 12

FLECKER ASSOCIATES

0900-01



WB-50 TRAILER - FRONTAGE ROAD IN / ARC WAY OUT

FLECKER ASSOCIATES

0900-01

FIGURE 13

FINDINGS / RECOMMENDATIONS/ IMPROVEMENTS

The preceding analysis has identified project impacts that may occur without identifying any recommendations or improvements. The text that follows identifies a strategy for recommendations to the 'No Project' conditions or improvements to the 'Plus Project' conditions.

Existing Conditions

Recommendations. The Fulton Avenue / Arc Way intersection currently operates at LOS F in the a.m. peak hour and LOS E in the p.m. peak hour. The intersection does not meet the peak hour signal warrant. Installation of all-way stop control will improve the intersection to LOS D in the a.m. peak hour and LOS C in the p.m. peak hour. The longest projected queue along the eastbound Fulton Avenue approach is about 228 feet during the a.m. peak hour. The distance from the projected stop line to the free right turn ramp to Arc Way is about 200 feet; thus, an all-way stop could queue vehicles beyond the ramp. The roadway width between the ramp and the Arc Way intersection is about 24 feet and is consistent with the two-lane departure on the east side of the intersection. The addition of lane striping to provide two approach lanes will further improve the intersection operation to LOS C and will also reduce the queue on this approach to about 60 feet.

Significant Transportation Effects for Existing plus Project Conditions

The Fulton Avenue / Arc Way intersection will operate at LOS F conditions in both a.m. and p.m. peak hours with the project.

The following recommendations are made:

- The project should pay their fair share traffic impact fees in Ripon.

- The addition of an all-way stop condition will improve the operation of the intersection to LOS D and C in the a.m. and p.m. periods, respectively. The eastbound queue along Fulton Avenue will be worsened; however, with the lane striping added between Arc Way and the ramp to Arc Way, the queue will shorten to about 63 feet.

- Truck traffic to the site should be limited to fuel trucks and WB-40 trailers with deliveries limited to off-hours to minimize blocking of driveways and drive aisles.

- Landscaping within the sight triangles should be limited to low-lying landscaping with any trees having canopies no less than eight feet. In addition, parking should not be allowed within the sight triangles. No parking signs currently exist along Arc Way. No parking sign

should be implemented along the project frontage along Frontage Road from the Arc Way intersection to the project driveway.

REFERENCES

1. City of Ripon. September 2006. Ripon *General Plan.*
2. California Department of Transportation. *California Manual on Uniform Traffic Control Devices for Streets and Highways* – 2014 Edition, 2021 Addendum. Sacramento, CA
3. Caltrans *Highway Design Manual*, 2023
4. Transportation Research Board. *Highway Capacity Manual 7th Edition*. Washington, D.C.
5. E-mail correspondence, Ken Zuidervaart, City of Ripon, May 2024

APPENDIX

Intersection	
Int Delay, s/veh	29.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	24	453	229	53
Future Vol, veh/h	283	0	24	453	229	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	68	67	59	77	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	36	768	297	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	422	0	878	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1135	-	303	630
Stage 1	-	0	-	-	660	-
Stage 2	-	0	-	-	606	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1135	-	~ 293	630
Mov Cap-2 Maneuver	-	-	-	-	~ 293	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.37	125.13
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	327	-	1135	-
HCM Lane V/C Ratio	1.129	-	0.032	-
HCM Control Delay (s/veh)	125.1	-	8.3	-
HCM Lane LOS	F	-	A	-
HCM 95th %tile Q(veh)	14.7	-	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	25	10	98	43	163	35	118	14	155	66	20
Future Vol, veh/h	1	25	10	98	43	163	35	118	14	155	66	20
Peak Hour Factor	0.62	0.79	0.71	0.97	0.76	0.70	0.25	0.63	0.63	0.84	0.77	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	32	14	101	57	233	140	187	22	185	86	26
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	10.2	12	15.4	14.1
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	21%	3%	70%	0%	64%
Vol Thru, %	71%	69%	30%	0%	27%
Vol Right, %	8%	28%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	36	141	163	241
LT Vol	35	1	98	0	155
Through Vol	118	25	43	0	66
RT Vol	14	10	0	163	20
Lane Flow Rate	350	47	158	233	296
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.547	0.085	0.297	0.37	0.477
Departure Headway (Hd)	5.639	6.475	6.781	5.715	5.808
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	636	549	528	626	618
Service Time	3.697	4.564	4.539	3.472	3.867
HCM Lane V/C Ratio	0.55	0.086	0.299	0.372	0.479
HCM Control Delay, s/veh	15.4	10.2	12.4	11.8	14.1
HCM Lane LOS	C	B	B	B	B
HCM 95th-tile Q	3.3	0.3	1.2	1.7	2.6

Intersection	
Int Delay, s/veh	13.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	0	73	247	213	98
Future Vol, veh/h	306	0	73	247	213	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	76	76	78	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	348	0	96	317	232	111

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	348	0	698	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1210	-	390	695
Stage 1	-	0	-	-	714	-
Stage 2	-	0	-	-	685	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1210	-	359	695
Mov Cap-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.92	40.18
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	426	-	1210	-
HCM Lane V/C Ratio	0.805	-	0.079	-
HCM Control Delay (s/veh)	40.2	-	8.2	-
HCM Lane LOS	E	-	A	-
HCM 95th %tile Q(veh)	7.3	-	0.3	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	42	8	50	33	103	31	192	37	186	64	21
Future Vol, veh/h	18	42	8	50	33	103	31	192	37	186	64	21
Peak Hour Factor	0.56	0.62	0.50	0.69	0.75	0.95	0.60	0.94	0.66	0.86	0.64	0.58
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	68	16	72	44	108	52	204	56	216	100	36
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	11	10.8	13.5	15.1
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	12%	26%	60%	0%	69%
Vol Thru, %	74%	62%	40%	0%	24%
Vol Right, %	14%	12%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	68	83	103	271
LT Vol	31	18	50	0	186
Through Vol	192	42	33	0	64
RT Vol	37	8	0	103	21
Lane Flow Rate	312	116	116	108	352
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.476	0.203	0.222	0.176	0.545
Departure Headway (Hd)	5.487	6.321	6.876	5.856	5.563
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	655	564	521	609	645
Service Time	3.544	4.401	4.645	3.623	3.618
HCM Lane V/C Ratio	0.476	0.206	0.223	0.177	0.546
HCM Control Delay, s/veh	13.5	11	11.6	9.9	15.1
HCM Lane LOS	B	B	B	A	C
HCM 95th-tile Q	2.6	0.8	0.8	0.6	3.3

Intersection	
Int Delay, s/veh	6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	279	0	38	254	195	65
Future Vol, veh/h	279	0	38	254	195	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	76	76	78	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	0	50	326	212	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	317	0	580	317
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1241	-	461	723
Stage 1	-	0	-	-	737	-
Stage 2	-	0	-	-	758	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1241	-	442	723
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.07	22.01
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	491	-	1241	-
HCM Lane V/C Ratio	0.582	-	0.04	-
HCM Control Delay (s/veh)	22	-	8	-
HCM Lane LOS	C	-	A	-
HCM 95th %tile Q(veh)	3.7	-	0.1	-

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	45	5	60	34	116	31	171	21	168	40	15
Future Vol, veh/h	9	45	5	60	34	116	31	171	21	168	40	15
Peak Hour Factor	0.56	0.62	0.50	0.69	0.75	0.95	0.60	0.94	0.66	0.86	0.64	0.58
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	73	10	87	45	122	52	182	32	195	63	26
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	10.2	10.4	11.9	12.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	15%	64%	0%	75%
Vol Thru, %	77%	76%	36%	0%	18%
Vol Right, %	9%	8%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	223	59	94	116	223
LT Vol	31	9	60	0	168
Through Vol	171	45	34	0	40
RT Vol	21	5	0	116	15
Lane Flow Rate	265	99	132	122	284
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.396	0.164	0.24	0.186	0.431
Departure Headway (Hd)	5.372	5.994	6.521	5.485	5.474
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	669	597	550	653	658
Service Time	3.412	4.046	4.263	3.227	3.513
HCM Lane V/C Ratio	0.396	0.166	0.24	0.187	0.432
HCM Control Delay, s/veh	11.9	10.2	11.3	9.5	12.6
HCM Lane LOS	B	B	B	A	B
HCM 95th-tile Q	1.9	0.6	0.9	0.7	2.2

Intersection	
Int Delay, s/veh	43.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	37	453	237	65
Future Vol, veh/h	283	0	37	453	237	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	68	67	59	77	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	55	768	308	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	422	0	917	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1135	-	~ 286	630
Stage 1	-	0	-	-	660	-
Stage 2	-	0	-	-	579	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1135	-	~ 272	630
Mov Cap-2 Maneuver	-	-	-	-	~ 272	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.56	178.52
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	312	-	1135	-
HCM Lane V/C Ratio	1.269	-	0.049	-
HCM Control Delay (s/veh)	178.5	-	8.3	-
HCM Lane LOS	F	-	A	-
HCM 95th %tile Q(veh)	18.5	-	0.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	24.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	28	14	94	71	156	67	118	14	176	101	21
Future Vol, veh/h	28	28	14	94	71	156	67	118	14	176	101	21
Peak Hour Factor	0.62	0.79	0.71	0.97	0.76	0.70	0.25	0.63	0.63	0.84	0.77	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	35	20	97	93	223	268	187	22	210	131	27
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	13.3	15.1	36.6	23.3
HCM LOS	B	C	E	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	34%	40%	57%	0%	59%
Vol Thru, %	59%	40%	43%	0%	34%
Vol Right, %	7%	20%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	70	165	156	298
LT Vol	67	28	94	0	176
Through Vol	118	28	71	0	101
RT Vol	14	14	0	156	21
Lane Flow Rate	478	100	190	223	368
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.855	0.223	0.411	0.419	0.686
Departure Headway (Hd)	6.442	7.995	7.774	6.762	6.719
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	559	451	461	530	537
Service Time	4.512	5.995	5.553	4.539	4.797
HCM Lane V/C Ratio	0.855	0.222	0.412	0.421	0.685
HCM Control Delay, s/veh	36.6	13.3	15.9	14.4	23.3
HCM Lane LOS	E	B	C	B	C
HCM 95th-tile Q	9.2	0.8	2	2.1	5.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	34	97	62	36	4
Future Vol, veh/h	4	34	97	62	36	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	37	105	67	39	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	173	0	-	0	185	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1404	-	-	-	804	909
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1404	-	-	-	802	909
Mov Cap-2 Maneuver	-	-	-	-	802	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.8	0	9.69
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	189	-	-	-	811
HCM Lane V/C Ratio	0.003	-	-	-	0.054
HCM Control Delay (s/veh)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	58	0	302	228	34
Future Vol, veh/h	0	58	0	302	228	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	63	0	328	248	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	266	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	772	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	772	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.08	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	772	-	-
HCM Lane V/C Ratio	-	0.082	-	-
HCM Control Delay (s/veh)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	20.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	0	91	247	222	116
Future Vol, veh/h	306	0	91	247	222	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	76	76	78	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	348	0	120	317	241	132

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	348	0	746	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	398	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1210	-	365	695
Stage 1	-	0	-	-	714	-
Stage 2	-	0	-	-	648	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1210	-	329	695
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	584	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.28	59.96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	404	-	1210	-
HCM Lane V/C Ratio	0.924	-	0.099	-
HCM Control Delay (s/veh)	60	-	8.3	-
HCM Lane LOS	F	-	A	-
HCM 95th %tile Q(veh)	10.1	-	0.3	-

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	55	15	47	78	88	61	189	35	213	89	22
Future Vol, veh/h	63	55	15	47	78	88	61	189	35	213	89	22
Peak Hour Factor	0.56	0.62	0.50	0.69	0.75	0.95	0.60	0.94	0.66	0.86	0.64	0.58
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	113	89	30	68	104	93	102	201	53	248	139	38
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	17.5	14.2	22.8	31.4
HCM LOS	C	B	C	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	21%	47%	38%	0%	66%
Vol Thru, %	66%	41%	62%	0%	27%
Vol Right, %	12%	11%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	133	125	88	324
LT Vol	61	63	47	0	213
Through Vol	189	55	78	0	89
RT Vol	35	15	0	88	22
Lane Flow Rate	356	231	172	93	425
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.674	0.483	0.384	0.183	0.798
Departure Headway (Hd)	6.824	7.524	8.022	7.106	6.766
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	530	479	448	504	535
Service Time	4.845	5.588	5.783	4.867	4.784
HCM Lane V/C Ratio	0.672	0.482	0.384	0.185	0.794
HCM Control Delay, s/veh	22.8	17.5	15.7	11.5	31.4
HCM Lane LOS	C	C	C	B	D
HCM 95th-tile Q	5	2.6	1.8	0.7	7.6

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	66	86	75	66	2
Future Vol, veh/h	5	66	86	75	66	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	72	93	82	72	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	175	0	-	0	217	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1401	-	-	-	771	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	941	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1401	-	-	-	768	915
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	941	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.53	0	10.16
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	127	-	-	-	772
HCM Lane V/C Ratio	0.004	-	-	-	0.096
HCM Control Delay (s/veh)	7.6	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	0	340	253	45
Future Vol, veh/h	0	55	0	340	253	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	0	370	275	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	299	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	740	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	740	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.29	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	740	-	-
HCM Lane V/C Ratio	-	0.081	-	-
HCM Control Delay (s/veh)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	279	0	52	254	202	79
Future Vol, veh/h	279	0	52	254	202	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	76	76	78	92	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	0	68	326	220	90

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	317	0	617	317
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	300	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	1241	-	437	723
Stage 1	-	0	-	-	737	-
Stage 2	-	0	-	-	726	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1241	-	413	723
Mov Cap-2 Maneuver	-	-	-	-	413	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.4	25.98
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	472	-	1241	-
HCM Lane V/C Ratio	0.655	-	0.055	-
HCM Control Delay (s/veh)	26	-	8.1	-
HCM Lane LOS	D	-	A	-
HCM 95th %tile Q(veh)	4.6	-	0.2	-

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	52	8	56	70	106	53	165	21	192	67	15
Future Vol, veh/h	39	52	8	56	70	106	53	165	21	192	67	15
Peak Hour Factor	0.56	0.62	0.50	0.69	0.75	0.95	0.60	0.94	0.66	0.86	0.64	0.58
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	84	16	81	93	112	88	176	32	223	105	26
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	12.9	12.4	15.2	18.1
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	39%	44%	0%	70%
Vol Thru, %	69%	53%	56%	0%	24%
Vol Right, %	9%	8%	0%	100%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	99	126	106	274
LT Vol	53	39	56	0	192
Through Vol	165	52	70	0	67
RT Vol	21	8	0	106	15
Lane Flow Rate	296	170	174	112	354
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.502	0.317	0.345	0.192	0.604
Departure Headway (Hd)	6.115	6.741	7.128	6.185	6.141
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	588	532	504	579	591
Service Time	4.159	4.797	4.876	3.933	4.141
HCM Lane V/C Ratio	0.503	0.32	0.345	0.193	0.599
HCM Control Delay, s/veh	15.2	12.9	13.6	10.4	18.1
HCM Lane LOS	C	B	B	B	C
HCM 95th-tile Q	2.8	1.4	1.5	0.7	4

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	54	79	59	45	3
Future Vol, veh/h	7	54	79	59	45	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	59	86	64	49	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	192	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1431	-	-	-	797	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	793	934
Mov Cap-2 Maneuver	-	-	-	-	793	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	949	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.86	0	9.81
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	207	-	-	-	800
HCM Lane V/C Ratio	0.005	-	-	-	0.065
HCM Control Delay (s/veh)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	54	0	317	206	39
Future Vol, veh/h	0	54	0	317	206	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	59	0	345	224	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	245	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	794	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	794	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	794	-	-
HCM Lane V/C Ratio	-	0.074	-	-
HCM Control Delay (s/veh)	-	9.9	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	29.8
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	24	453	229	53
Future Vol, veh/h	283	0	24	453	229	53
Peak Hour Factor	0.67	0.68	0.67	0.59	0.77	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	36	768	297	72
Number of Lanes	1	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	41.3	21	35.9
HCM LOS	E	C	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	81%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%
Vol Right, %	19%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	283	24	227	227
LT Vol	229	0	24	0	0
Through Vol	0	283	0	227	227
RT Vol	53	0	0	0	0
Lane Flow Rate	369	422	36	384	384
Geometry Grp	5	5	5	5	5
Degree of Util (X)	0.805	0.864	0.075	0.752	0.563
Departure Headway (Hd)	7.854	7.361	7.569	7.056	5.277
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	461	494	473	514	683
Service Time	5.598	5.109	5.317	4.804	3.023
HCM Lane V/C Ratio	0.8	0.854	0.076	0.747	0.562
HCM Control Delay, s/veh	35.9	41.3	10.9	28.3	14.7
HCM Lane LOS	E	E	B	D	B
HCM 95th-tile Q	7.4	9.1	0.2	6.4	3.5

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	0	73	247	213	98
Future Vol, veh/h	306	0	73	247	213	98
Peak Hour Factor	0.88	0.76	0.76	0.78	0.92	0.88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	348	0	96	317	232	111
Number of Lanes	1	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	18.8	10.3	20.2
HCM LOS	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	68%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%
Vol Right, %	32%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	306	73	124	124
LT Vol	213	0	73	0	0
Through Vol	0	306	0	124	124
RT Vol	98	0	0	0	0
Lane Flow Rate	343	348	96	158	158
Geometry Grp	5	5	5	5	5
Degree of Util (X)	0.632	0.614	0.183	0.279	0.201
Departure Headway (Hd)	6.639	6.359	6.843	6.333	4.567
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	542	567	523	565	779
Service Time	4.399	4.127	4.611	4.102	2.334
HCM Lane V/C Ratio	0.633	0.614	0.184	0.28	0.203
HCM Control Delay, s/veh	20.2	18.8	11.2	11.6	8.5
HCM Lane LOS	C	C	B	B	A
HCM 95th-tile Q	4.4	4.1	0.7	1.1	0.7

Intersection	
Intersection Delay, s/veh	33.6
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	37	453	237	65
Future Vol, veh/h	283	0	37	453	237	65
Peak Hour Factor	0.67	0.68	0.67	0.59	0.77	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	55	768	308	88
Number of Lanes	1	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	45.6	22.3	44.1
HCM LOS	E	C	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	78%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%
Vol Right, %	22%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	283	37	227	227
LT Vol	237	0	37	0	0
Through Vol	0	283	0	227	227
RT Vol	65	0	0	0	0
Lane Flow Rate	396	422	55	384	384
Geometry Grp	5	5	5	5	5
Degree of Util (X)	0.868	0.887	0.119	0.772	0.582
Departure Headway (Hd)	7.901	7.558	7.753	7.239	5.457
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	459	477	462	499	660
Service Time	5.65	5.314	5.51	4.995	3.212
HCM Lane V/C Ratio	0.863	0.885	0.119	0.77	0.582
HCM Control Delay, s/veh	44.1	45.6	11.6	30.6	15.6
HCM Lane LOS	E	E	B	D	C
HCM 95th-tile Q	9	9.6	0.4	6.8	3.8

Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	0	91	247	222	116
Future Vol, veh/h	306	0	91	247	222	116
Peak Hour Factor	0.88	0.76	0.76	0.78	0.92	0.88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	348	0	120	317	241	132
Number of Lanes	1	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	20	10.8	23.4
HCM LOS	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	66%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%
Vol Right, %	34%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	338	306	91	124	124
LT Vol	222	0	91	0	0
Through Vol	0	306	0	124	124
RT Vol	116	0	0	0	0
Lane Flow Rate	373	348	120	158	158
Geometry Grp	5	5	5	5	5
Degree of Util (X)	0.694	0.632	0.233	0.285	0.208
Departure Headway (Hd)	6.695	6.545	6.999	6.489	4.72
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	537	549	510	551	752
Service Time	4.462	4.325	4.782	4.271	2.5
HCM Lane V/C Ratio	0.695	0.634	0.235	0.287	0.21
HCM Control Delay, s/veh	23.4	20	11.9	11.9	8.8
HCM Lane LOS	C	C	B	B	A
HCM 95th-tile Q	5.4	4.4	0.9	1.2	0.8

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	24	453	229	53
Future Vol, veh/h	283	0	24	453	229	53
Peak Hour Factor	0.67	0.68	0.67	0.59	0.77	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	36	768	297	72
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	15	19.6	33.1
HCM LOS	B	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	81%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	0%	100%	100%
Vol Right, %	19%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	142	142	24	227	227
LT Vol	229	0	0	24	0	0
Through Vol	0	142	142	0	227	227
RT Vol	53	0	0	0	0	0
Lane Flow Rate	369	211	211	36	384	384
Geometry Grp	5	6	6	5	5	5
Degree of Util (X)	0.785	0.466	0.361	0.073	0.733	0.543
Departure Headway (Hd)	7.658	7.948	6.153	7.385	6.872	5.093
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	472	454	583	486	526	706
Service Time	5.397	5.697	3.901	5.122	4.609	2.829
HCM Lane V/C Ratio	0.782	0.465	0.362	0.074	0.73	0.544
HCM Control Delay, s/veh	33.1	17.5	12.4	10.7	26.3	13.8
HCM Lane LOS	D	C	B	B	D	B
HCM 95th-tile Q	7	2.4	1.6	0.2	6.1	3.3

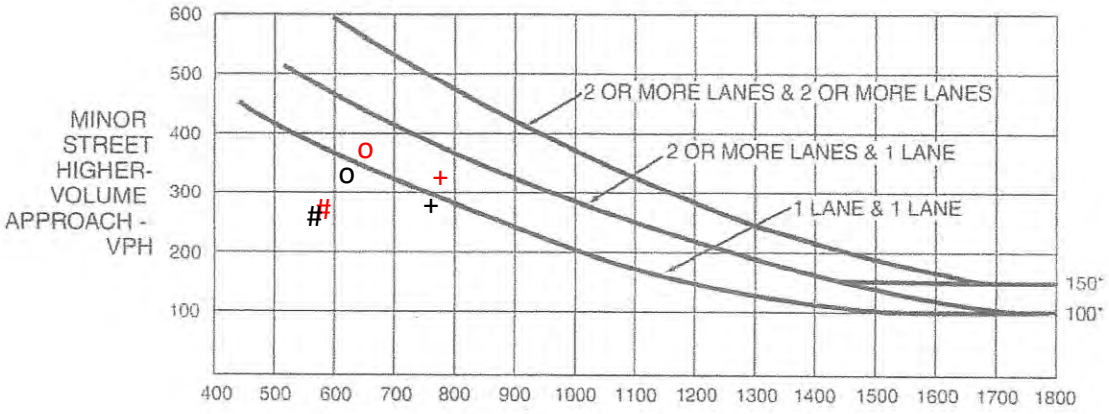
Intersection	
Intersection Delay, s/veh	24
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	37	453	237	65
Future Vol, veh/h	283	0	37	453	237	65
Peak Hour Factor	0.67	0.68	0.67	0.59	0.77	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	422	0	55	768	308	88
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay, s/veh	15.5	20.5	40.2
HCM LOS	C	C	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	78%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	0%	100%	100%
Vol Right, %	22%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	142	142	37	227	227
LT Vol	237	0	0	37	0	0
Through Vol	0	142	142	0	227	227
RT Vol	65	0	0	0	0	0
Lane Flow Rate	396	211	211	55	384	384
Geometry Grp	5	6	6	5	5	5
Degree of Util (X)	0.846	0.478	0.372	0.116	0.749	0.559
Departure Headway (Hd)	7.699	8.146	6.346	7.54	7.026	5.244
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	441	566	475	514	687
Service Time	5.443	5.902	4.1	5.284	4.77	2.986
HCM Lane V/C Ratio	0.841	0.478	0.373	0.116	0.747	0.559
HCM Control Delay, s/veh	40.2	18.2	12.8	11.3	27.9	14.5
HCM Lane LOS	E	C	B	B	D	B
HCM 95th-tile Q	8.5	2.5	1.7	0.4	6.4	3.5

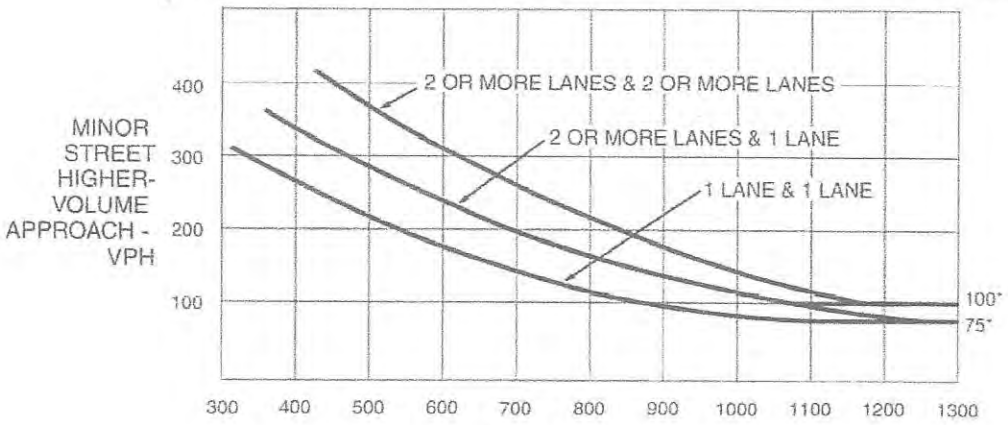
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM

o Exist PM

Exist Midday

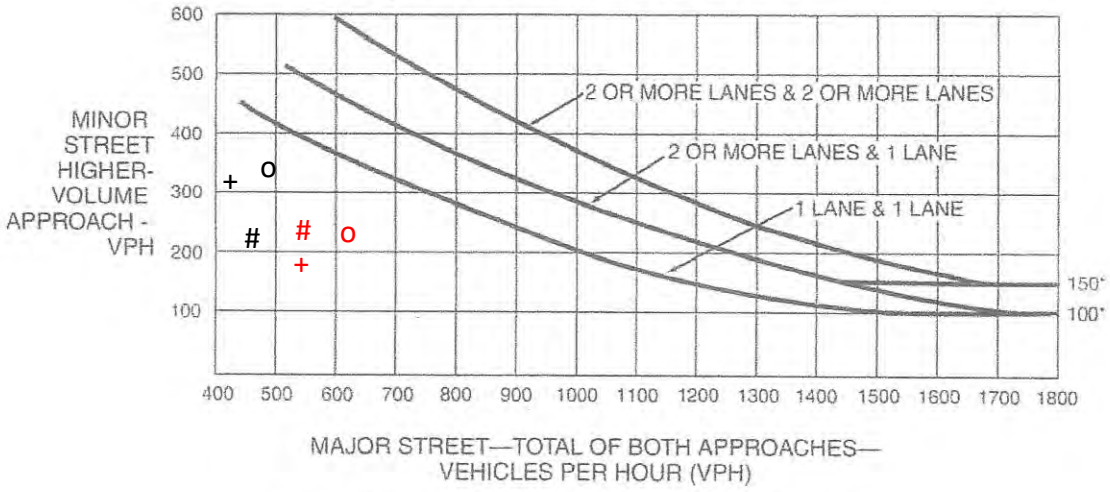
+ Existing + Proj AM

o Existing + Proj PM

Existing + Proj Midday

ARC WAY / FULTON AVE

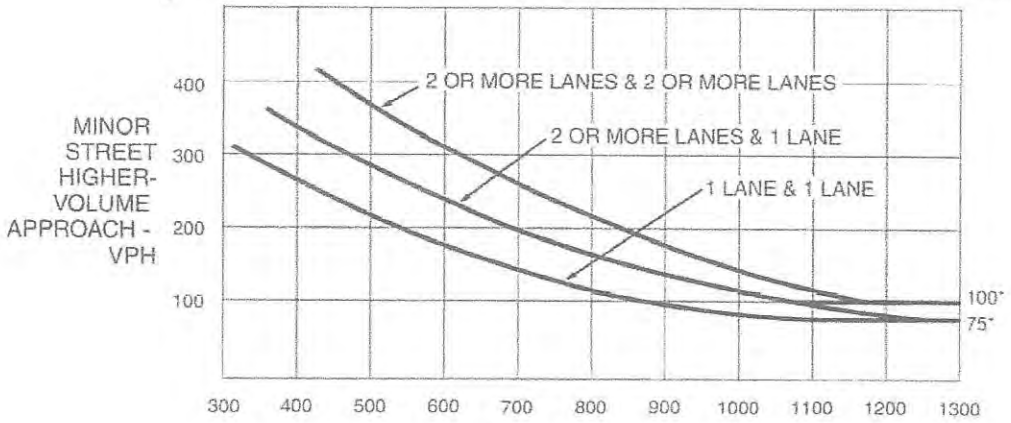
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM

o Exist PM

Exist Midday

+ Existing + Proj AM

o Existing + Proj PM

Existing + Proj Midday

ARC WAY / W. MILGEO AVE