

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

[Pursuant to Public Resources Code Section 21080(c) and California Code of Regulations, Title 14, Sections 15070-15071]

LEAD AGENCY: San Joaquin County Community Development Department

PROJECT APPLICANT: Granum Inc./Alan Mok Engineering

PROJECT TITLE/FILE NUMBER(S): PA-2100077 (UP)

PROJECT DESCRIPTION: This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The project site has access from the Interstate 5 and State Route 33 off ramps. The proposed project will utilize an onsite water well, septic system, and storm water drainage. The project site is not under a Williamson Act contract. (Use Types: Truck Sales and Service-Stop, Gasoline Sales and Service-Combination, and Eating Establishment-Convenience).

The project site is located on the northeast corner of the Interstate 5 on-ramp and the terminous of the State Route 33 off-ramp, Tracy.

ASSESSOR PARCEL NO.: 255-020-11

ACRES: 3.0-ac

GENERAL PLAN: C/FS

ZONING: C-FS

POTENTIAL POPULATION, NUMBER OF DWELLING UNITS, OR SQUARE FOOTAGE OF USE(S):

A truck stop, gas station, convenience store, and fast-food restaurant totaling 14,575 square feet at total buildout.

SURROUNDING LAND USES:

NORTH: Agricultural with Scattered Residences/Interstate 5

SOUTH: Agricultural with Scattered Residences

EAST: Agricultural with scattered residences

WEST: Agricultural with Scattered Residences/State Route 33

REFERENCES AND SOURCES FOR DETERMINING ENVIRONMENTAL IMPACTS:

Original source materials and maps on file in the Community Development Department including: all County and City general plans and community plans; assessor parcel books; various local and FEMA flood zone maps; service district maps; maps of geologic instability; maps and reports on endangered species such as the Natural Diversity Data Base; noise contour maps; specific roadway plans; maps and/or records of archeological/historic resources; soil reports and maps; etc.

Many of these original source materials have been collected from other public agencies or from previously prepared EIR's and other technical studies. Additional standard sources which should be specifically cited below include on-site visits by staff (note date); staff knowledge or experience; and independent environmental studies submitted to the County as part of the project application (Traffic Impact Analysis: SR 33 Gas Station Traffic Impact Analysis Report prepared by GHD, San Joaquin County Department of Public Works. April 21, 2022). Copies of these reports can be found by contacting the Community Development Department.

TRIBAL CULTURAL RESOURCES:

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, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

No

GENERAL CONSIDERATIONS:

1. Does it appear that any environmental feature of the project will generate significant public concern or controversy?

☐ Yes ☒ No

Nature of concern(s): Enter concern(s).

2. Will the project require approval or permits by agencies other than the County?

☐ Yes ☒ No

Agency name(s): Enter agency name(s).

3. Is the project within the Sphere of Influence, or within two miles, of any city?

☐ Yes ☒ No

City: Enter city name(s).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology / Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

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

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: Giuseppe Sanfilippo
Associate Planner

Date: 8-8-2022

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.

Issues:

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

Impact Discussion:

- a-d) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The project site has access from the Interstate 5 and State Route 33 off ramps. The proposed project will utilize an onsite water well, septic system, and storm water drainage. The project site is not located along a designated scenic route pursuant to 2035 General Plan Figure 12-2, and the surrounding area is a mixture of commercial, agricultural, and residential uses. The project will be subject to all Development Title requirements regarding building heights, setbacks, site lighting, and signs. As a result, the proposed project is not anticipated to have an impact on aesthetics.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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II. AGRICULTURE AND FORESTRY RESOURCES.

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

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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 nonagricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-e) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The current zoning for the property is C-FS (Freeway Services Commercial). The proposed project will not affect any agricultural uses, nor will it affect existing Williamson Act contracts as the project will not displace any existing agricultural uses. Therefore, the proposed application will have no impact on agriculture and forestry resources.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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III. 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:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in substantial emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact Discussion:

- a-d) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout.

The Air Pollution Control District (APCD) has provided an Air Impact Assessment (AIA) approval letter dated July 18, 2022. The District has determined that the mitigated baseline emissions for construction and operation will be less than two tons NOx per year and two tons PM10 per year. The District states that pursuant to District Rule 9510, the project complies with emission reduction requirements of District Rule 9510 and is not subject to off-site fees. The project is subject to a Dust Control Plan as a part of District Rule 8021, and Authority to Construct permits as a part of District Rule 2010. A Condition of Approval, the project will be subject to the Districts rule and regulations. As a result, any impacts to air quality will be reduced to less-than-significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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IV. BIOLOGICAL RESOURCES:

Would the project:

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|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-f) The Natural Diversity Database does not list any rare, endangered, or threatened species located on or near the project area. Referrals have been sent to the San Joaquin Council of Governments (SJCOG) for review. SJCOG has determined that the applicant is subject to the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), and the applicant has confirmed participation. The applicant will be required to provide proof of participation prior to issuance of a grading permit. As a result, the proposed project is consistent with the SJMSCP, as amended, as reflected in the conditions of project approval for this proposal. Pursuant to the *Final EIR/EIS for San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP)*, dated November 15, 2000, and certified by SJCOG on December 7, 2000, implementation of the SJMSCP is expected to reduce impacts to biological resources resulting from the proposed project to a level of less-than-significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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V. CULTURAL RESOURCES.

Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Disturb any human remains, including those interred outside of dedicated cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-c) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. No impact on cultural resources is anticipated. Should human remains be discovered during any ground disturbing activities, all work shall stop immediately in the vicinity (e.g. 100 feet) of the finds until they can be verified. The County coroner shall be immediately contacted in accordance with Health and Safety Code section 7050.5(b). Protocol and requirements outlined in Health and Safety Code sections 7050.5(b) and 7050.5(c) as well as Public Resources Code section 5097.98 shall be followed

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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VI. ENERGY.

Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- (a,b) The California Energy Code (also titled The Energy Efficiency Standards for Residential and Non-residential Buildings) was created by the California Building Standards Commission in response to a legislative mandate to reduce California's energy consumption. The code's purpose is to advance the state's energy policy, develop renewable energy sources and prepare for energy emergencies. These standards are updated periodically by the California Energy Commission. The code includes energy conservation standards applicable to most buildings throughout California. These requirements will be applicable to the proposed project ensuring that any impact to the environment due to wasteful, inefficient, or unnecessary consumption of energy will be less than significant and preventing any conflict with state or local plans for energy efficiency and renewable energy.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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VII. GEOLOGY AND SOILS.

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil and create direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact Discussion:

- a-f) The proposed the project is not anticipated to cause seismic effects, erosion, safety effects, or impact water and geologic features. The proposed project will not cause the risk of injury or death as a result of a rupture of a known earthquake fault, seismic activity, or landslides because there are no fault lines in the project vicinity. The proposed project will not result in substantial soil erosion or the loss of topsoil. The proposed project will not destroy a unique paleontological resource or site or unique geological feature. The proposed project is not located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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VIII. GREENHOUSE GAS EMISSIONS.

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Impact Discussion:

a-b) Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the underlying project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO₂) and, to a lesser extent, other GHG pollutants, such as methane (CH₄) and nitrous oxide (N₂O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO₂ equivalents (MTCO₂e/yr).

As noted previously, the underlying project will be subject to the rules and regulations of the SJVAPCD. The SJVAPCD has adopted the *Guidance for Valley Land- use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*.¹¹ The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. To be determined to have a less-than-significant individual and cumulative impact with regard to GHG emissions, projects must include BPS sufficient to reduce GHG emissions by 29 percent when compared to Business As Usual (BAU) GHG emissions. Per the SJVAPCD, BAU is defined as projected emissions for the 2002-2004 baseline period. Projects which do not achieve a 29 percent reduction from BAU levels with BPS alone are required to quantify additional project-specific reductions demonstrating a combined reduction of 29 percent. Potential mitigation measures may include, but not limited to: on-site renewable energy (e.g. solar photovoltaic systems), electric vehicle charging stations, the use of alternative-fueled vehicles, exceeding Title 24 energy efficiency standards, the installation of energy-efficient lighting and control systems, the installation of energy-efficient mechanical systems, the installation of drought-tolerant landscaping, efficient irrigation systems, and the use of low-flow plumbing fixtures.

It should be noted that neither the SJVAPCD nor the County provide project-level thresholds for construction-related GHG emissions. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change.

¹¹ San Joaquin Valley Air Pollution Control District. *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*. December 17, 2009. San Joaquin Valley Air Pollution Control District. *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. December 17, 2009.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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IX. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-g) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The project site is not 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 not create a significant hazard to the public or the environment.

The proposed application would not result in, create or induce hazards and associated risks to the public. Construction activities for the project typically involve the use of toxic or hazardous materials such as paint, fuels, and solvents. Construction activities would be subject to federal, state, and local laws and requirements designed to minimize and avoid potential health and safety risks associated with hazardous materials. No significant impacts are anticipated related to the transport, use, or storage of hazardous materials during construction activities are anticipated.

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

Impact Discussion:

- a-e) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The project site is located in the Flood Zone X, 0.2 percent annual chance of flood designations. A referral has been sent to the Department of Public Works, Flood Control Division for comments. If approved, any new developments will have to comply with Development Title Section 9-1605 regarding flood hazards.

The project proposes two underground gasoline storage tanks, and one underground diesel storage tank. The project will be subject to the Environmental Health Department's rules and regulations regarding the storage of motor vehicle fuels. In a response letter dated July 1, 2021, the Environmental Health Department states the project will be subject to the Underground Storage Tank Program (pursuant to Health and Safety Code Sections 25286 & 25280), or the Aboveground Petroleum Storage Program (pursuant to Health and Safety Code Sections 25270.6 & 25270) if 1,320 gallons or more are stored above ground or any amount of petroleum stored below grade in a vault. These requirements will be incorporated into the project's recommended Conditions of Approval. As a result, impacts to ground and surface waters will be less than significant.

The project site is located approximately 150 feet west of Banta-Carbona Lift Canal. The Banta-Carbona Irrigation District (BCID) submitted an e-mail response dated June 10, 2021 stating concern regarding the possibilities of Pollutants leaching into subsurface or surface waters. BCID further states that they object to the project until the applicant can demonstrate that the project cannot possibly discharge pollutants to the soil or subsurface or surface waters. The nearest BCID waterway is approximately 150 feet east of the project site, and the San Joaquin River is approximately 3.5 miles north of the project site. In addition to the construction of buildings, the project includes other improvements including automobile parking, landscaping, and on-site services for sewage disposal, water, and storm drainage. Development Title Section 9-1135.2(c) states that developers shall provide drainage facilities to prevent the increased runoff of storm water from discharging onto other properties. Therefore, all runoff related to this project must be retained on-site. The stormwater retained on-site will meet all applicable standards to ensure there will be no impact on groundwater.

A referral was sent to the Central Valley Regional Water Quality Control Board for review. As a Condition of Approval, the project will be subject to the Water Board's rules and regulations. As a result, the effects the project will have on waterways in the vicinity are expected to be less than significant.

As a result of these state and county standards, the proposed project will not impact or otherwise substantially degrade surface or ground water quality, conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan because any new well and septic system for the project will be required to be constructed under a permit from the Environmental Health Department. Therefore, all hydrology and water quality impacts will be reduced to less than significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XI. LAND USE AND PLANNING.

Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a,b) The proposed project consists of two use types; Truck Sales and Service-Stop, Gasoline Sales-Combination, and Eating Establishment-Convenience. All of those use types may be a conditionally permitted use in the C-FS (Freeway Services Commercial) zone subject to an approved Use Permit application. This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The project site is surrounded residential, commercial, and agricultural uses. The project will not physically divide an established community and is consistent with surrounding land uses.

The zoning and the General Plan for the project site will remain the same if the project is approved. Additionally, the proposed project will have a less than significant impact to surrounding parcels and will not create premature development pressure on surrounding agricultural lands to convert land from agricultural uses to non-agricultural uses because it is surrounded by various types of urban development including industrial and residential. Therefore, this project is not growth-inducing.

The proposed project will not conflict with any existing or planned uses or set a significant land use precedent. The proposed project is not in conflict with any Master Plans, Specific Plans, or Special Purpose Plans, or any other applicable plan adopted by the County.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XII. MINERAL RESOURCES.

Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a, b) The proposed project will not result in the loss of availability of a known mineral resource of a resource recovery site because the site does not contain minerals of significance or known mineral resources. San Joaquin County applies a mineral resource zone (MRZ) designation to land that meets the significant mineral deposits definition by the State Division of Mines and Geology. Although the project site is in an area designated MRZ-1, there is currently no mining activity in the area, and the surrounding area is developed with residential, agricultural, and commercial uses. Therefore, the proposed project applications will have less than a significant impact on the availability of mineral resources or mineral resource recovery sites within San Joaquin County.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XIII. NOISE.

Would the project result in:

- | | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) For a project 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-c) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The nearest single-family residence is located approximately 1,590 feet southwest of the project site.

Development Title Section 9-1025.9 lists the Residential use type as a noise sensitive land use. Development Title Section Table 9-1025.9 Part II states that the maximum sound level for stationary noise sources during the daytime is 70 dB and 65dB for nighttime. This applies to outdoor activity areas of the receiving use or applies at the lot line if no activity area is known. Additionally, noises from construction activities are exempt from noise standards provided the construction occurs no earlier than 6:00 A.M. and no later than 9:00 P.M. The proposed project would be subject to these Development Title standards. Therefore, noise impacts from the proposed project are expected to be less than significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XIV. POPULATION AND HOUSING.

Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-b) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. Therefore, the project will not induce substantial unplanned population growth in the area. The proposed project will not result in displacement of the population and affect the amount of proposed or existing housing in the vicinity. Therefore, the project's impact on population and housing will be less than significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XV. PUBLIC SERVICES.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact Discussion:

- a) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The South San Joaquin County Fire Authority provides the fire protection in the vicinity. Law enforcement protection is provided by the San Joaquin County Sheriff's Department, and the school district that serves the area is the New Jerusalem School District. No parks are impacted as a result of this project. Impacts to public services are also anticipated to be less than significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XVI. RECREATION.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Impact Discussion:

a-b) The proposed project will not substantially increase the use of existing neighborhood and regional parks because no increase in housing or people is associated with this application. Additionally, the project does not include recreation facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment. No impacts to recreation opportunities are anticipated.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	Ne Impact	Analyzed In The Prior EIR
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XVII. TRANSPORTATION.

Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-d) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. The State Route 33 Gas Station Traffic Impact Analysis Report prepared by GHD dated April 21, 2022 stated that commercial/retail projects of this type that are less than 50,000 square feet are considered locally-serving retail and are presumed to have a less than significant impact on VMT. Thus, the proposed project is presumed to have a less than significant impact on VMT.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XVIII. TRIBAL CULTURAL RESOURCES.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Impact Discussion:

a) This project is A Use Permit application to develop an existing 3-acre lot to include a 3,500 square foot convenience store, a 2,000 square foot restaurant with a drive-thru, a 5,775 square foot canopy with four (4) diesel gas dispensers for tractor trailers, a 3,300 square foot canopy with five (5) gas dispensers for automobiles, and parking for fifteen (15) tractor-trailers. The project proposes 14,575 square feet of total buildings at full buildout. A referral was sent to the United Auburn Indian Community (UAIC), North Valley Yokuts Tribe, and the Buena Vista Rancheria for review.

If any suspected Tribal Cultural Resources (TCR) are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find. A Tribal Representative from culturally affiliated tribes shall be immediately notified and shall determine if the find is a TCR pursuant to Public Resources Code Section 21074. The Tribal Representative will make recommendations regarding the treatment of the discovery. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign. Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of CEQA, including AB 52, has been satisfied. The contractor shall implement any measures deemed by the lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. This has been incorporated into the project's Conditions of Approval.

Additionally, should human remains be discovered during any ground disturbing activities, all work shall stop immediately in the vicinity (e.g. 100 feet) of the finds until they can be verified. The County coroner shall be immediately contacted in accordance with Health and Safety Code section 7050.5(b). Protocol and requirements outlined in Health and Safety Code sections 7050.5(b) and 7050.5(c) as well as Public Resources Code section 5097.98 shall be followed.

As a result of the Condition and existing Health and Safety Code regulations, any impact to tribal cultural resources is anticipated to be less than significant.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XIX. UTILITIES AND SERVICE SYSTEMS.

Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-e) The proposed project is not required to be served by public services. Water will be provided by an on-site well. Sewer services will be through a septic system. Storm water drainage will have to be retained on-site. Parcels zoned C-FS (Freeway Services Commercial) may use a well for water, a septic tank for sewer, and retain all drainage on-site. The Environmental Health Department and the Department of Public Works will determine the size of these systems prior to operation.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XX. WILDFIRE.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Impact Discussion:

- a-d) This project is Use Permit for a truck stop with truck wash, gas station, and convenience store. The project includes a 13,412 square foot convenience store and gas station with a 7,200 square foot automobile fueling canopy, a 5,940 square foot diesel fueling canopy, a 3,500 square foot truck wash, and a 2,032 square foot fuel storage building, and parking for twenty-seven (27) tractor-trailers. The project proposes 30,052 square feet of total buildings at full buildout. Pursuant to the San Joaquin Fire Severity Zone map, the project site is located in an area with non-wildland/non-urban fire zone designation.

The project has access directly from South Ahern Road and all access driveways will be required to meet any applicable San Joaquin County and California Fire Code standards, and the project site is not in a wildfire hazard zone. As a result, the proposed project will have a less than significant impact on potential wildfire hazards.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed In The Prior EIR
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XXI. MANDATORY FINDINGS OF SIGNIFICANCE

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Impact Discussion:

a-c). The proposed application does not have the potential to degrade the environment or eliminate a plant or animal community. The project would not result in significant cumulative impacts or cause substantial adverse effects on human beings, either directly or indirectly.



PA2100077

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PROJECT:
 NEW MINIMART/
 RESTAURANT/GAS
 STATION
 AT
 HIGHWAY 33
 AND INTERSTATE
 HIGHWAY 5

LOCATION:
 30022 HIGHWAY 33
 IRVINE, CA 92614

DRAWN FOR:
 HI-TECH DEVELOPING

LOCATION:
 30022 W. YESSER AVE.
 FRESNO, CA 93705

APPROVED FOR RECORD
 1/10/2005 10:00 AM



REVISIONS:
 NO. DATE DESCRIPTION
 1 1/10/2005 10:00 AM

VICINITY SITE PLAN

PROJECT INFORMATION:
 NAME: 30022-0000
 DATE: 12/9/2005
 DRAWN BY: AM

C1A

Mitigation Monitoring Reporting Plan-PA-2100077

Impact	Mitigation Measure/Condition	Type of Review		Agency for Monitoring and Reporting Compliance	Action Indicating Compliance or Review	Verification of Compliance or Annual Review of Conditions		
		Monitoring	Reporting			By	Date	Remarks
III. Air Quality	Construction and Operation-Exempt from Off-site Fee		X	SJVAPCD	For each project phase, within 30-days of issuance of the first certificate of occupancy, if applicable, submit to the District a summary report of the construction start, and end dates, and the date of issuance of the first certificate of occupancy. Otherwise, submit to the District a summary report of the construction start and end dates within 30-days of the end of each phase of construction.			
III. Air Quality	Construction and Operation-Recordkeeping		X	SJVAPCD	For each project phase, all records shall be maintained on-site during construction and for a period of ten years following either the end of construction or the issuance of the first certificate of occupancy, whichever is later. Records shall be made available for District inspection upon request.			
III. Air Quality	Construction and Operational Dates		X	SJVAPCD	For each project phase, maintain records of (1) the construction start and end dates and 2 the date of issuance of the first certificate of occupancy, if applicable.			
IV. Biological Resources	Participation in the SJMSCP	X		San Joaquin Council of Governments	Certificate of Payment and Signed ITMM.			



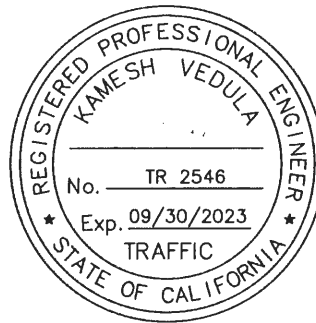
SR 33 Gas Station

Traffic Impact Analysis Report

San Joaquin County

April 21, 2022

This Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data, which recommendations, conclusions, and decisions are based.



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Executive summary

This report summarizes the results of the Traffic Impact Analysis conducted for the proposed development in the northeast quadrant of the Interstate 5 (I-5) and State Route 33 (SR 33)/Ahern Road interchange located in San Joaquin County, approximately 5 miles southeast of the City of Tracy. The proposed 3.0-acre development is comprised of a gas station with 5 gas pumps and 4 diesel pumps for large trucks, with a total of 15 vehicle fueling positions, an associated 3,500 square-foot convenience store, and a 2,000 square-foot fast-food restaurant with a drive-through. Project access is proposed east of the existing northbound I-5 ramps, on the SR 33 access roadway that extends northeast from SR 33.

The purpose of this report is to investigate traffic impacts and adverse effects due to the addition of traffic from the proposed Project to the surrounding transportation system in terms of vehicle miles travelled (VMT) and traffic operations. This study evaluates three study intersections and includes evaluations and recommendations concerning Project site access and truck circulation, traffic operations analysis, and queuing analysis.

The study intersections were evaluated under Existing conditions, and No Project and Plus Project scenarios for Existing Plus Approved/Pending Projects (EPAP) and Cumulative conditions. For the purposes of this analysis, potential traffic operational effects from the proposed project are identified based on established San Joaquin County LOS thresholds. Below is a summary of the analysis findings and recommendations.

Existing Conditions

All three study intersections operate at LOS D or better during the peak hours. Existing 95th percentile queue lengths are within available storage capacities. Collision analysis presented only one collision at the I-5 Northbound ramps intersection; a multi-way stop control is not warranted.

Proposed Project Trip Generation

The Project is expected to generate 3,619 daily weekday, 288 AM peak, and 298 PM peak hour trips, external to the Project site.

Proposed Project Site Access & Truck Turns

Off-tracking analysis of STAA-sized trucks was conducted to evaluate all turns into and out of the Project site at the Project driveway, and at the three study intersections. At the intersection of I-5 Northbound Ramps & SR 33 Access Road, the existing pavement at the corner for the westbound right turn from the SR 33 Access Road to I-5 Northbound ramp is weathered. Improvements include maintenance at the corner or expansion on the access road edge of pavement to address the weathered shoulder.

Also, at the intersection of I-5 Northbound Ramps & SR 33 Access Road, the existing configuration shows that the southbound left turn from the I-5 ramp towards the Project may have an impact if a stop control is in place on SR 33 Access Road approaches. If stop control is placed on SR 33 Access Road, the recommendation is to widen the shoulder so the westbound stop bar can be placed near the intersection and include a striped median for trucks to navigate safely without crossing into opposing traffic.

At the intersection of SR 33 & SR 33 Access Road, the existing configuration shows southbound left turning STAA vehicles onto the Access Road could turn into the area where vehicles could be waiting at the stop bar on the Access Road or conversely into the dirt beyond the shoulder in order to make the turn. In addition, STAA vehicles off-track slightly on the corner when making a northbound right turn. The recommendation is to widen the edge of pavement on the south side of the Access Road for the northbound right turn and southbound left turn receiving lane.

At the intersection of SR 33 & I-5 Southbound Ramps/W Lehman Road, the existing configuration shows that the northbound right turning STAA vehicles off-track slightly on the southeast corner of the intersection.

A preliminary evaluation of on-site circulation shows that STAA-sized trucks would not be able to easily turn around on-site. Trucks fueling on the very east end would also have trouble navigating through the parking area to exit. The recommendation is to provide additional area for truck turn-around and to reverse the direction of travel at the diesel pumps to reduce truck conflicts near the Project driveway.

Recommendations:

Intersection #1: SR 33 Access Road & I-5 Northbound Ramps

- Widen or improve shoulder for westbound right turns at the I-5 northbound ramp entryway.
- If stop control is to be placed on SR 33 Access Road, widen the shoulder on the south side of SR 33 Access Road and include a striped median for trucks to navigate the southbound left turn without encroaching into the opposing traffic lane. Note: Caltrans has recommended to install stop controls on the SR 33 Access Road approaches with the I-5 ramp uncontrolled¹.

Intersection #2: SR 33 & SR 33 Access Road

- Widen a portion of the south side of SR 33 Access Road and southeast corner to accommodate both left and right turns of STAA-sized trucks.
- Relocate the limit line 10 feet back from the edge of shoulder.

Intersection #3: SR 33 at I-5 Southbound Ramps/W Lehman Road:

- Widen the southeast corner to accommodate STAA vehicles off-tracking slightly when making the northbound right turn.

On-Site Circulation:

- Reverse direction of entry for diesel pumps.
- Provide enough area for STAA-sized trucks to turn around in the back of the parking area.

Vehicle Miles Travelled

Based on OPR's Technical Advisory, and consistent with CEQA guidelines, commercial/retail developments less than 50,000 square feet may be presumed to have a less-than significant impact on VMT because they are local-serving. The proposed gas station and restaurant is considered local-serving retail because they will primarily serve existing local traffic do not attract new regional trips. Thus, the proposed Project is presumed to have a less-than-significant impact on VMT.

Existing Plus Approved/Pending Projects (EPAP) Conditions

The assumed approved developments used in the EPAP no Project scenario are known as the Ahern Truck Stop and Fueling Center, and the Sweet Corn Packing Facility. The proposed truck stop is located near the northwest quadrant on the SR 33/I-5 interchange, on the east side of Ahern Road, and the sweet corn packing facility is located west of the interchange and south of Lehman Road.

Under EPAP no Project conditions, it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and LOS D in the AM and PM peak hours, respectively. The intersection control is currently an AWSC. The other two intersections are anticipated to operate acceptably as well. 95th percentile queue lengths are anticipated to be within available storage capacities.

EPAP Plus Project Conditions

Under EPAP Plus Project conditions, it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and **LOS E** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under both EPAP no Project and EPAP Plus Project conditions during the PM peak hour. The other two intersections are anticipated to operate

¹ Source: Email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022.

acceptably. 95th percentile queue lengths are anticipated to be within available storage capacities. Since under EPAP no Project conditions, the intersection of SR 33/I-5 Southbound Ramps/Lehman Road operates acceptably, and with the Project the LOS degrades to LOS E, the recommended improvement would be wholly responsible of the Project.

Recommendations:

Intersection #3: SR 33/I-5 Southbound Ramps/Lehman Road

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection, and extend the southbound shared through and left turn lane to be 735 feet. This improvement would result in LOS B and C during the AM and PM peak hours; or
- Installation of a traffic signal would result in LOS B and C during the AM and PM peak hours
 - This would also require a left turn pocket on northbound SR 33 to facilitate protected left turns, which should be extended to 300 feet storage, and the southbound left turn lane should be extended to 530 feet storage.

Cumulative Conditions

Under Cumulative conditions it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and **LOS F** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under cumulative conditions during the PM peak hour. The other two intersections are anticipated to operate acceptably.

Also, under Cumulative conditions, the queue lengths for the southbound left turn on SR 33, at the intersection of SR 33/I-5 Southbound Ramps/Lehman Road, are projected to exceed the storage capacity of the turn lane during the PM peak hour. Installing a traffic signal would mitigate this adverse effect and provide LOS C operations.

Cumulative Plus Project Conditions

Under Cumulative Plus Project conditions it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS C and **LOS F** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under both Cumulative no Project and Cumulative Plus Project conditions during the PM peak hour. The other two intersections are anticipated to operate acceptably.

Also, under Cumulative Plus Project conditions, the queue lengths for the southbound left turn on SR 33, at the intersection of SR 33/I-5 Southbound Ramps/Lehman Road, are projected to exceed the storage capacity of the turn lane during the PM peak hour. Installing a traffic signal would mitigate this adverse effect and provide LOS C operations. Alternatively, converting the southbound approach to two through lanes and extending the existing storage of the inside lane (left and through movements) would provide LOS C/D operations.

Recommendations:

Intersection #3: SR 33/I-5 Southbound Ramps/Lehman Road

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection, and extend the southbound shared through and left turn lane to be 735 feet; or
- Install a traffic signal with a southbound left turn lane with 530 feet of storage, and a northbound left turn lane with 300 feet storage length.
- Either improvement would mitigate the LOS deficiency and southbound left turn queues exceeding the storage capacity under Cumulative Plus Project conditions. Caltrans has stated that restriping cannot be allowed without widening the intersection to accommodate STAA off-tracking for all turn movements and that the traffic signal would be preferred².

² Source: Email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022, and Caltrans Comment Letter for PA-2100077 dated March 23, 2022..

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1. Introduction

The County of San Joaquin has retained GHD to perform a traffic impact study for a proposed gas station and convenience store development (referred to herein as the “Project”). The proposed 3.0-acre development is comprised of a gas station with 5 gas pumps and 4 diesel pumps for large trucks, with a total of 15 vehicle fueling positions, an associated 3,500 square-foot convenience store, and a 2,000 square-foot fast-food restaurant with a drive-through. The proposed Project is located approximately 5 miles southeast of Tracy, situated in the northeast quadrant of the Interstate 5 (I-5) and State Route 33 (SR 33)/Ahern Road interchange. Project access is proposed east of the existing northbound I-5 ramps, on the SR 33 access roadway that extends northeast from SR 33.

Figure 1.1 presents the project location and Figure 1.2 presents the Project Site Plan.

This report has been prepared to summarize the results of the traffic impact study conducted for the proposed Project, including identifying significant transportation impacts per the California Environmental Quality Act (CEQA), evaluating project site access and circulation, evaluating other operational deficiencies through non-CEQA metrics, and providing recommended improvements as necessary.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. The conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from actual conditions differing from the assumptions within this report.

1.1 Study Intersections and Data Collection

For this study, three existing intersections have been identified for analysis under AM and PM peak hour conditions. These locations were evaluated for average weekday AM and PM peak hour operations under all analysis scenarios. The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 am and 9:00 am on a typical weekday. The PM peak hour is defined as the one hour of peak traffic flow counted between 4:00 pm and 6:00 pm on a typical weekday. Existing geometry, including lane usage, traffic controls, and storage capacity at the study locations, is determined based on available imagery from Google and coordination on recent improvements with the County.

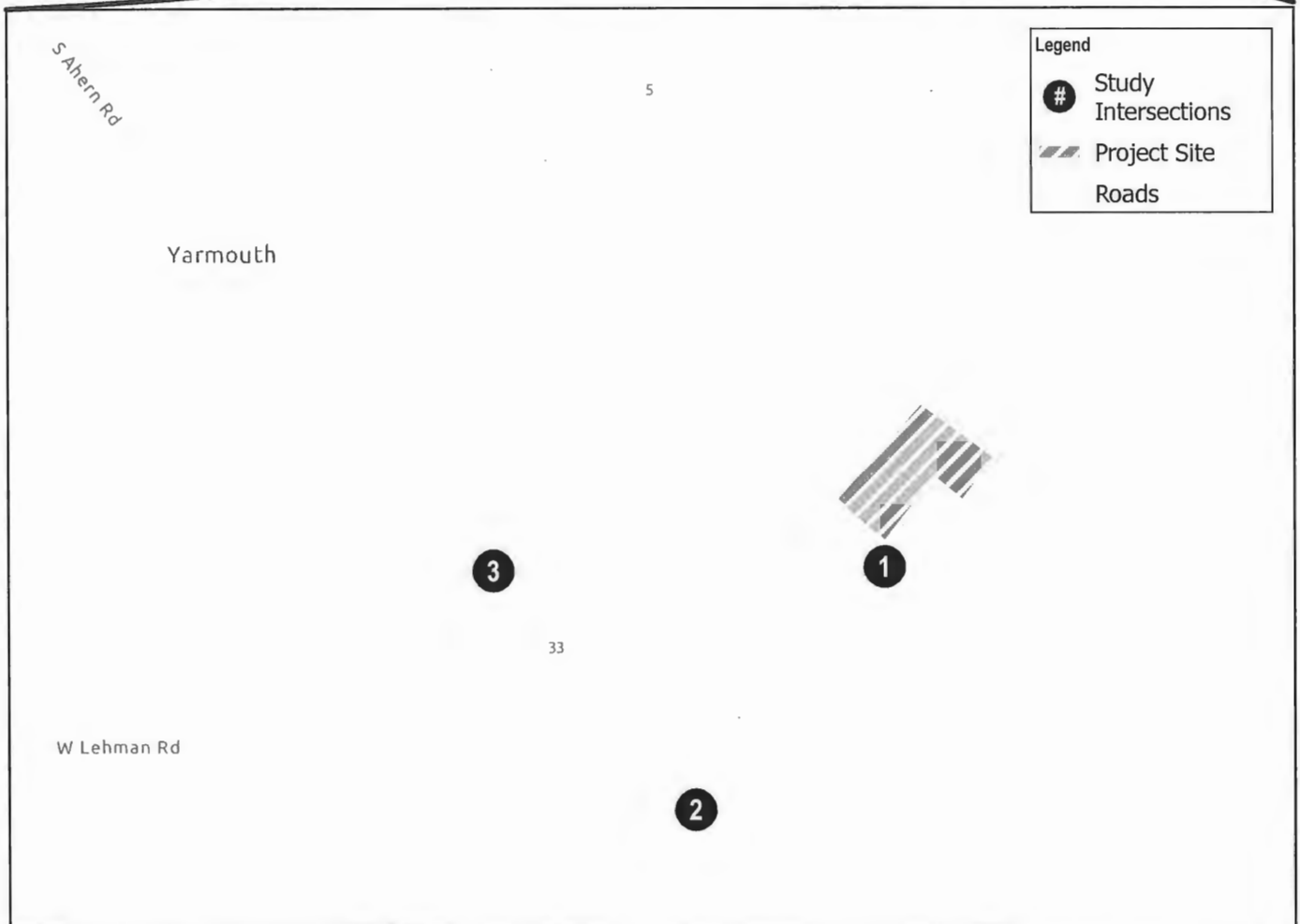
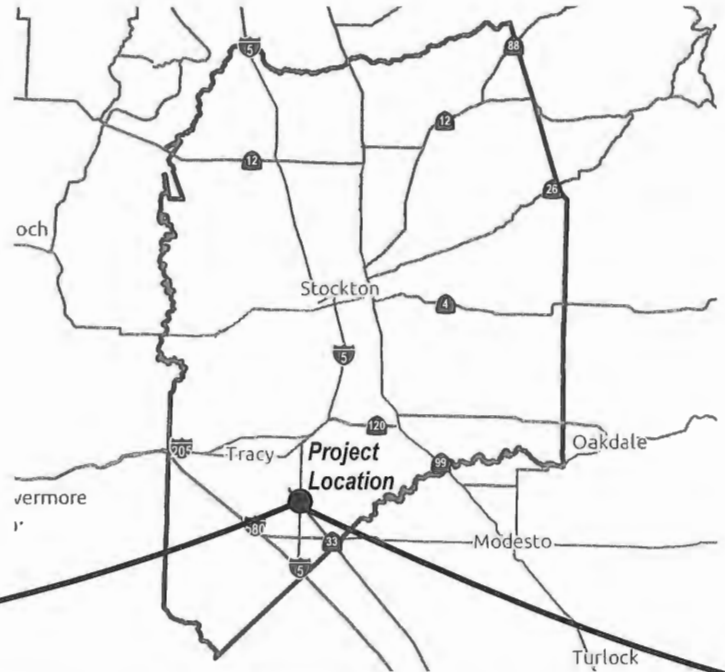
The study intersections are listed below. Peak hour turning movement counts were collected at these intersections on Tuesday, November 30, 2021. The counts are contained in Appendix A.

1. I-5 Northbound Ramps & SR 33 Access Road
2. SR 33 & SR 33 Access Road
3. SR 33 / Ahern Road & I-5 Southbound Ramps / Lehman Road

1.2 Analysis Scenarios

The following analysis scenarios are included in the traffic impact analysis, based on direction from County staff.

- Existing conditions
- Existing Plus Approved/Pending (EPAP) conditions
- EPAP Plus Project conditions
- Cumulative no Project conditions
- Cumulative Plus Project conditions



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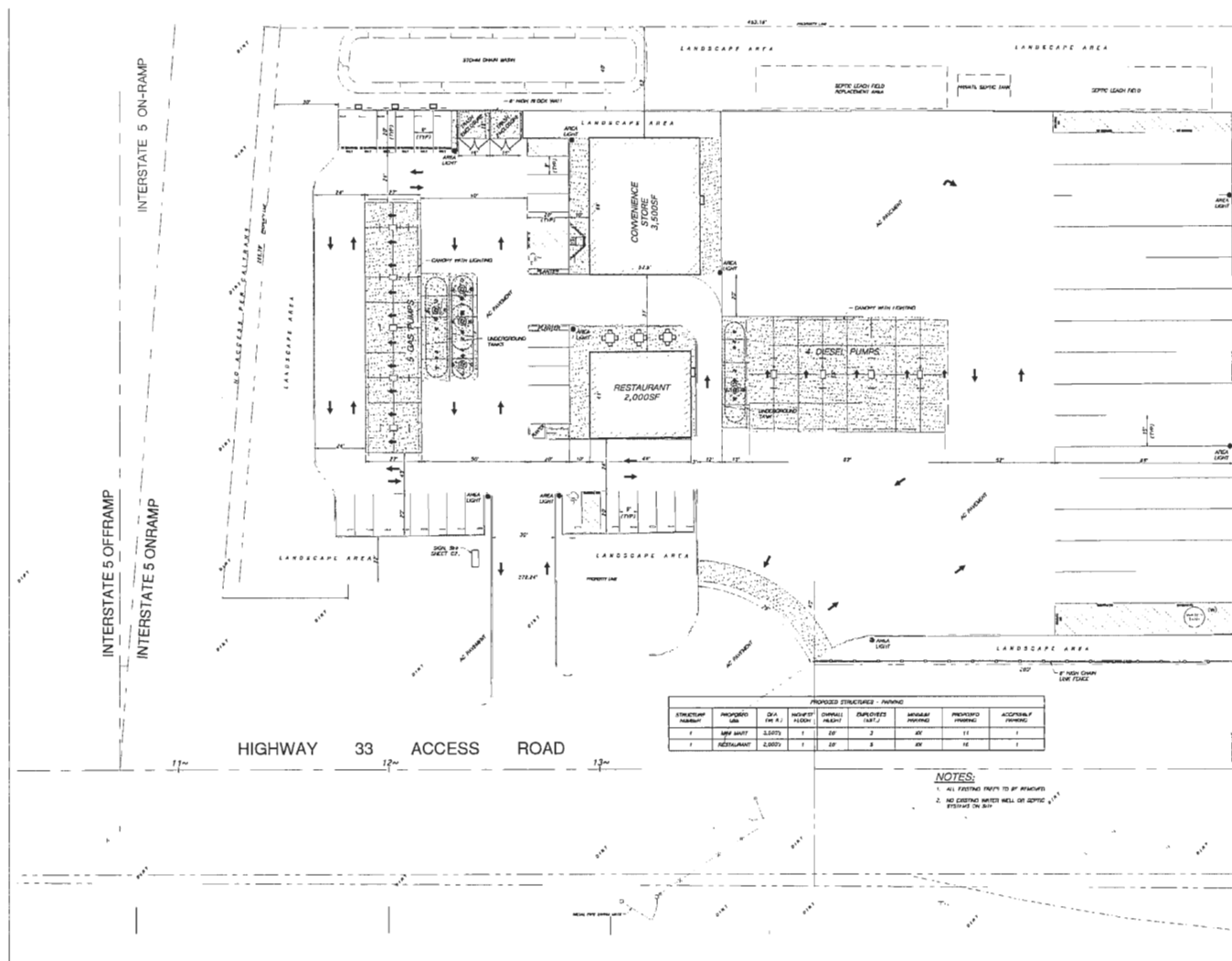
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Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

COUNTY OF SAN JOAQUIN DPW
SR 33 / I-5
GAS STATION TIS

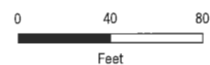
Project No. 12565809
Revision No. -
Date Nov 2021

Vicinity Map &
Project Location

FIGURE 1.1



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COUNTY OF SAN JOAQUIN DPW
 SR 33 / I-5
 GAS STATION TIS

PROJECT SITE PLAN

Project No. 12565809
 Revision No. -
 Date Jan 2022

FIGURE 1.2

Data source: Preliminary Site Plan; Alon Mok Engineering. Created by: pthornton

2. Technical Analysis Parameters & Methodologies

The following section outlines the analysis parameters and methodologies that were used in the transportation impact study to quantify potential project effects for the analysis scenarios.

2.1 Vehicle Miles traveled (VMT)

Senate Bill (SB) 743 was signed into law in 2013, with the intent to better align CEQA practices with statewide sustainability goals related to efficient land use, greater multimodal choices, and greenhouse gas reductions. The provisions of SB 743 became effective Statewide on July 1, 2020. Under SB 743, automobile delay, traditionally measured as level of service (LOS), is no longer considered an environmental impact under CEQA. Instead, impacts are determined by changes to vehicle miles traveled (VMT). VMT measures the number and length of vehicle trips made on a daily basis. VMT is a useful indicator of overall land use and transportation efficiency, where the most efficient system is one that minimizes VMT by encouraging shorter vehicle trip lengths, more walking and biking, or increased carpooling and transit. In recognition that the character of communities, availability of travel modes options and geographic areas all differ throughout the State, each jurisdiction, from regional agency, to County, to City, has been given the opportunity to establish their own VMT thresholds consistent with the State's guidelines and regulatory framework. For this study, VMT was the metric analyzed to determine compliance under CEQA, and LOS will also be analyzed in alignment with County policy.

San Joaquin County is in the process of developing the *CEQA Transportation Analysis Guidelines* and the *VMT Thresholds Study* which will issue guidance on the assessment of VMT impacts. GHD will utilize the methodologies and screening criteria being considered for the County in their Draft guidelines, which are themselves consistent with the Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), and the Caltrans *VMT-Focused Transportation Impact Study Guide* (May 2020).

Based on OPR's Technical Advisory, and consistent with CEQA guidelines, commercial/retail developments less than 50,000 square feet may be presumed to have a less-than significant impact on VMT because they are local-serving. The proposed gas station and restaurant can be considered local-serving retail because they do not attract new regional trips and will serve existing local traffic.

2.2 Level of Service (LOS)

Traffic operations were quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment, representing progressively worsening traffic conditions. LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. LOS was calculated for all intersection control types using the methods documented in the Transportation Research Board's publication *Highway Capacity Manual, Sixth Edition, A Guide for Multimodal Mobility Analysis*, 2016 (HCM 6).

2.2.1 Intersection Operations

The Synchro 10 (Trafficware) software program was used to implement the HCM 6 analysis methodologies. Synchro 10 has the capability to produce results based on HCM 2000, HCM 2010, HCM 6, or Synchro methodologies, and considers intersection signal timing and queuing constraints when calculating delay and queue lengths. Intersection LOS was calculated for all control types using the methods documented in HCM 6. For signalized and all-way stop-controlled (AWSC) intersections, an LOS determination is based on the calculated average delay for all approaches and movements. For two-way or side-street stop-controlled (TWSC) intersections, an LOS determination is based upon the calculated average delay for all movements of the worst-performing approach. The vehicular-based LOS

criteria for different types of intersection controls are presented in Table 2.1. All of the Synchro reports for the intersection analyses are contained in Appendix B.

Table 2.1 *Level of Service (LOS) Criteria for Intersections*

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay per Vehicle	
				Signalized	Un-signalized
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤10.0	≤10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and ≤20.0	>10.0 and ≤15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and ≤35.0	>15.0 and ≤25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and ≤55.0	>25.0 and ≤35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and ≤80.0	>35.0 and ≤50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>80.0	>50.0

2.2.2 Level of Service Policies

San Joaquin County

The San Joaquin County General Plan Public Facilities and Service Element, 2016, specifies the following policy pertaining to the LOS standards for County-maintained roadways:

TM-3.1 Roadway Provision

The County shall maintain Level of Service (LOS) standards consistent with the San Joaquin Council of Governments (SJCOG) Congestion Management Program (CMP) for State highways and designated County roadways and intersections of regional significance. Per the CMP, all designated CMP roadways and intersections shall operate at an LOS D or better except for roadways with "grandfathered" LOS. LOS for State highways shall be maintained in cooperation with Caltrans. The County LOS standards for intersections is LOS "D" or better on Minor Arterials and roadways of higher classification and LOS "C" or better on all other non-CMP designated County roadways and intersections. The County shall also maintain the following:

- on State highways, LOS D or Caltrans standards whichever is stricter.*
- Within a city's sphere of influence, LOS D, or the city planned standards for that level of service.*
- On Mountain House Gateways, as defined in the Master Plan, LOS D, on all other Mountain House roads, LOS C.*

For State highways are designated as part of SJCOG's CMP, both the Caltrans and CMP LOS standards shall apply. Where roadways are designated as part of SJCOG's CMP, both the County and CMP LOS standards shall apply.

All three study intersections are within Caltrans jurisdiction, therefore the applicable LOS standard for these locations is **LOS D** or better.

2.2.3 Traffic Signal Warrant Analysis

A supplemental traffic signal "warrant" analysis was completed if an intersection operates or is projected to operate beyond the LOS threshold. The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise unsignalized intersection. This study will employ the signal warrant criteria presented in the latest edition of the 2014 California Manual on Uniform Traffic Control Devices (2014 CA MUTCD, Revision 6). The signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, frequency of accidents, location of school areas etc. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. The ultimate decision to signalize an intersection should be determined after careful analysis of all intersection and area characteristics.

This traffic operations analysis will specifically utilize the Peak-Hour-Volume-based Warrant 3 as one representative type of traffic signal warrant analysis. Signal warrant analyses will only be conducted for non-signalized intersections which are projected to operate beyond the LOS threshold.

2.2.4 Stop Control Warrant Analysis

If the study intersections #1 or #2 operate poorly, beyond the LOS threshold, under Existing or Existing Plus Project conditions, then a stop-control warrant analysis will be conducted. Stop control warrant analysis will not be conducted based on approved/pending or forecasted traffic data. The CA MUTCD contains the guidance and standards for applications of multi-way stop signs; collision history is one criterion in addition to traffic volumes. Therefore, collision history was evaluated at intersections #1 and #2.

2.2.5 Technical Analysis Parameters

Table 2.2 presents the technical parameters that were utilized for the evaluation of the study intersections for the analysis scenarios. All parameters not listed should be assumed as default values or calculated based on parameters listed.

Table 2.2 Technical Parameter Assumptions

	Technical Parameter	Assumption
1	Intersection Peak Hour Factor (PHF)	Existing: Based on counts, intersection overall EPAP and Cumulative (with and without Project) intersection overall: minimum 0.88; except for the SB Ramps (Intersection #3) which existing is at 0.92 in the AM peak hour.
2	Intersection Heavy Vehicle Percent (HV%)	Based on counts, intersection overall – Intersection #1 has 21% in AM peak and 16% in PM peak – Intersection #2 has 10% in AM peak and 7% in PM peak – Intersection #3 has 9% in AM peak and 9% in PM peak
3	Roadway configuration/direction	SR 33 is considered to be northbound/southbound SR 33 Access Road is considered to be eastbound/westbound

2.3 Queuing

The queuing assessment is primarily performed for safety considerations. SimTraffic (TrafficWare) software was used to calculate the 95th percentile queue lengths at the three study intersections including queue estimations on the I-5 off-ramps. The 95th percentile queues reflect the maximum back of queue for the 95th percentile traffic volumes for each controlled movement at the intersection. When vehicle queues extend beyond the available storage or extend to the degree of spilling back into adjacent intersections or spilling back into the mainline freeway or deceleration lane, safety issues between vehicles entering and exiting the main roadway or turning or traveling through an intersection can result. Under certain conditions, queue spillback can also result in left or right turn lane starvation which create capacity inefficiencies in the roadway network. The queueing reports from SimTraffic are contained in Appendix C.

The Project is considered to have an adverse effect if Project traffic:

- Results in 95th percentile queue lengths that exceed the available storage including ramp spillback under the corresponding Plus Project condition, where the corresponding 95th percentile queue lengths were within available storage under the No Project condition.

3. Existing Conditions

Figure 3.1 presents the existing intersection lane geometry and control in place at each study intersection. Figure 3.2 presents the AM and PM peak hour turning movement volumes under Existing conditions.

Based on traffic data collected during the commute AM and PM peak periods on November 30, 2021, an intersection analysis has been evaluated and presented below to determine if any of the study intersections are currently operating beyond the LOS threshold.

3.1 Intersection Operations

Table 3.1 presents the Existing conditions intersection LOS analysis results, with delay measured in seconds per vehicle.

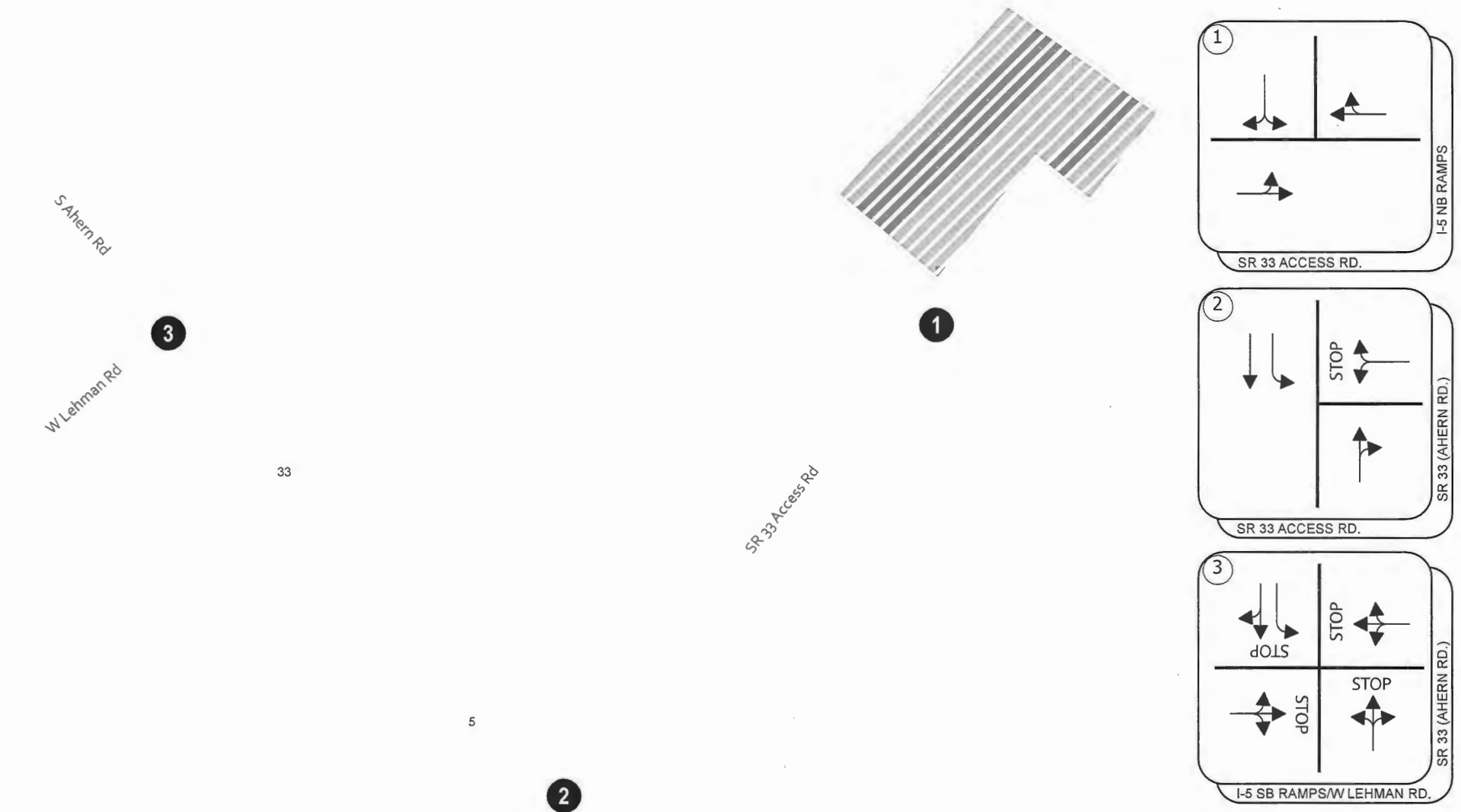
Table 3.1 Intersection LOS Results – Existing Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	8.5	A	8.5	A
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	9.3	A	9.2	A
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	D	11.0	B	11.4	B
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	9.2	A	14.0	B

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDTB = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDTB
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modelled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.
4. **Bold** = Beyond LOS threshold

As presented in Table 3.1, all three intersections operate at acceptable LOS during the AM and PM peak hours under Existing conditions. Additionally, there are no existing multimodal facilities in the vicinity (transit, designated bikeways or bike lanes, or sidewalks).



Legend

- # Study Intersections
- //// Project Site
- Roads

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US Feet

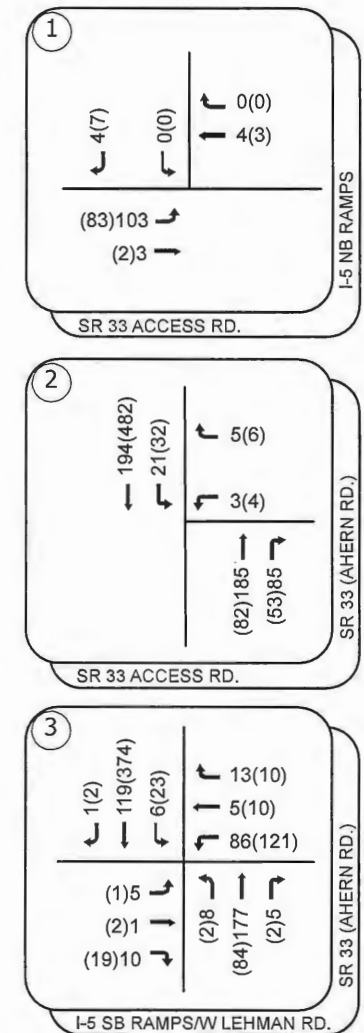
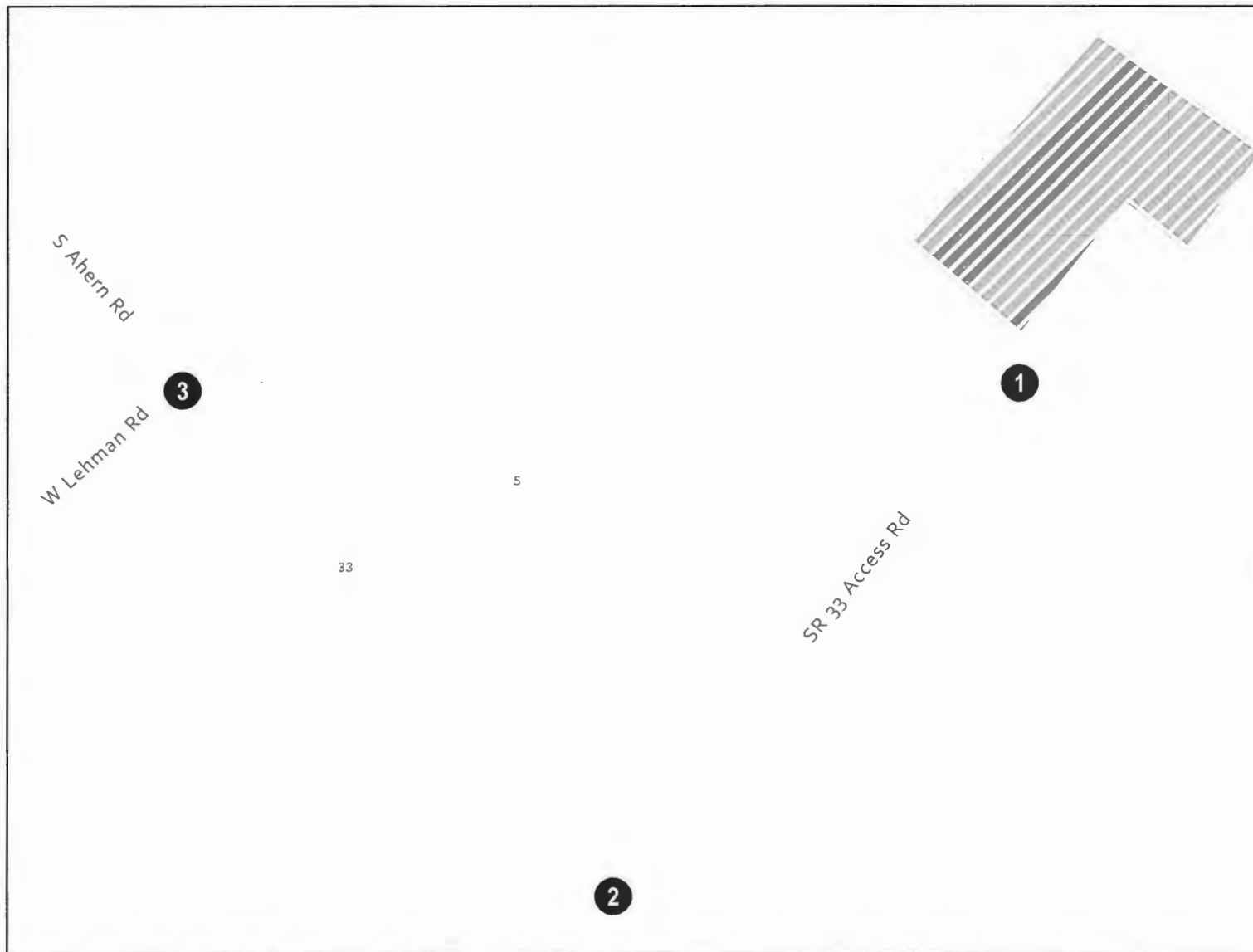
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Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet



COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
**EXISTING INTERSECTION
LANE GEOMETRIES &
TRAFFIC CONTROL**

Project No. 12565809
Revision No. -
Date Nov 2021

FIGURE 3.1



Legend

- # Study Intersections
- Project Site
- Roads

Paper Size ANSI A

0 125 250

US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet



COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
**EXISTING CONDITIONS
PEAK HOUR
VOLUMES**

Project No. 12565809
Revision No. -
Date Dec 2021

FIGURE 3.2

3.2 Queuing

Queue lengths were analyzed using SimTraffic software for all analysis scenarios. Table 3.2 presents the 95th percentile queue lengths for each lane under Existing conditions compared against the available storage and intersection spacing.

Table 3.2 Queuing by Lane – Existing Conditions

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	8	4
			WB	TR	210	0	0
			SB	LR	1,364	19	28
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	74	70
			WB	TR	210	29	21
			SB	LR	1,364	0	0
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	WB	LR	996	30	33
			NB	TR	-	0	0
			SB	L	190	25	21
				T	1,087	0	0
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	38	38
			WB	LTR	1,421	63	68
			NB	LTR	1,027	71	59
			SB	L	180	27	45
				TR	-	64	115

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modelled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.

As presented in Table 3.2, all 95th percentile queue lengths are within the available storage lengths under Existing conditions. Spillback beyond available storage is unlikely.

3.3 Collision History

Collision history was evaluated at the first two study locations per Caltrans District 10 request (letter dated June 15, 2021) to evaluate stop control warrants, based on the criteria within the 2014 California MUTCD, Revision 6. Collision data over the most recent five-year period available from the Statewide Integrated Traffic Records System (SWITRS) were evaluated at the intersection of SR 33/SR 33 Access Road, and the I-5 Northbound Ramps intersection to determine if a multi-way stop control is warranted. The collision-related criteria states, "Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions." Based on the collision data, presented in Table 3.3, there was only one collision at the I-5 Northbound ramps intersection and no collisions at SR 33/SR 33 Access Road over the past five years. Therefore, a multi-way stop control is not warranted at either location based on collision history.

Table 3.3 *Intersection Collision History*

Intersection	2015	2016	2017	2018	2019	2020	Grand Total
1 - SR 33 Access Road/I-5 Northbound Ramps	0	0	0	1	0	0	1
2 - SR 33/SR 33 Access Road	0	0	0	0	0	0	0

4. Project Description

The term “Project” as used in this study refers to the proposed development located east of the I-5 northbound ramps, at the end of the SR 33 Access Road. The proposed 3.0-acre development is comprised of a gas station with 5 gas pumps and 4 diesel pumps for large trucks, with a total of 15 vehicle fueling stations, an associated 3,500 square-foot convenience store, and a 2,000 square-foot fast-food restaurant with a drive-through.

4.1 Project Site Plan & Site Access

The preliminary site plan for the proposed development is presented in Figure 1.2 (page 3). The primary site accesses are located at two driveways connecting to the SR 33 Access Road, east of the I-5 Northbound ramps. The easternmost driveway provides access to the diesel fueling pumps for trucks. In addition to large truck parking stalls, limited space is provided for truck turning maneuvers and circulation on-site. The westernmost driveway provides access to the passenger vehicle fueling stations and parking for both the fast-food restaurant and convenience store. Based on the preliminary Site Plan received from the County on February 9, 2022, the westernmost driveway is located approximately 130 feet from the I-5 Northbound ramps intersection (as measured between the curb returns).

4.1.1 Stop Control Warrant Analysis

This study recommends modification of the intersection control at study intersection #1: I-5 Northbound Ramps & SR 33 Access Road, which is currently uncontrolled and adjacent to the Project access. The California MUTCD Section 2B contains the standards and guidance for stop signs including right-of-way, stop sign and multi-way stop applications.

CA MUTCD Section 2B.04 states,

“YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist: A. An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law; B. A street entering a designated through highway or street; and/or C. An unsignalized intersection in a signalized area.”

Currently, the intersection at the I-5 Northbound Ramps/SR 33 Access Road is uncontrolled, could be considered a street entering a designated through highway, the normal right-of-way rule may not be expected as the off-ramp is currently a free movement, and the approach where the Project is located is a dead-end/cul-de-sac where very little traffic currently travels. The addition of the project traffic would add traffic to the conflicting turning movements at the intersection and would necessitate some form of intersection control.

GHD has analyzed two options for stop control at this location: (1) stop controls on SR 33 Access Road approaches with the off-ramp having the free movement, and (2) stop control on the off-ramp with SR 33 Access Road with the free movements. The preferred type of intersection control will need to be determined in coordination with Caltrans but may ultimately require an Intersection Control Evaluation (ICE) analysis (separate from this study). Note: Caltrans has recommended to install stop control on SR 33 Access Road with the I-5 ramp uncontrolled³.

The guidance, or warrants for a multi-way stop control, consider the most recent reported collision history, traffic volumes entering the intersection, delay, and number of pedestrians crossing the major street to justify the installation of a multi-way stop control. Based on existing conditions, project traffic, and collision history, this intersection does not meet the warrant for an all-way stop control.

³ Source: email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022.

4.1.2 Truck Off-tracking and Turning Analysis

Off-tracking analysis was conducted at the adjacent study intersections per Caltrans request (letter dated June 15, 2021 and comments received). This analysis utilizes the STAA truck with 67-foot turning radius as the design vehicle⁴. All turns into and out of the Project site at the Project driveway are included, as well as all turns to and from the Project site at the three study intersections. Trucks are assumed to only use the easternmost driveway to access the truck fueling area. The edge of pavement was approximated based on aerial imagery. The truck turn exhibits are included in Appendix F and include the Site Plan that was provided at the time the study was conducted.

Based on the truck turn exhibits the following impacts and recommendations have been identified:

- Intersection #1 – I-5 Northbound Ramps at SR 33 Access Road:
 - The existing pavement at the corner for the westbound right turn from the SR 33 Access Road to I-5 Northbound ramp is weathered (Figure F.1)
 - Recommend maintenance at the corner or expansion on the access road edge of pavement to address weathered shoulder.
 - The existing configuration shows that the southbound left turn from the I-5 ramp towards the Project may have an impact if a stop control is in place on SR 33 Access Road approaches. (Figure F.1)
 - If stop control is placed on SR 33 Access Road, the recommendation is to widen the shoulder on the south side of the road so the stop bar can be placed near the intersection and include a striped median for trucks to navigate safely.
- Intersection #2 – SR 33 at SR 33 Access Road:
 - The existing configuration shows STAA vehicles off-tracking slightly on the corner when making the northbound right turn (Figure F.3)
 - The existing configuration shows STAA vehicles which turn southbound left from SR 33 to the Access Road, turning into the area where vehicles could be waiting at the stop bar on SR 33 Access Road. Trucks turning southbound left would either go into the oncoming traffic lane (as shown in Figure F.4) or into the dirt beyond the shoulder in order to make the left turn.
 - Recommend widening the edge of pavement on the south side of the SR 33 Access Road for the northbound right turn and the southbound left turn receiving lane and relocating the limit line 10 feet back from the edge of shoulder to accommodate all turns.
- Intersection #3 – SR 33 at I-5 Southbound Ramps/W Lehman Road:
 - The existing configuration shows STAA vehicles off-tracking slightly on the corner when making the northbound right turn (Figure F.5).
 - Recommend widening the edge of pavement on the southeast corner to accommodate the northbound right turn.

Additionally, a preliminary evaluation of on-site circulation was conducted with the following notes and recommendations:

- GHD assumes that no large trucks would be permitted to enter via the first, westernmost driveway. The second, easternmost driveway is wide enough to accommodate STAA-sized vehicles.
STAA-sized trucks would not be able to easily turn around on-site, especially if the truck parking area is occupied. The site plan shows the directional arrows for the diesel pumps to be northbound/inbound. GHD recommends providing additional area for trucks to be able to turn around in the back of the parking area. GHD recommends reversing the direction of travel at the pumps so that trucks would come in on the right, turn around, and then position themselves at the pumps. This would also reduce truck conflicts near the entrance/exit.

⁴ Design vehicle illustrated in the California Highway Design Manual, Figure 404.5B:
<https://dot.ca.gov/-/media/dot-media/programs/design/documents/chp0400-a11y.pdf#page=20>

4.2 Project Trip Generation

Project site trip generation has been estimated for the commercial land uses. These estimations were achieved by utilizing the Institute of Transportation Engineers (ITE) publication Trip Generation Manual (11th Edition). Trip rates for the fast-food restaurant will use the land use code 934 for "Fast-Food Restaurant with Drive-Through Window", and trip rates for the gas station and convenience store will use land use code 945 for "Convenience Store/Gas Station".

4.2.1 Internal Trip Capture

Internal trip capture is the portion of trips generated by the individual land uses of a mixed-use development that are satisfied on-site by complementary uses. For the purpose of this study, the internal trip capture is applied to the gas station and restaurant, to account for the likely trips between the two new retail land uses. The ITE Trip Generation Handbook 3rd Edition provides AM and PM peak internal capture rates between the general land use categories within a mixed-use development, including between two retail uses. Additionally, the ITE Trip Generation Handbook, 2nd Edition provides daily internal capture rates between general land use categories. This study assumes the internal capture reduction based on the ITE rates and is calculated for each land use type. The internal capture calculations are included in Appendix D. Overall, the internal capture calculations resulted in an approximate 13% reduction in project trips for daily, AM peak hour, and PM peak hour. The number of internal capture project trips is subtracted from the total project trips.

4.2.2 Pass-by/Link-Diverted Trips

Pass-by trips are trips that would already be travelling on the immediately adjacent street to a project, that will turn into the project and afterwards return to the immediately adjacent street and resume their original trip purpose. These are trips that already occur on the adjacent street in the No Project condition, but their path through the study area changes, and thus these trips will affect turning movements at the project driveways.

Link-diverted trips are similar to pass-by trips. Unlike pass-by trips that are generated from traffic on the immediately adjacent roads to the project, link-diverted trips are trips that are diverted from nearby facilities to the Project. As with pass-by trips, these are not new trips to the roadway system, but these trips will generate new traffic at the project study driveways and intersections. In the context of this project, a true pass-by trip cannot exist because the Project is at the end of the SR 33 Access Road. However, the Project is adjacent to I-5 and relatively close to SR 33. Therefore, the pass-by and link-diverted trips have been combined to account for trips that will come from I-5 in both directions and from both directions of SR 33.

The ITE Trip Generation Handbook 3rd Edition provides AM and PM peak hour average rates for pass-by or link-diverted trips for a fast-food restaurant with drive-thru and for a gas station with convenience store. The ITE pass-by/link-diverted average rate for a fast-food restaurant with drive-thru is 49% for AM peak hour and 50% for PM peak hour. The ITE pass-by/link-diverted average rate for a gas station with convenience store is 76% for both AM and PM.

However, ITE does not provide daily rates for pass-by/link-diverted trips. Therefore, the daily rate is based on The San Diego Association of Governments' (SANDAG's) *Brief Guide to Vehicular Traffic Generation Rates for the San Diego Region* (2002). SANDAG presents an average rate of 49% for both pass-by and link-diverted trips for a fast-food restaurant with drive-thru and an average rate of 79% for both pass-by and link-diverted trips for a gas station.

The pass-by/link-diverted trips are applied to both directions of I-5 and both directions of SR 33. The study assumes the following distribution of pass-by/link-diverted trips. Given the Project's proximity to these roadways and existing traffic volumes along I-5 and SR 33, these are reasonable estimates for the proposed uses.

- 50% from I-5 Northbound
- 30% from I-5 Southbound
- 10% from SR 33 Northbound
- 10% from SR 33 Southbound (Ahern Road)

4.2.3 Net New Trips (Primary Trips)

Primary project trips are trips that previously would not be on the vicinity roadways without the proposed Project in place. These trips are not pass-by trips, link-diverted trips, or trips satisfied internally by adjacent land uses. These trips are “net new trips” in the below table.

Table 4.1 presents the trip generation for the Project, accounting for internal trip capture (drivers visiting both of the site’s land uses) and pass-by/link-diverted trips (trips that exist under No-Project conditions but change their route choice or utilize the ramps to visit the Project site). The analysis utilizes the External Trips as the Project-added traffic at the study intersections.

As presented in Table 4.1, the Project is estimated to generate 3,619 daily external site trips, 288 AM peak hour and 298 PM peak hour external site trips. The Project is estimated to generate 959 net new daily vehicle trips, 87 vehicle trips during the AM peak hour, and 82 vehicle trips during the PM peak hour. The Project’s trip generation is assumed to remain constant between the Existing and Cumulative scenarios.

4.3 Project Trip Distribution & Assignment

The Project trip distribution was based on the approved Traffic Impact Study for the proposed truck stop at 29700 Ahern Road (located in the northwest quadrant of the I-5 and SR 33 interchange) because it has a similar land use and location as the proposed Project. The trip distribution assumptions are listed below and are applied to the Project’s net new trips.

- 20% on I-5 northeast of the Project
- 20% on I-5 southwest of the Project
- 30% on SR 33 to/from the south
- 25% on SR 33 to/from the north
- 5% on W. Lehman Road

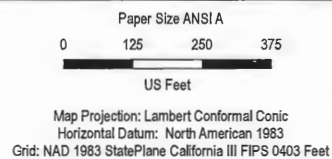
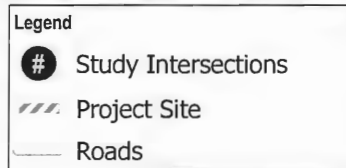
Figure 4.1 presents the distribution of Project-generated net new vehicle trips under Existing Plus Approved/Pending Plus Project and Cumulative Plus Project conditions. The net new Project trips were assigned to the study intersections based on the above trip distribution. The net new Project trips were superimposed with the pass-by/link-diverted trips, assigned based on their respective trip distributions, to calculate the total external trips associated with the Project. Figure 4.2 presents the Project Only peak hour traffic volumes at the study intersections.

Table 4.1 Project Trip Generation

Land Use Category (ITE Code)	Unit	Daily Trip Rate/Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Fast-Food Restaurant with Drive-Through Window (934)	KSF	467.48	44.61	51%	49%	33.03	52%	48%
Super Convenience Market/Gas Station (960)	Fueling Positions	214.93	16.06	50%	50%	18.42	50%	50%
Project Component	Quantity (Units) Percentages (Daily:AM:PM)			AM Peak Hour Trips			PM Peak Hour Trips	
				Total	In	Out	Total	Out
Fast-Food Restaurant with Drive-Through Window	2.000		935	89	45	44	66	32
Internal Capture with Gas Station with Convenience Store			-270	-21	-15	-6	-22	-13
External Trips (Fast Food Restaurant)			665	68	30	38	44	19
Pass-by/Link-Diverted Trips (Fast Food Restaurant)	-49%	-49%	-50%	-326	-34	-15	-19	-10
Net New Primary Trips (Fast Food Restaurant)			339	34	15	19	21	9
Gas Station with Convenience Store	15		3,224	241	121	120	276	138
Internal Capture with Fast Food Restaurant			-270	-21	-6	-15	-22	-9
External Trips (Gas Station with Convenience Store)			2,954	220	115	105	254	125
Pass-by/Link-Diverted Trips (Gas Station with Convenience Store)	-79%	-76%	-76%	-2,334	-167	-87	-80	-95
Net New Primary Trips (Gas Station with Convenience Store)			620	53	28	25	61	31
Total External Trips Accessing the Project Site			3,619	288	145	143	298	148
Total Net New (Primary) Trips			959	87	43	44	82	40

Notes:

1. KSF = 1,000 square feet DU = dwelling unit
2. Trip rates based on ITE Trip Generation Manual, 11th Edition average rates or fitted curve equations.
3. Internal Capture rates are based on ITE Trip Generation Handbook, 2nd Edition (Daily rates) and 3rd Edition (AM/PM rates).
4. Pass-by/Link-Diverted trip rates are based on ITE Trip Generation Handbook, 3rd Edition, Appendix E, and SANDAG "Brief Guide to Vehicular Traffic Generation Rates for the San Diego Region" (2002).



COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS

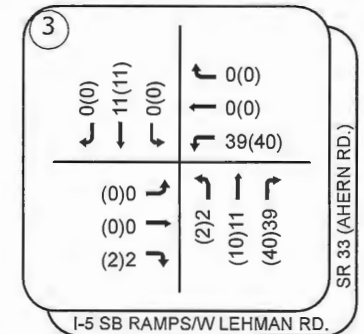
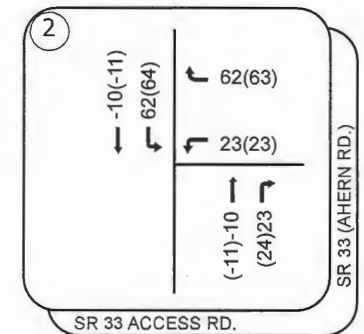
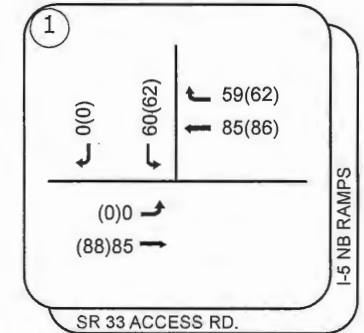
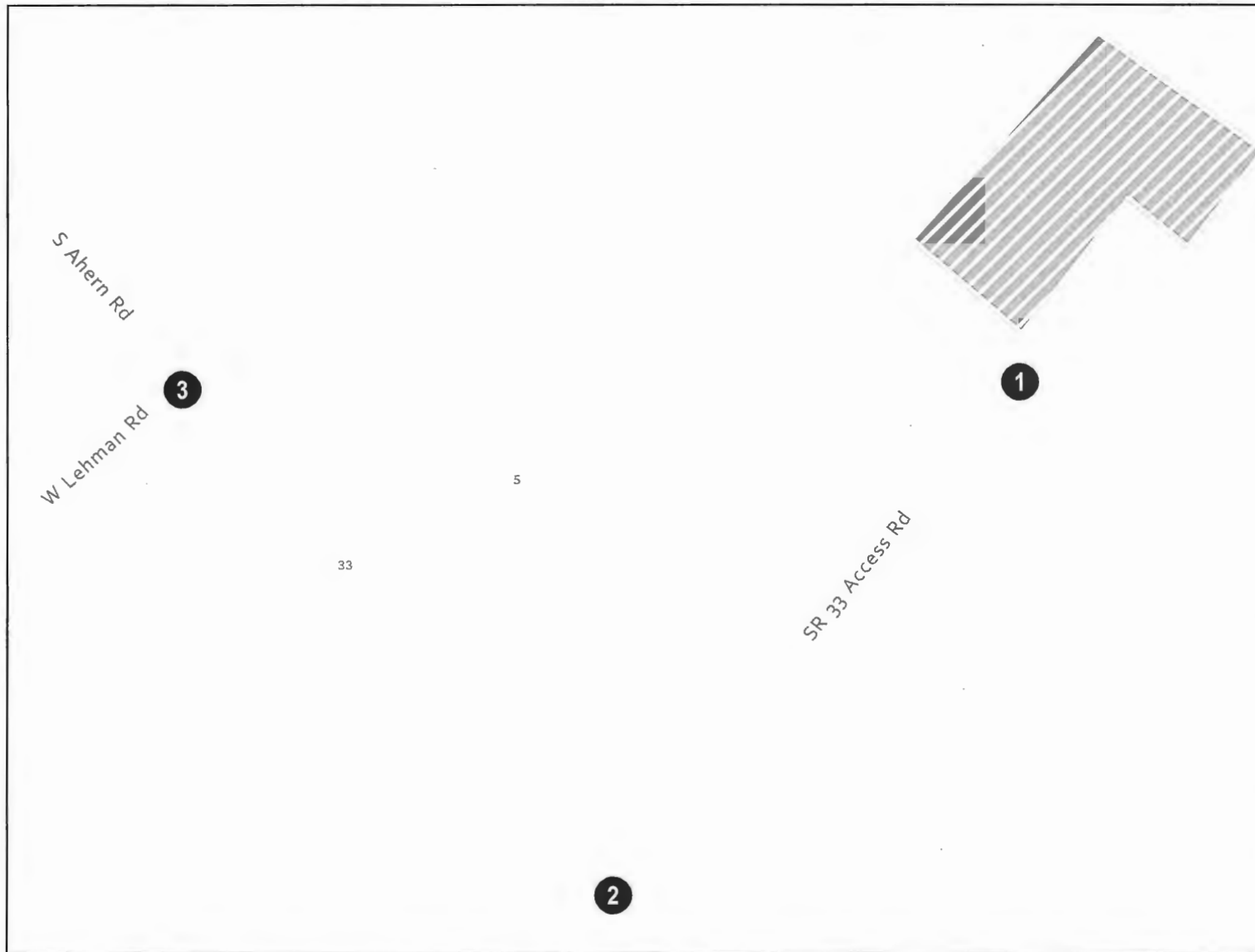
Project No. 12565809
Revision No. -
Date Dec 2021

PROJECT TRIP DISTRIBUTION

FIGURE 4.1

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Print date: 02 Dec 2021 - 15:52

Data source: Light Gray Base: Esri Community Maps Contributors, San Joaquin County GIS/Planning, San Joaquin County Public Works, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METINASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA.
Created by: pthornon



Legend

Study Intersections

Project Site

Roads

Paper Size ANSI A

0 125 250

US Feet

Map Projection: Lambert Conformal Conic

Horizontal Datum: North American 1983

Grid: NAD 1983 StatePlane California III FIPS 0403 Feet



COUNTY OF SAN JOAQUIN

SR 33/I-5

GAS STATION TIS

PROJECT ONLY

PEAK HOUR VOLUMES

(PROJECT ASSIGNMENT)

Project No. 12565809

Revision No. -

Date Dec 2021

FIGURE 4.2

5. Existing Plus Approved/Pending Conditions

The Existing Plus Approved/Pending (EPAP) conditions includes traffic related to the following recently conducted traffic studies:

- Final Traffic Impact Study Report for the proposed project at 29700 Ahern Road, 2017
 - Includes a truck stop, gas station, and restaurants in the northwest quadrant of the I-5/SR 33 interchange
- Traffic Impact Study for Proposed Sweet Corn Packing Facility, 2019
 - This project has been completed and has seasonal traffic (May-October) for employment (not included in Existing count data)

The peak hour traffic related to the above two approved/pending projects was superimposed on the Existing conditions traffic volume to obtain EPAP conditions. The following section presents LOS and queuing results calculated for the study locations under EPAP conditions.

Figure 5.1 presents the Existing Plus Approved/Pending Projects peak hour traffic volumes at the study intersections.

5.1 Intersection Operations

Table 5.1 presents the EPAP conditions intersection LOS analysis results, with delay measured in seconds per vehicle.

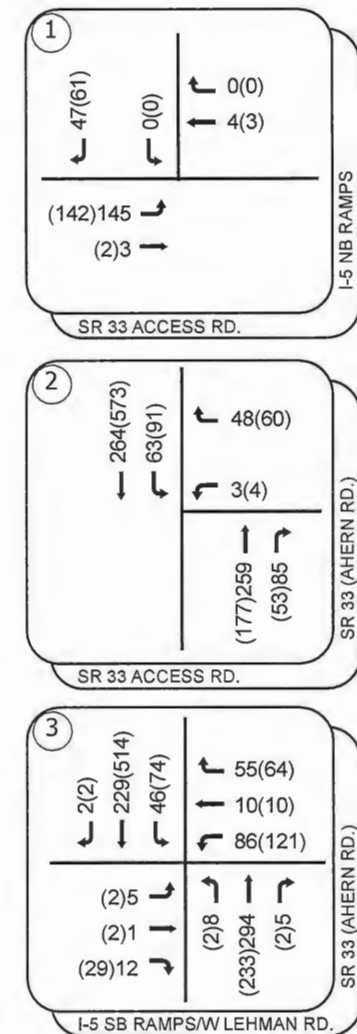
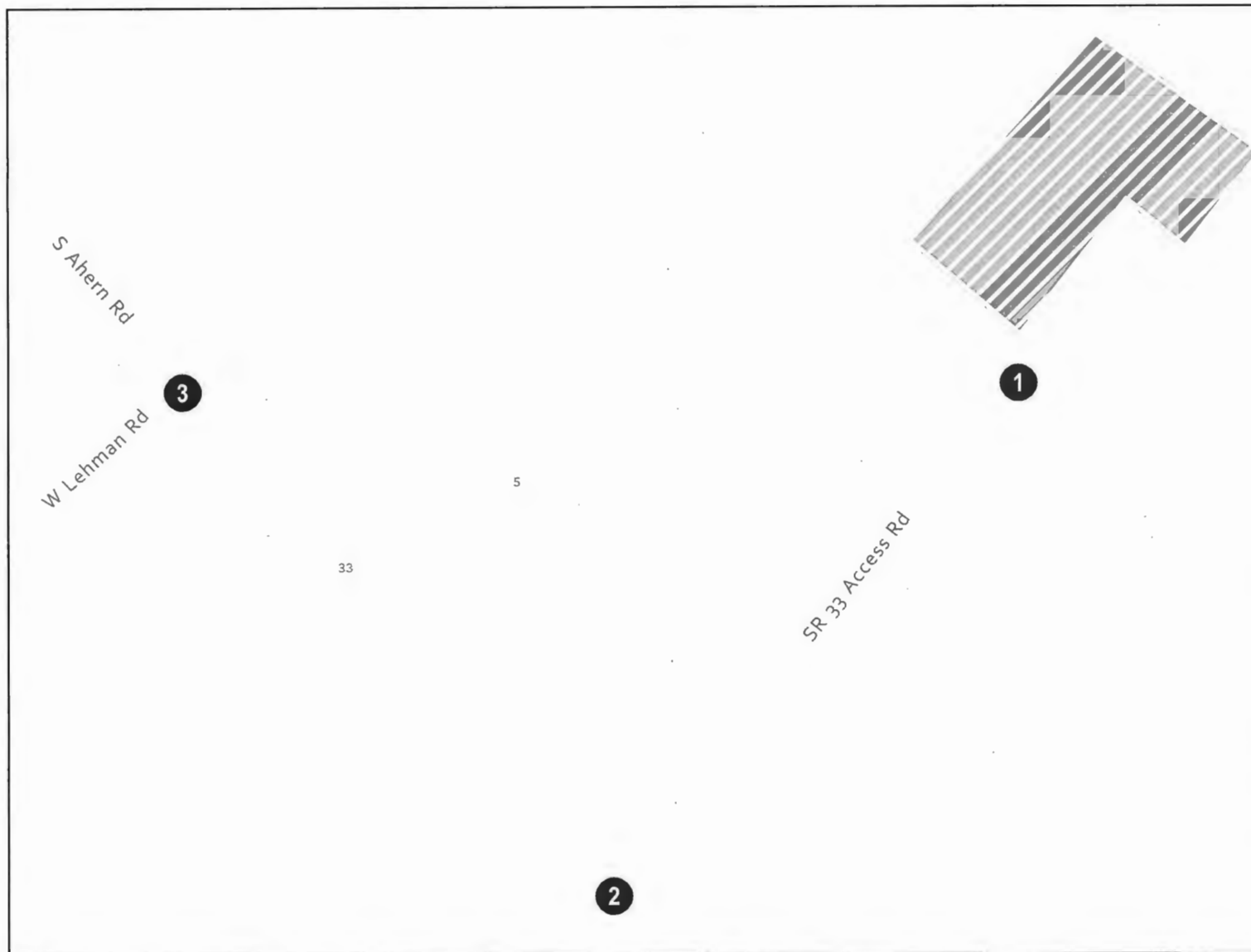
Table 5.1 Intersection LOS Results – Existing Plus Approved Pending Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	8.7	A	8.7	A
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	9.7	A	9.7	A
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	D	11.2	B	10.9	B
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	11.5	B	32.1	D

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modeled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.
4. **Bold** = Beyond LOS threshold

As presented in Table 5.1, all three intersections operate at acceptable LOS during the AM and PM peak hours under EPAP conditions.



Legend

- # Study Intersections
- Project Site
- Roads

Paper Size ANSI A
0 125 250
US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet



COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
EXISTING PLUS APPROVED/
PENDING PROJECTS (EPAP) PEAK
HOUR TRAFFIC VOLUMES

Project No. 12565809
Revision No. -
Date Jan 2022

FIGURE 5.1

5.2 Queuing

Table 5.2 presents the 95th percentile queue lengths for each lane under EPAP conditions.

Table 5.2 *Queuing by Lane – Existing Plus Approved Project Conditions*

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	6	0
			WB	TR	210	0	0
			SB	LR	1,364	52	54
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	84	78
			WB	TR	210	27	19
			SB	LR	1,364	0	0
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	WB	LR	996	56	55
			NB	TR	-	5	0
			SB	L	190	46	39
				T	1,087	0	0
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	37	46
			WB	LTR	1,421	66	87
			NB	LTR	1,027	90	86
			SB	L	180	48	62
				TR	-	83	190

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modeled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.

As presented in Table 5.2, all 95th percentile queue lengths are within the available storage lengths under EPAP conditions. Spillback beyond available storage is unlikely.

6. Existing Plus Approved/Pending Plus Project Conditions

Existing Plus Approved/Pending (EPAP) Plus Project conditions traffic volumes are calculated by superimposing Project-generated volumes on the EPAP conditions traffic volumes. The EPAP Plus Project condition is the analysis scenario in which traffic impacts associated with the proposed development are investigated in comparison to EPAP conditions. The following section presents LOS and queuing results calculated for the study locations under EPAP Plus Project conditions. Figure 6.1 presents the EPAP Plus Project peak hour traffic volumes at the study intersections.

6.1 Intersection Operations

Table 6.1 presents the EPAP Plus Project conditions intersection LOS analysis results.

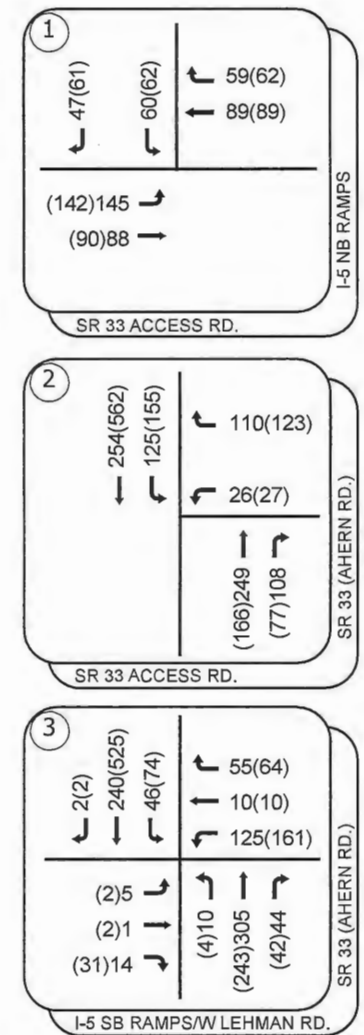
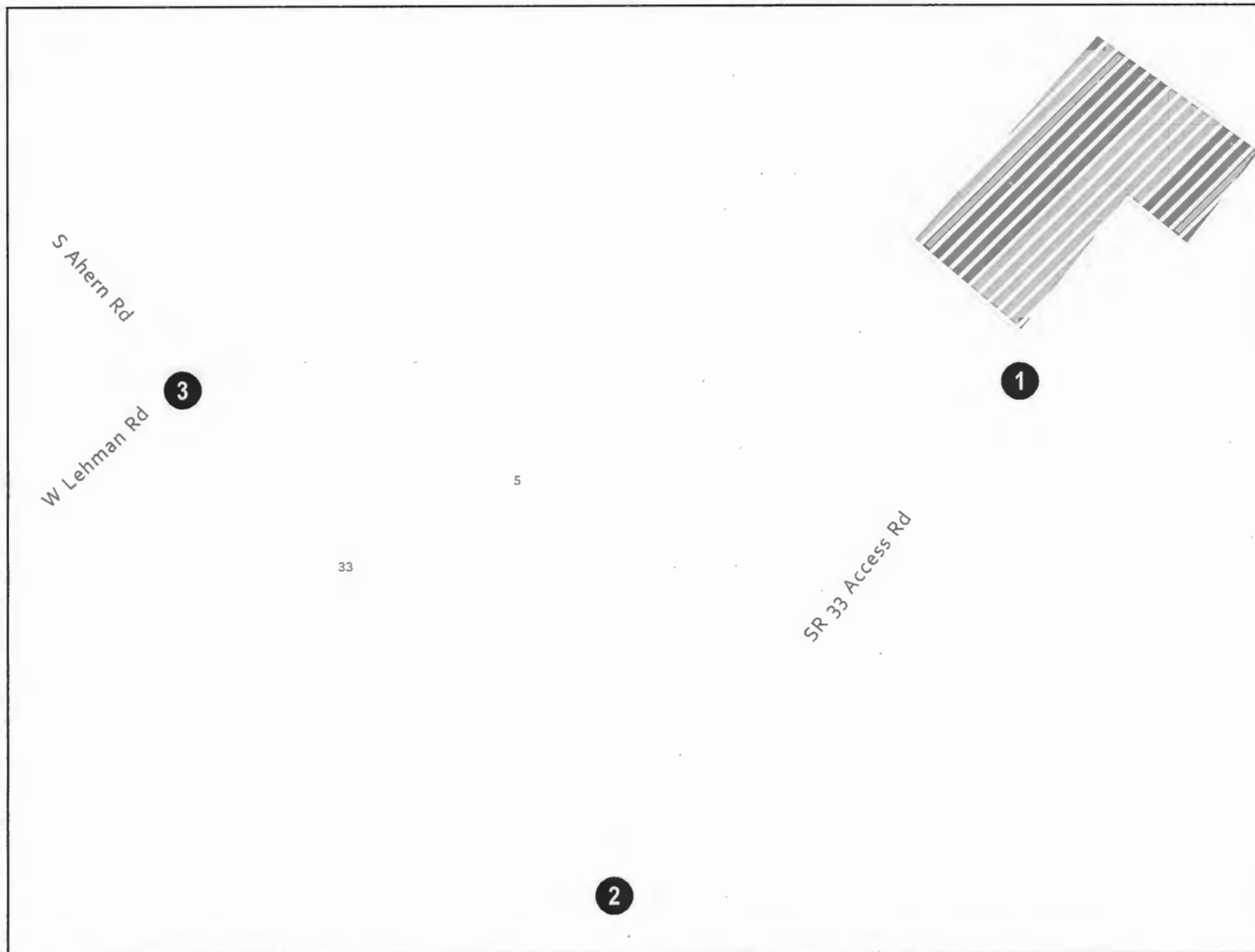
Table 6.1 Intersection LOS Results – Existing Plus Approved Pending Plus Project Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Signal Warrant	Delay	LOS	Signal Warrant
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	14.0	C	-	13.7	B	-
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	16.6	C	-	16.6	C	-
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	D	14.9	C	-	16.9	C	-
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	13.3	B	-	42.0	E	Yes

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, the intersection was modelled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.
4. **Bold** = Beyond LOS threshold

As presented in Table 6.1, the intersection of SR 33 (Ahern Road) & W. Lehman Road/I-5 SB Ramps is projected to operate at unacceptable LOS E in the PM peak hour, with the addition of Project traffic. This intersection does meet the warrant for a traffic signal during the PM peak hour. The signal warrant analyses are contained in Appendix E. The intersection would operate at LOS B and C during the AM and PM peak hours under EPAP Plus Project conditions with a signal. Alternatively, since the largest delays are experienced on the southbound approach, converting and restriping the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection would result in acceptable intersection operations at LOS C in the PM peak. With the recent all-way stop control installed, and the northbound approach having a single lane approaching, there is room to accommodate two through lanes southbound. Per the Highway Design Manual (HDM), the standard taper distance for a lane drop is the design speed (60 mph) x the lane width (assumed to be 12 feet), which results in a length of 720 feet. Based on Google imagery, the lane drop can be accommodated before the left turn pocket downstream. Additionally, actual travel speeds south of Intersection #3 are likely to be much lower than the posted speed due to the stop control.



Legend

Study Intersections

Project Site

Roads

Paper Size ANSI A

0 125 250

US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet



COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
EPAP PLUS PROJECT
PEAK HOUR TRAFFIC
VOLUMES

Project No. 12565809
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FIGURE 6.1

6.2 Queuing

Table 6.2 presents the 95th percentile queue lengths for each lane under EPAP Plus Project conditions.

Table 6.2 *Queuing by Lane – Existing Plus Approved Projects Plus Project Conditions*

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	69	62
			WB	TR	210	6	10
			SB	LR	1,364	79	72
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	111	108
			WB	TR	210	88	84
			SB	LR	1,364	21	20
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	WB	LR	996	82	94
			NB	TR	-	8	3
			SB	L	190	58	56
				T	1,087	0	0
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	39	47
			WB	LTR	1,421	75	94
			NB	LTR	1,027	98	109
			SB	L	180	50	14
				TR	-	83	277

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modeled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.

As presented in Table 6.2, all 95th percentile queue lengths are within the available storage lengths under EPAP Plus Project conditions. Spillback beyond available storage is unlikely. The evaluation of the queue lengths between the close spacing of Intersection #1 and the Project driveways (the westbound approach queue) presented queue lengths less than 100 feet, which does not present a significant adverse effect if the SR 33 Access Road is stop-controlled at the I-5 Off-ramp.

EPAP Plus Project "Employee Peak" and Existing Plus Project Sensitivity Test

Based on Existing conditions traffic counts, peak hour traffic related to the sweet corn packing facility, which occurs seasonally during non-commute peak hours (e.g., 5:00 a.m., 1:00 p.m.), was not included in the Existing conditions traffic data. For the analysis of the proposed Project, the peak hour of the adjacent street (commute peak) is considered in the analysis and does not coincide with the sweet corn facility's peak traffic. Both the commute peak and "employee" peak traffic related to the sweet corn packing facility employee shifts are available from the respective study. GHD tested a scenario with the proposed Project's traffic and the sweet corn employee peak traffic superimposed on the Existing volumes identified in this study for a conservative and supplementary analysis of Intersection #3 during this employee peak. The analysis results presented an LOS C at Intersection #3. Additionally, GHD also tested a scenario of Existing Plus Project traffic operations at Intersection #3 in the PM peak hour, in which the results were at LOS B.

7. Cumulative No Project Conditions

The Cumulative scenario refers to the analysis scenario which reflects future conditions represented by local and regional growth in approximately 20 years. Based on County direction, Cumulative No Project conditions will represent the scenario that considers the projected 20-Year development forecast, including the currently planned and approved developments, but without the proposed Project. Forecasts were estimated based on a one percent per year straight-line growth rate because the SJCOG regional travel demand model does not accurately reflect existing conditions in the project vicinity. The one percent per year growth rate, applied over 20 years, is also consistent with the cumulative assumptions in the aforementioned Ahern Road Traffic Impact Study for the truck stop facility, and for the Sweet Corn Packing Facility Traffic Impact Study.

Figure 7.1 presents the Cumulative No Project peak hour traffic volumes. The following section presents LOS and queuing results calculated for the study locations under Cumulative No Project conditions.

7.1 Intersection Operations

Table 7.1 presents the Cumulative No Project conditions intersection LOS analysis results, with delay measured in seconds per vehicle.

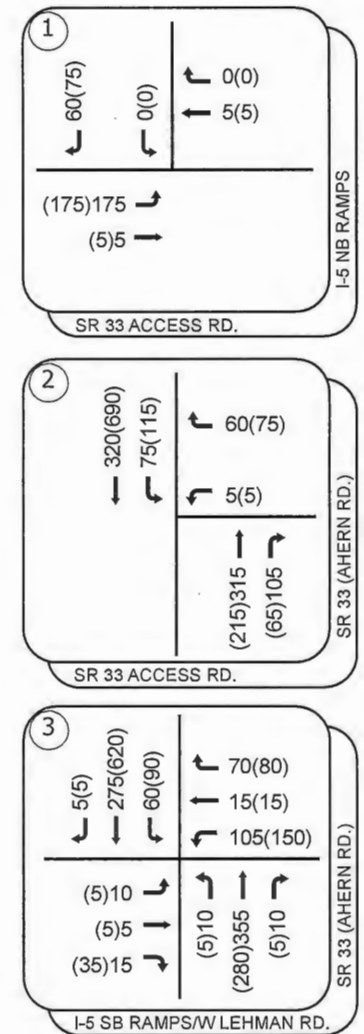
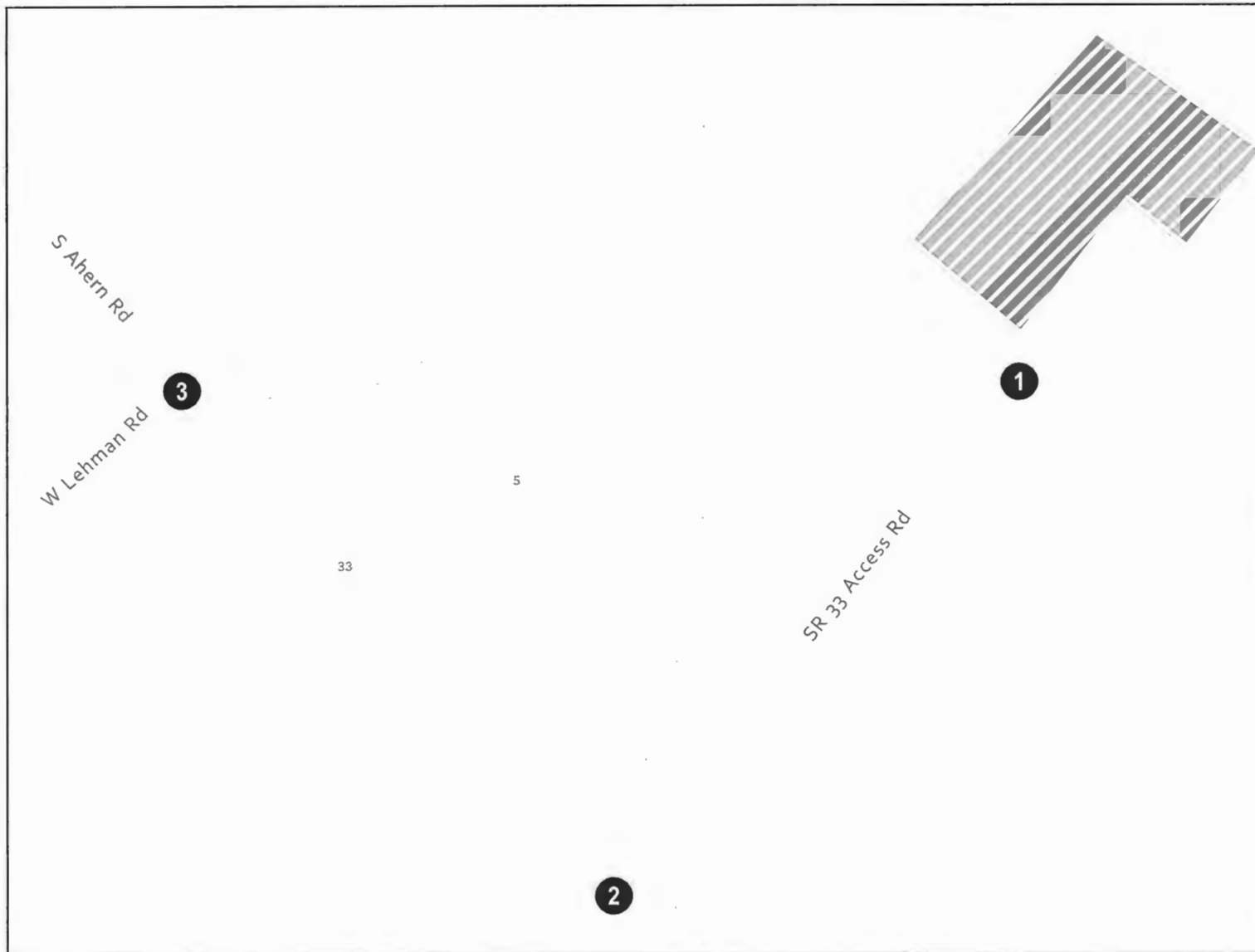
Table 7.1 Intersection LOS Results – Cumulative No Project Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Signal Warrant	Delay	LOS	Signal Warrant
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	8.8	A	-	8.8	A	-
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	10.1	B	-	10.1	B	-
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	D	12.4	B	-	13.5	B	-
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	14.6	B	-	81.6	F	Yes

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDDBT
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, the intersection was modeled 2 ways, 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled and evaluated against the LOS delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.
4. **Bold** = Beyond LOS threshold

As presented in Table 7.1, the intersection of SR 33 (Ahern Road) & W. Lehman Road/I-5 SB Ramps is projected to operate at unacceptable LOS F in the PM peak hour under cumulative no Project conditions.



Legend

- # Study Intersections
- ▨ Project Site
- Roads

Paper Size ANSI A
0 125 250
US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
CUMULATIVE NO PROJECT
PEAK HOUR TRAFFIC
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Date Jan 2022

FIGURE 7.1

7.2 Queuing

Table 7.2 presents the 95th percentile queue lengths for each lane under Cumulative No Project conditions.

Table 7.2 *Queuing by Lane – Cumulative No Project Conditions*

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	13	13
			WB	TR	210	0	0
			SB	LR	1,364	56	55
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	85	81
			WB	TR	210	31	36
			SB	LR	1,364	0	10
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	WB	LR	996	58	57
			NB	TR	-	15	6
			SB	L	190	60	51
				T	1,087	0	0
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	47	52
			WB	LTR	1,421	73	104
			NB	LTR	1,027	106	103
			SB	L	180	55	267
				TR	-	92	572

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modelled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.

As presented in Table 7.2, the southbound left turn pocket, on SR 33 approach, for the intersection of SR 33 (Ahern Road) & W. Lehman Road/I-5 SB Ramps exceeds capacity in the PM peak hour. This would adversely affect safety for oncoming traffic because the single-lane approach is in a rural setting with high speeds (55 mph posted speed limit). Installation of a traffic signal would reduce the queues to be within the storage capacity. Queue lengths on the I-5 Off-ramp (westbound approach) are not anticipated to have significant or adverse safety implications under Cumulative no Project conditions.

8. Cumulative Plus Project Conditions

Cumulative Plus Project conditions traffic volumes are calculated by superimposing Project-generated volumes on the Cumulative No Project conditions traffic volumes. The Cumulative Plus Project condition is the analysis scenario in which traffic impacts associated with the proposed development are investigated in comparison to Cumulative No Project conditions.

Figure 8.1 presents the Cumulative Plus Project peak hour traffic volumes at the study intersections. The following section presents LOS and queuing results calculated for the study locations under Cumulative Plus Project conditions.

8.1 Intersection Operations

Table 8.1 presents the Cumulative Plus Project conditions intersection LOS analysis results, with delay measured in seconds per vehicle.

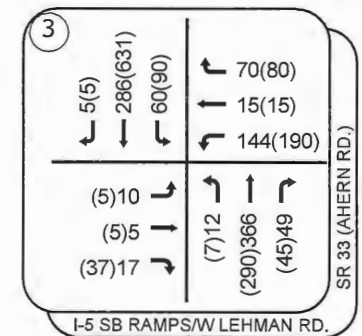
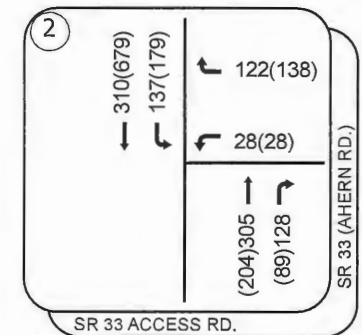
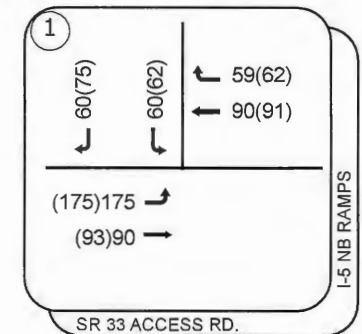
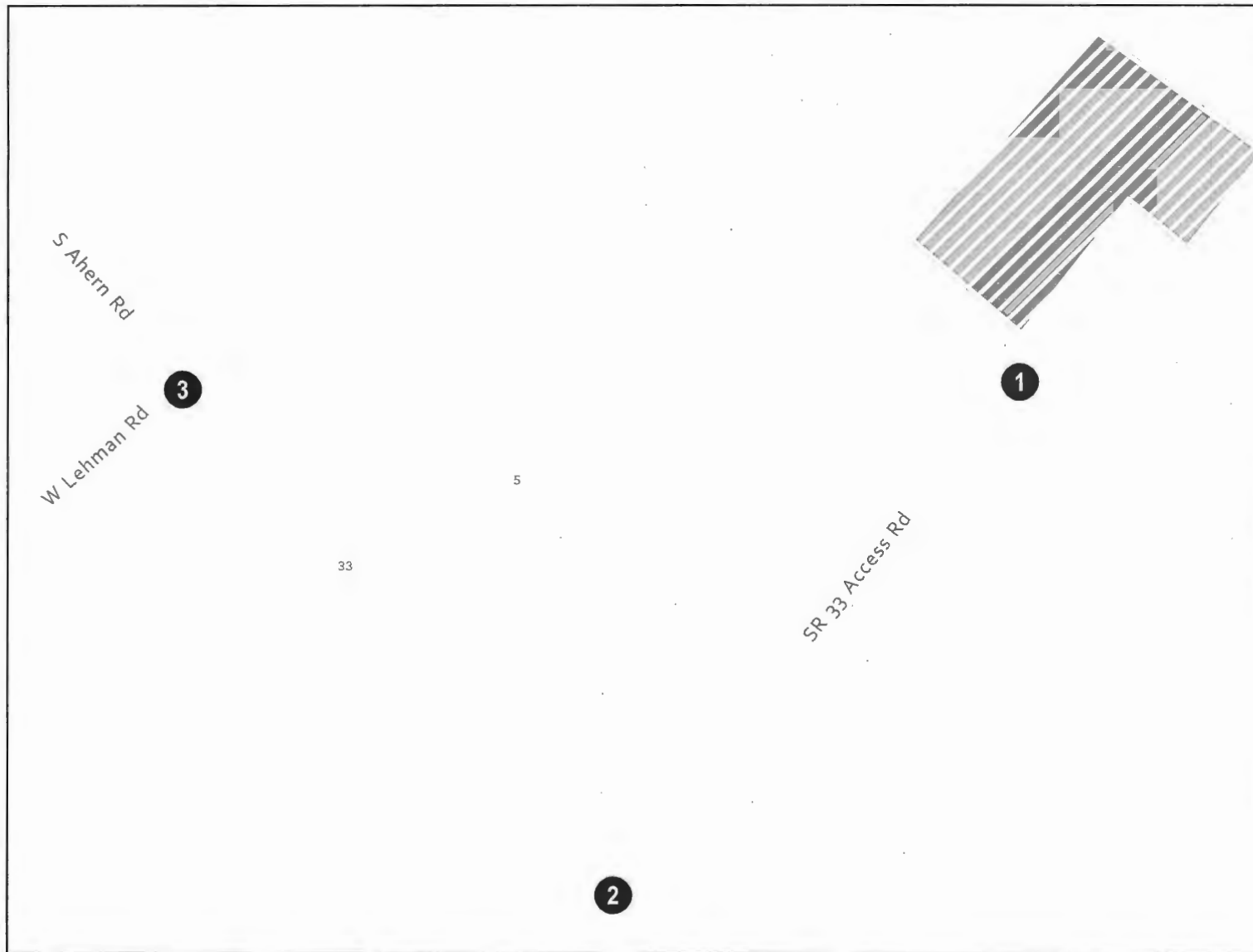
Table 8.1 Intersection LOS Results – Cumulative Plus Project Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Signal Warrant	Delay	LOS	Signal Warrant
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	15	C	-	14.8	B	-
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	D	18.6	C	-	19.1	C	-
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	D	18.2	C	-	29.8	D	-
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	17.9	C	-	99.4	F	Yes

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, the intersection was modeled 2 ways, 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled and evaluated against the LOS delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.
4. **Bold** = Beyond LOS threshold

As presented in Table 8.1, the intersection of SR 33 (Ahern Road) & W. Lehman Road/I-5 SB Ramps is projected to operate at unacceptable LOS F in the PM peak hour, with more delay than under the Cumulative no Project conditions. The intersection meets the warrant for a traffic signal during the PM peak hour. The signal warrant analyses are contained in Appendix E. The intersection would operate at LOS B and C during the AM and PM peak hours under Cumulative Plus Project conditions with a signal. Alternatively, and as described in Section 6.1, converting and restriping the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of Intersection #3 would result in acceptable intersection operations per County standards at LOS D in the PM peak.



Legend

Study Intersections

Project Site

Roads

Paper Size ANSI A

0 125 250

US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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COUNTY OF SAN JOAQUIN
SR 33/I-5
GAS STATION TIS
CUMULATIVE PLUS PROJECT
PEAK HOUR TRAFFIC
VOLUMES

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Date Jan 2022

FIGURE 8.1

8.2 Queuing

Table 8.2 presents the 95th percentile queue lengths for each lane under Cumulative Plus Project conditions.

Table 8.2 *Queuing by Lane – Cumulative Plus Project Conditions*

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
1a	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	69	70
			WB	TR	210	3	3
			SB	LR	1,364	100	87
1b	I-5 NB Ramps & SR 33 Access Rd	TWSC ³	EB	LT	996	121	107
			WB	TR	210	97	88
			SB	LR	1,364	17	15
2	SR 33 (Ahern Road) & SR 33 Access Rd	TWSC	WB	LR	996	106	120
			NB	TR	-	11	22
			SB	L	190	72	70
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC		T	1,087	0	0
			EB	LTR	-	41	52
			WB	LTR	1,421	96	116
			NB	LTR	1,027	136	135
			SB	L	180	59	314
			SB	TR	-	103	773

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Intersection 1 is currently uncontrolled. For compatibility with HCM 6 methodology, and comparison against the Plus Project condition, the intersection was modeled 2 ways: 1a has the I-5 Ramp stop controlled, 1b has the SR 33 Access Road stop-controlled. LOS was evaluated against the delay thresholds for TWSC. 1b is intersection 4 in the synchro reports.

As presented in Table 8.2, the southbound left turn pocket for the intersection of SR 33 (Ahern Road) & W. Lehman Road/I-5 SB Ramps is anticipated to exceed the storage capacity in the PM peak hour and worsen compared to the cumulative no Project conditions. This would adversely affect safety for approaching traffic because the single-lane approach is in a rural setting with high speeds (55 mph posted speed limit). Installation of a traffic signal would reduce the queues to be within the storage capacity. Alternatively, the option to convert the southbound approach to two through lanes with shared turning movements would result in queue lengths that would exceed the existing storage capacity of the shared through and left turn lane. GHD recommends to lengthen the southbound shared through and left turn lane to 735 feet, per HDM standards. Queue lengths on the I-5 Off-ramp (westbound approach) are not anticipated to have significant or adverse safety implications under Cumulative Plus Project conditions.

The evaluation of the queue lengths between the close spacing of Intersection #1 and the Project driveways (the westbound approach queue) presented queue lengths less than 100 feet which does not present a significant adverse effect if the SR 33 Access Road is stop-controlled at the I-5 Off-ramp.

9. Impact Determination and Mitigation Measures

9.1 Vehicle Miles traveled (VMT)

Based on OPR's Technical Advisory, and consistent with CEQA guidelines, commercial/retail developments less than 50,000 square feet may be presumed to have a less-than significant impact on VMT because they are local-serving. The proposed gas station and restaurant can be considered local-serving retail because they do not attract new regional trips and will serve existing local traffic. Thus, the proposed Project is assumed to have a less-than-significant impact on VMT.

9.2 Level of Service (LOS)

9.2.1 Determination of Substantial Adverse Effects

LOS is compared against County operational standards, wherein LOS D or better is the acceptable threshold for intersection operations.

Mitigation measures are recommended for locations where the following circumstances are observed:

- Where LOS is acceptable under the No Project condition, per the County's LOS standards, but deficient under the corresponding Plus Project condition
 - Mitigation measures are recommended that improve the LOS under the Plus Project condition to acceptable levels.
- Where LOS is deficient under the No Project condition, and average delay per vehicle at a study intersection increases under the corresponding Plus Project condition
 - Mitigation measures are recommended that improve the intersection overall average delay per vehicle under the Plus Project condition to the delay observed under the corresponding No Project condition, or better.

9.2.2 Recommended Improvements

At study intersections where the proposed Project creates an adverse effect on LOS, the adverse effect and recommended improvements are identified.

Intersection #3 – SR 33/Ahern Road/I-5 Southbound Ramps/W Lehman Road

This intersection is projected to operate at LOS E in the PM peak hour under EPAP Plus Project conditions, and LOS F under Cumulative no Project and Cumulative Plus Project conditions. The following improvement is proposed to mitigate the Project's adverse effect on traffic operations:

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection; or
- Install a traffic signal with northbound and southbound left turn lanes (as coordinated with Caltrans)

Table 9.1 presents the mitigated EPAP Plus Project conditions intersection LOS analysis results, improved with either the two through lane conversion southbound or a traffic signal. Table 9.2 presents the mitigated Cumulative Plus Project conditions, also improved with both options.

Table 9.1 Intersection LOS Results – EPAP Plus Project Mitigated Conditions

#	Intersection	Control Type ¹	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	12.7	B	17.1	C
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	Signal	D	15.8	B	26.1	C

1. AWSC = All Way Stop Control; southbound improved with two thru lanes.
2. Delay based on average of all approaches for Signal.

Table 9.2 Intersection LOS Results – Cumulative Plus Project Mitigated Conditions

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	D	16.6	C	28.9	D
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	Signal	D	19.0	B	30.4	C

1. AWSC = All Way Stop Control; southbound improved with two thru lanes.
2. Delay based on average of all approaches for Signal.

As presented above, either improvement of converting the southbound approach to have two through lanes or installing a traffic signal is anticipated to result in the intersection operating at an acceptable LOS under both EPAP Plus Project and Cumulative Plus Project conditions.

9.3 Queuing

95th percentile queue lengths were compared against available storage lengths and intersection spacing to determine if vehicle spillback is likely.

The Project is considered to have an adverse effect if Project traffic:

- Results in 95th percentile queue lengths that exceed the available storage including ramp spillback under the corresponding Plus Project condition, where the corresponding 95th percentile queue lengths were within available storage under the No Project condition.

At study intersections where the proposed Project creates a substantial adverse effect on vehicle queues, recommended improvements are presented.

Intersection #3 – SR 33/Ahern Road/I-5 Southbound Ramps/W Lehman Road

This intersection is projected to experience 95th percentile queues which exceed the capacity of the southbound left turn lane on SR 33 in the PM peak hour under Cumulative and Cumulative Plus Project conditions. The following improvement is proposed to mitigate the Project's adverse effect on traffic operations and safety:

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection, and extend the southbound shared through and left turn lane to be 735 feet; or
- Install a traffic signal with northbound and southbound left turn lanes (as coordinated with Caltrans)

Table 9.3 presents the 95th percentile queue lengths for each lane at Intersection #3 under mitigated EPAP Plus Project conditions with both the conversion to two lanes southbound and the installation of a traffic signal. Table 9.4 presents the 95th percentile queue lengths for each lane at Intersection #3 under mitigated Cumulative Plus Project conditions, with both the conversion to two lanes southbound and the installation of a traffic signal.

Table 9.3 Queuing by Lane – EPAP Plus Project Mitigated Conditions

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	35	49
			WB	LTR	1,421	86	100
			NB	LTR	1,027	113	118
			SB	LT	735	54	95
				TR	-	83	151
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	Signal	EB	LTR	-	36	48
			WB	LTR	1,421	114	140
			NB	L	200	29	19
				TR	1,027	124	135
			SB	L	530	55	83
				TR	-	95	188

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Left Turn Lane length for the southbound left is determined from Caltrans Highway Design Manual, Figure 405.2A and Table 405.2B; assumes 120 ft taper, a 60 mph design speed, and is based on cumulative storage estimates.

Table 9.4 Queuing by Lane – Cumulative Plus Project Mitigated Conditions

#	Intersection	Control Type ^{1,2}	Approach	Lane ¹	Available Storage Length (ft) ²	95th Percentile Queues (ft)	
						AM Peak Hour	PM Peak Hour
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	AWSC	EB	LTR	-	48	47
			WB	LTR	1,421	97	140
			NB	LTR	1,027	197	185
			SB	LT	735	60	322
				TR	-	97	378
3	SR 33 (Ahern Road) & W Lehman Rd / I-5 SB Ramps	Signal	EB	LTR	-	57	61
			WB	LTR	1,421	154	234
			NB	L	200	33	24
				TR	1,027	223	192
			SB	L	530	80	119
				TR	-	118	316

Notes:

1. L = left, R = right, T = through. Multiple letters indicate a lane that shares multiple movements.
2. "-" indicates a storage length greater than 1,500 feet.
3. Left Turn Lane length for the southbound left is determined from Caltrans Highway Design Manual, Figure 405.2A and Table 405.2B; assumes 120 ft taper and a 60 mph design speed.

As presented in Table 9.3 and Table 9.4, all 95th percentile queue lengths are within the anticipated or available storage lengths and the southbound left turn lane queue is mitigated at Intersection #3.

9.4 Fair Share Calculations

The addition of Project traffic would result in the operations of Intersection #3 - SR 33/Ahern Road/I-5 Southbound Ramps/W Lehman Road being degraded to LOS E under EPAP Plus Project conditions, compared to LOS D without the Project. Therefore, the Project is responsible for the improvement and no fair-share is calculated.

Cost Estimates

The typical cost to signalize an intersection with railroad preemption is approximately \$1,200,000 and is a preliminary estimate only. Cost could vary depending on length of signal mast arms, number of streetlights, coordination with Caltrans and encroachment permits, Intersection Control Evaluation (ICE) studies, coordination and preemption with the railroad crossing, and other site factors. The conversion to two lanes southbound at Intersection #3 would be less costly and no additional widening would be required, apart from accommodating the truck turning movements.

10. Conclusion

Based on the results of the traffic impact analysis, the following is a summary of our findings.

Existing Conditions

All three study intersections operate at LOS D or better during the peak hours. Existing 95th percentile queue lengths are within available storage capacities. Collision analysis presented only one collision at the I-5 Northbound ramps intersection; a multi-way stop control is not warranted.

Proposed Project Trip Generation

The Project is expected to generate 3,619 daily weekday, 288 AM peak, and 298 PM peak hour trips, external to the Project site.

Proposed Project Site Access & Truck Turns

Off-tracking analysis of STAA-sized trucks was conducted to evaluate all turns into and out of the Project site at the Project driveway, and at the three study intersections. At the intersection of I-5 Northbound Ramps & SR 33 Access Road, the existing pavement at the corner for the westbound right turn from the SR 33 Access Road to I-5 Northbound ramp is weathered and trucks may experience some off-tracking.

Also, at the intersection of I-5 Northbound Ramps & SR 33 Access Road, the existing configuration shows that the southbound left turn from the I-5 ramp towards the Project may have an impact on westbound traffic if a stop control is in placed on SR 33 Access Road approaches.

At the intersection of SR 33 & SR 33 Access Road, the existing configuration shows southbound left turning STAA vehicles onto the Access Road turning into the area where vehicles would be waiting at the stop bar on the Access Road, or conversely into the dirt beyond the shoulder in order to make the left turn. In addition, STAA vehicles off-track slightly on the corner when making a northbound right turn to the Access Road.

At the intersection of SR 33 & I-5 Southbound Ramps/W Lehman Road, the existing configuration shows that the northbound right turning STAA vehicles off-track slightly on the southeast corner of the intersection.

A preliminary evaluation of on-site circulation shows that STAA-sized trucks would not be able to easily turn around on-site, especially if the truck parking stalls are occupied. Trucks fueling on the very east end would also have trouble navigating through the parking area to exit.

Recommendations:

Intersection #1: SR 33 Access Road & I-5 Northbound Ramps

- Widen or improve shoulder for westbound right turns at the I-5 northbound ramp entryway.
- If stop control is to be placed on SR 33 Access Road, widen the shoulder on the south side of SR 33 Access Road and include a striped median for trucks to navigate the southbound left turn without encroaching into the opposing traffic lane. Note: Caltrans has recommended to install stop controls on the SR 33 Access Road approaches with the I-5 ramp uncontrolled⁵.

Intersection #2: SR 33 & SR 33 Access Road

- Widen a portion of the south side of SR 33 Access Road and southeast corner of the intersection to accommodate both left and right turns of STAA-sized trucks.
- Relocate the limit line 10 feet back from the edge of shoulder.

⁵ Source: Email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022.

Intersection #3: SR 33 at I-5 Southbound Ramps/W Lehman Road:

- Widen the southeast corner to accommodate STAA vehicles off-tracking slightly when making the northbound right turn.

On-Site Circulation:

- Reverse direction of entry for diesel pumps.
- Provide enough area for STAA-sized trucks to turn around in the back of the parking area.

Vehicle Miles Travelled

Based on OPR's Technical Advisory, and consistent with CEQA guidelines, commercial/retail developments less than 50,000 square feet may be presumed to have a less-than significant impact on VMT because they are local-serving. The proposed gas station and restaurant is considered local-serving retail because they will primarily serve existing local traffic do not attract new regional trips. Thus, the proposed Project is assumed to have a less-than-significant impact on VMT.

Existing Plus Approved/Pending Projects (EPAP) Conditions

The assumed approved developments used in the EPAP no Project scenario are known as the Ahern Truck Stop and Fueling Center, and the Sweet Corn Packing Facility. The proposed truck stop is located near the northeast quadrant on the SR 33/I-5 interchange, and the packing facility is located on West Lehman Road, west of the interchange.

Under EPAP no Project conditions, it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and LOS D in the AM and PM peak hours, respectively. The intersection control is currently an AWSC. The other two intersections are anticipated to operate acceptably as well. 95th percentile queue lengths are anticipated to be within available storage capacities.

EPAP Plus Project Conditions

Under EPAP Plus Project conditions, it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and **LOS E** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under both EPAP no Project and EPAP Plus Project conditions during the PM peak hour. The other two intersections are anticipated to operate acceptably. 95th percentile queue lengths are anticipated to be within available storage capacities.

Recommendation:

Intersection #3: SR 33/I-5 Southbound Ramps/Lehman Road

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection, and extend the southbound shared through and left turn lane to be 735 feet. This improvement would result in LOS B and C during the AM and PM peak hours; or
- Installation of a traffic signal would result in LOS B and C during the AM and PM peak hours
 - This would also require a left turn pocket on northbound SR 33 to facilitate protected left turns, which should be extended to 300 feet storage, and the southbound left turn lane should be extended to 530 feet storage.
- Either improvement would mitigate the LOS deficiency EPAP Plus Project conditions. Caltrans has stated that restriping cannot be allowed without widening the intersection to accommodate STAA off-tracking for all turn movements and that the traffic signal is preferred⁶.

⁶ Source: Email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022, and Caltrans Comment Letter for PA-2100077 dated March 23, 2022.

Cumulative Conditions

Under Cumulative conditions it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS B and **LOS F** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under cumulative conditions during the PM peak hour. The other two intersections are anticipated to operate acceptably.

Also, under Cumulative conditions, the queue lengths for the southbound left turn on SR 33, at the intersection of SR 33/I-5 Southbound Ramps/Lehman Road, are projected to exceed the storage capacity of the turn lane during the PM peak hour. Installing a traffic signal would mitigate this adverse effect and provide LOS C operations.

Cumulative Plus Project Conditions

Under Cumulative Plus Project conditions it is estimated that the intersection of SR 33/I-5 Southbound Ramps/Lehman Road would operate at LOS C and **LOS F** in the AM and PM peak hours, respectively. The intersection control is currently an AWSC, and this intersection meets the peak hour warrant for a traffic signal under both Cumulative no Project and Cumulative Plus Project conditions during the PM peak hour. The other two intersections are anticipated to operate acceptably.

Also, under Cumulative Plus Project conditions, the queue lengths for the southbound left turn on SR 33, at the intersection of SR 33/I-5 Southbound Ramps/Lehman Road, are projected to exceed the storage capacity of the turn lane during the PM peak hour. Installing a traffic signal would mitigate this adverse effect and provide LOS C operations. Alternatively, converting the southbound approach to two through lanes and extending the existing storage of the inside lane (left and through movements) would provide LOS C/D operations.

Recommendations:

Intersection #3: SR 33/I-5 Southbound Ramps/Lehman Road

- Convert and restripe the southbound approach to have two thru lanes with shared turning movements and a subsequent lane drop downstream of the intersection, and extend the southbound shared through and left turn lane to be 735 feet; or
- Install a traffic signal with a southbound left turn storage lane length of 530 feet and a northbound left turn lane with 300 feet storage length.
- Either improvement would mitigate the LOS deficiency and southbound left turn queues exceeding the storage capacity under Cumulative Plus Project conditions. Caltrans has stated that restriping cannot be allowed without widening the intersection to accommodate STAA off-tracking for all turn movements and that the traffic signal is preferred⁷.

⁷ Source: Email correspondence from Nicholas Fung (Caltrans District 10) to Jeffrey Levers (County of San Joaquin) dated March 30, 2022, and Caltrans Comment Letter for PA-2100077 dated March 23, 2022.