FINAL

ENVIRONMENTAL IMPACT REPORT

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARING HOUSE NUMBER: 2017112022

LSA

December 2018

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SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARING HOUSE NUMBER: 2017112022

Submitted to:

San Joaquin County
Public Works Department
1810 East Hazelton Avenue
Stockton, California 95205

Prepared by:

LSA
201 Creekside Ridge Court, Suite 250
Roseville, California 95678
(916) 772-7450

LSA Project No. MKT1704

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LIST OF ABBREVIATIONS AND ACRONYMS

AAQS	Ambient Air Quality Standards
AG	General Agriculture
AG-40	General Agriculture Minimum Parcel Size 40 Acres
AIA	Air Impact Assessment
ARB	California Air Resources Board
BMP	best management practices
BP-SRtS	Regional Bicycle, Pedestrian, and Safe Routes to School
BSA	Biological Study Area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
County	County of San Joaquin
CRHR	California Register of Historical Resources
CVFT	Central Valley Farmland Trust
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency

FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FSZ	Farmland Security Zone
FTA	Federal Transit Administration
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	greenhouse gas
I	Interstate
in/sec	inches per second
ISR	Indirect Source Rule
ITMM	Incidental Take Minimization Measures
L/I	Limited Industrial
L_{dn}	day-night average level
LE	Land Evaluation
L_{eq}	equivalent continuous noise level
LESA	Land Evaluation and Site Assessment
L_{max}	maximum noise level
LOS	level of service
LTS	less than significant impact
MBTA	Migratory Bird Treaty Act
NAAQS	National Air Quality Standards
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
O_3	ozone
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter (but larger than 2.5 microns)
PPV	peak particle velocity

proposed Project	Grant Line Road Corridor Project
RCMP	Regional Congestion Management Program
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
S	significant impact
SA	Site Assessment
SIP	State Implementation Plan
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation & Open Space Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SPCP	Spill Prevention Countermeasure Plan
SR	State Route
STAA	Surface Transportation Assistance Act
SU	significant and unavoidable impact
TAC	toxic air contaminants
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VdB	vibration velocity decibel(s)
VMT	vehicle miles traveled

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1.0 EXECUTIVE SUMMARY

This chapter describes the proposed Project that is evaluated in this Final EIR and includes a summary of the environmental review that has occurred for the Project area, issues raised during the public review of the NOP, unavoidable significant impacts identified as a result of the analysis contained in Chapter 4.0, and the alternatives to the proposed Project evaluated in Chapter 5.0 of this Final EIR. A summary of the impacts and mitigation measures contained in Chapter 4.0 of this Final EIR is also included in this chapter.

1.1 PROJECT UNDER REVIEW

The Project under review is a roadway bypass corridor approximately 1.65 miles in length south of Banta in the southwestern portion of San Joaquin County. The Project site begins at the intersection of Grant Line Road and Chabot Court; continues east, swinging south of the community of Banta; and terminates at the 11th Street/Bird Road intersection. Under the proposed Project, Grant Line Road would be aligned in a southerly direction toward 11th Street and South Bird Road, where it would connect via a two-lane roundabout. To facilitate access for the community north of 11th Street and east of Bird Street, a new roadway would connect Bird Road to Grant Line Road. Additionally, South Bird Road north of 11th Street would dead-end just before 11th Street. Grant Line Road would have two travel lanes in each direction, each 12 feet wide with a 14-foot-wide median. The median would be landscaped, or would accommodate 12-foot-wide left-turn lanes near intersections with local roadways. The existing at-grade railroad crossings at Banta Road and 6th Street would be closed and a new at-grade railroad crossing at the new four-lane Grant Line Road would be constructed. The objectives of the proposed Project include alleviation of existing traffic congestion and roadway safety improvements. The proposed Project would be designed to be consistent with County roadway design and roundabout requirements. The proposed Project is described in more detail in Chapter 3.0.

1.2 SUMMARY OF SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The proposed Project would substantially degrade the existing visual character/quality of the site based on changes of foreground views (from agricultural land to road right-of-way) of the site from existing sensitive receptors. Design and placement of the proposed Project has been considered and multiple alternatives have been considered but rejected (please see Chapter 5 Alternatives Analysis for detailed information). No mitigation measures exist that would reduce the significant impact the road would have on the existing visual character and quality of the area. As such, aesthetic impacts would be significant and unavoidable.

1.3 SUMMARY OF GROWTH-INDUCING IMPACTS

Population data records indicate that the community of Banta has a population of 324 residents (2000 Census) (San Joaquin County 2016) and unincorporated portions of San Joaquin County have a population of about 142,000 residents (2010 Census) (San Joaquin County 2016b). The proposed Project would not affect the net population of the site, as it is a roadway development. It should be noted that the 2035 San Joaquin County General Plan provides information on full build-out of land uses within the community of Banta and unincorporated areas; however, the proposed Project itself

would not induce such growth directly or indirectly (please see Chapter 6.2 Growth-Inducing Impacts for a detailed analysis). Based on the type of project this is, the proposed Project would not induce significant growth in the community of Banta or unincorporated portions of San Joaquin County. As such, because it would have no effect on population size and proposes no construction of building improvements, the Project would not have an impact on growth.

1.4 SUMMARY OF CUMULATIVE IMPACTS

Potential impacts to agricultural land, air quality, biological resources, and noise and vibration, would be reduced to a less than significant impact. Thus, the proposed Project would not have a cumulatively considerable impact on such resources. Because impacts to these resources are Project-specific, the cumulative condition of these resources would not be degraded by impacts associated with Project implementation.

The proposed Project would have a significant and unavoidable impact on aesthetic resources due to the irreversible and nonmitigatable changes to the visual character and quality of landscape within the foreground views of sensitive receptors. This significant and unavoidable impact to aesthetic resources would be confined to the Project area. As such, the proposed Project would not have a cumulatively considerable impact on aesthetic resources.

The proposed Project has the potential to result in a significant and unavoidable cumulative impact on one intersection under the Year 2035 plus Project condition. The Year 2035 cumulative condition discussed in this Final EIR includes the build out of land uses under the General Plan, including a 396-acre parcel near the Project, which will be developed with industrial and commercial uses. Under the Year 2035 plus Project condition the new two-lane roundabout at the New Roadway/11th Street intersection is anticipated to operate below acceptable LOS conditions (LOS E in the AM and LOS F in the PM peak hour). As such, a cumulative impact associated with traffic is anticipated to occur under the Year 2035 plus Project condition. There is a chance that the 396-acre parcel under the Year 2035 plus Project condition would not be built-out by 2035. If this is the case, the New Roadway/11th Street intersection would operate at acceptable LOS conditions under the Year 2035 plus Project conditions. A sensitivity analysis, was prepared for the Year 2035 plus Project without the 396-acre site, and is further discussed in Chapter 6.1 Cumulative Impacts of this Final EIR.

Section 6.1, Cumulative Impacts, provides a detailed discussion of cumulative impacts that would occur with implementation of the proposed Project.

1.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

The Initial Study (**Appendix B**) identifies no significant impacts to the following environmental resource topics:

- Cultural Resources
- Geology and Soils
- Greenhouse Gas (GHG) Emissions
- Hazards and Hazardous Wastes
- Hydrology and Water Quality

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Tribal Cultural Resources
- Utilities and Service Systems
- Mandatory Findings of Significance

1.6 SUMMARY OF ALTERNATIVES ANALYSIS

The following alternatives to the proposed Project are considered in this Final EIR:

- The proposed Project, **Alternative 3A Design,** includes the development of the Project on an alignment that connects East 11th Street to Grant Line Road south of Banta.

- The **No Project Alternative** assumes that the Project would not be developed within the short term.

- The **Alternative 4 Design** includes development of the Project on an alignment that bypasses Banta to the south and connects Grant Line Road to the east of Banta with Grant Line Road to the west of Banta.

The proposed Project (Alternative 3A Design) was determined to be the environmentally superior alternative. Both the Alternative 4 Design and the No Project Alternative were determined to be infeasible. Please refer to Chapter 5.0, Alternatives Analysis, for more discussion of these alternatives and other alternatives considered during development of this Final EIR.

1.7 POTENTIAL AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The potential area of controversy and issues to be resolved due to Project implementation are associated with Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Noise and Vibration, and Transportation and Circulation, which are addressed in Chapter 4.0.

1.8 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The Initial Study (**Appendix B**) identifies potentially significant impacts to the following environmental topics; however, these potential impacts could be mitigated to a less than significant level with the mitigation measures included in the Initial Study:

- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality

Table A: Summary of Impacts and Mitigation Measures includes the mitigation measures from the Initial Study as they relate to each environmental topic, as well as the mitigation measures included in Sections 4.4, Aesthetics; 4.5, Agricultural and Forestry Resources; 4.6, Air Quality; 4.7, Biological Resources; 4.8, Noise and Vibration; and 4.9, Transportation and Circulation, of this Final EIR. For a complete description of the potential impacts, refer to the Initial Study in **Appendix B**.

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
AESTHETICS			
EIR Impact Threshold AES-A. Public outreach has indicated that "close in" scenic vistas at sensitive receptors north of the Project would be impacted. Close in scenic vistas of existing agricultural use would be permanently blocked at some locations.	Significant and Unavoidable	Based on the location of the Project site and the design, no feasible mitigation would be available to reduce impacts of "close in" scenic vistas (agricultural lands) south of sensitive receptors. Specifically, implementation of barriers to reduce glare and noise impacts would result in obstruction of such "close in" scenic vistas.	Significant and Unavoidable
EIR Impact Threshold AES-B. The proposed project would not impact scenic resources within a state scenic highway.	No Impact	No mitigation measures are required.	No Impact
EIR Impact Threshold AES-C. Sensitive receptors would be exposed to a foreground visual change with implementation of a new road in an area occupied by agricultural productive land.	Significant and Unavoidable	Based on the location of the Project site and the design, no feasible mitigation would be available to reduce the degradation of foreground views to the sensitive receptors. Additionally, mitigation to reduce headlight intrusion on sensitive receptor properties and operational noise would further degrade foreground views for the sensitive receptors looking south.	Significant and Unavoidable
EIR Impact Threshold AES-D. Implementation of the Project would generate light from vehicle headlights that would intrude onto parcels where no light intrusion is currently occurring.	Potentially Significant	**Mitigation Measure AES-1**: The County of San Joaquin shall provide barriers at the edges of the parcel lines at Assessor's Parcel Number (APN) 25007002, 25007003, and 25008015 that are facing the new roadway. The barriers shall be made of materials that would block the headlight spillage of vehicles traveling along the new roadway. APNs 25012003 and 25008016 may also experience headlight spillage onto their parcels, and implementation of sound walls (as described in Section 4.8, Noise, of this Environmental Impact Report) to reduce noise impacts would also be effective in reducing light intrusion onto these properties.	Less than Significant with Mitigation Incorporated
AGRICULTURE AND FORESTRY RESOURCES			
EIR Impact Threshold AG-A. Implementation of the Project would result in the conversion of Important Farmland and land designated as General Agriculture per the San Joaquin County General Plan Land Use and Zoning Code to urbanized land.	Potentially Significant	**Mitigation Measure AG-1:** The San Joaquin County Public Works Department shall satisfy the mitigation requirements as set forth in the Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, where the San Joaquin County Public Works Department shall purchase land in equivalent condition to the Important Farmland that would be lost due to Project implementation at a 1:1 ratio. As such, the San Joaquin County Public Works Department shall purchase 27.2 acres of Agricultural Land equivalent in condition to the Important Farmland and existing designated Agricultural Land that would be saved in perpetuity in	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		the form of farmland conservation easement or other farmland conservation mechanism. The purchase shall be approved by the Agricultural Technical Advisory Committee and the County Board of Supervisors. The San Joaquin County Public Works Department also has the option to pay in-lieu fees in accordance with Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, and through approval of the Agricultural Technical Advisory Committee and the County Board of Supervisors. The in-lieu fees would equate to the value of the agricultural land that would be lost due to proposed Project implementation. The in-lieu fees would be administered to fulfill programmatic responsibilities, including coverage of acquiring interests in land and administering, monitoring, and enforcing the farmland conservation easement or other instrument designed to preserve the agricultural value of the land for farmland mitigation purposes. The San Joaquin County Public Works Department shall satisfy this mitigation measure prior to approval of the proposed Project.	
EIR Impact Threshold AG-B. The proposed Project would not conflict with existing agricultural zoning nor would it conflict with a Williamson Act Contract.	Less than Significant Impact	None.	Less than Significant Impact
EIR Impact Threshold AG-C. The proposed Project would not conflict with land zoned as forestland.	No Impact	None.	No Impact
EIR Impact Threshold AG-D. The proposed Project would not result in the loss of forestland.	No Impact	None.	No Impact
EIR Impact Threshold AG-E. The Project would result in the conversion of farmland to non-farmland uses.	Potential Impact	Implementation of **Mitigation Measure AG-1**.	Less than Significant with Mitigation Incorporated
AIR QUALITY			
EIR Impact Threshold AQ-A. The Project would not conflict with the applicable air quality plan.	No Impact	None.	No Impact

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
EIR Impact Threshold AQ-B. The proposed Project would potentially violate air quality standards or contribute substantially to an existing or projected air quality violation.	Potentially Significant	**Mitigation Measure AIR-1:** The Project contractor, on behalf of the San Joaquin County Public Works Department, shall prepare a Dust Control Plan for excavation and construction activities at the Project site pursuant to the requirements and regulations of the San Joaquin Valley Air Pollution Control District (SJVAPCD), including Regulation VIII. The Dust Control Plan would be developed prior to initiation of construction activities in coordination with the SJVAPCD. The SJVAPCD would maintain a copy of the Dust Control Plan for its records. The Project contractor shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of construction and maintenance activities at the Project site. The Dust Control Plan shall include, at a minimum, the following measures: • Apply water to unpaved surfaces and areas • Outfitting all personnel on site with appropriate respiratory equipment; the equipment must be properly fitted and personnel must be trained in its use; • Providing worker hygiene stations and training; • Prior to construction, provide information on causes, preventative measures, symptoms, and treatments for Valley Fever to individuals who could potentially be exposed through construction activities (i.e., construction workers); • The County shall continue outreach and coordination with the California Department of Public Health to ensure that the information regarding Valley Fever is readily available to nearby residents, schools, and businesses; • Use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas; • Limit or reduce vehicle speed on unpaved roads and traffic areas; • Maintain areas in a stabilized condition by restricting vehicle access; • Install wind barriers; • During high winds (the Dust Control Plan will specify a threshold for	Less Than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		implementing "high wind" measures), cease outdoor activities that disturb the soil; • Keep bulk materials sufficiently wet when handling • Store and handle materials in a three-sided structure; • When storing bulk materials, apply water to the surface or cover the storage pile with a tarp; • Haul trucks shall not be overloaded; • Cover haul trucks with a tarp or other suitable cover, or wet the top of the load enough to limit visible dust emission; • Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site; • Prevent trackout by installing a trackout control device; • Clean up trackout at least once per day; and, • Monitor dust-generating activities and implement appropriate measures for maximum dust control. **Mitigation Measure AIR-2:** The San Joaquin County Public Works Department shall include a condition of approval requiring the submission of an Air Impact Assessment (AIA) application before receiving final discretionary approval for the Project. The AIA application shall be submitted to the SJVAPCD on a form provided by the SJVAPCD and shall contain the following: • Applicant name and address; • Detailed Project description, including the items specified in SJVAPCD Rule 9510; • On-Site Emission Reduction Checklist; • Monitoring and Reporting Schedule; • Off-Site Fee Deferral Schedule; and • AIA.	

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
EIR Impact Threshold AQ-C. The Project could potentially result in a cumulatively considerable net increase of criteria air pollutants for which the region is nonattainment under an applicable federal or State ambient air quality standard.	Potentially significant	Implementation of **Mitigation Measures AIR-1** and **AIR-2**.	Less Than Significant with Mitigation Incorporated
EIR Impact Threshold AQ-D. The Project could expose sensitive receptors to substantial pollutant concentrations.	Potentially significant	Implementation of **Mitigation Measures AIR-1** and **AIR-2**.	Less Than Significant with Mitigation Incorporated
EIR Impact Threshold AQ-E. Some objectionable odors could be generated during Project construction; however, none would be generated during Project operation.	Less Than Significant Impact	None.	Less Than Significant Impact
BIOLOGICAL RESOURCES			
EIR Impact Threshold BIO-A. Implementation of the Project could 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 Wildlife (CDFW) or United States Fish and Wildlife Service.	Potentially significant	**Mitigation Measure BIO-1:** In accordance with the San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP) compensation strategy, impacts to habitat for special-status plant and animal species covered under the SJMSCP shall be mitigated through implementation of one or more of the following options, subject to approval by the SJCOG: • Payment of the appropriate mitigation fee; • Dedication of mitigation lands; • Purchase of approved mitigation bank credits; or • Proposing an alternative mitigation plan. **Mitigation Measure BIO-2:** Implementation of the following applicable SJMSCP Incidental Take Minimization Measures (ITMM) for Swainson's hawk, western burrowing owl, ground nesting or streamside/lakeside nesting birds (northern harrier, horned lark, western grebe, short-eared owl), birds nesting in isolated trees or outside of riparian areas (sharp-shinned Hawk, yellow warbler, loggerhead shrike), and all bats.	Less Than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		Swainson's Hawk. The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, that the hawks prefer for nesting) or removing the nest trees. If the Project Proponent elects to retain a nest tree the following ITMMs shall be implemented during construction activities to encourage tree retention: • If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. • If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied. These ITMMs are consistent with the provisions of the Migratory Bird Treaty Act (MBTA), as described in Section 5.2.3.1(g) of the SJMSCP. **Western Burrowing Owl.** The presence of ground squirrels and squirrel burrows is attractive to western burrowing owls. Western burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the Project site early in the planning process by employing one of the following practices: a. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches (36") above the ground. Vegetation should be retained until construction begins. Vegetation would discourage both ground squirrel and owl use of the site. b. Alternatively, if western burrowing owls are not known or suspected on the Project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders, the Project Proponent may disc or plow the entire	

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		Project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the Project site. Detailed descriptions of these methods are included in Appendix A, Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County, dated March 2000: i. **Anticoagulants**. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with Environmental Protection Agency (EPA) label standards and as directed by the County Agricultural Commissioner. ii. **Zinc Phosphide**. Establish bait stations with nontreated grain 5 to 7 calendar days in advance of rodenticide application, then apply zinc phosphide to bait stations. Rodenticides shall be used in compliance with EPA label standards and as directed by the County Agricultural Commissioner. iii. **Fumigants**. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include aluminum phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with EPA label standards and as directed by the San Joaquin County Agricultural Commissioner. iv. **Traps**. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations. If the measures described above were not attempted or were attempted but failed, and western burrowing owls are known to occupy the Project site, the following measures shall be implemented: c. During the nonbreeding season (September 1 through January 31)	

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		western burrowing owls occupying the Project site should be evicted from the Project site by passive relocation, as described in the California Department of Fish and Wildlife's (CDFW) (previously known as the California Department of Fish and Game) *Staff Report on Burrowing Owls* (1995). d. During the breeding season (February 1–August 31), occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee, (with the concurrence of the Permitting Agencies' representatives on the Advisory Committee) or a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1 (G) of the SJMSCP. **Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl).** A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing. These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP. **Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike).** A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until	

Table A: Summary of Impacts and Mitigation Measures

<table>
<tr><th>Environmental Impacts</th><th>Level of Significance Prior to Mitigation</th><th>Mitigation Measures</th><th>Level of Significance With Mitigation</th></tr>
<tr><td></td><td></td><td>
fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These ITTMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP.

<u>Bats (All).</u>

a. Prior to the nursery season indicated in the following table, Occupation Sites and Nursery Seasons for SJMSCP Covered Bats, nursery sites shall be sealed for these species.

Occupation Sites and Nursery Seasons for SJMSCP Covered Bats
<table>
<tr><th>Bat Species</th><th>Preferred Occupation Site</th><th>Nursery Season</th></tr>
<tr><td>Western mastiff bat</td><td>Cliff or rock crevice (usual), tree or snag (occasionally)</td><td>April–September</td></tr>
<tr><td>Western small-footed bat</td><td>Cave, adit, cliff, rock crevice, building</td><td>May–August</td></tr>
<tr><td>Long-eared myotis</td><td>Cave, adit, tree, snag</td><td>May–August</td></tr>
<tr><td>Fringed myotis</td><td>Cave, adit, cliff, rock crevice, building</td><td>May–August</td></tr>
<tr><td>Long-legged myotis</td><td>Cave, adit, cliff, rock crevice, tree, snag, building</td><td>May–August</td></tr>
<tr><td>Western red bat</td><td>Tree, snag, cave (occasionally)</td><td>May–August</td></tr>
<tr><td>Yuma myotis</td><td>Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag</td><td>May–August</td></tr>
<tr><td>Townsend’s big-eared bat</td><td>Cave, adit, cliff, rock crevice, structure, cistern, bridge</td><td>April–August</td></tr>
</table>
SJMSCP = San Joaquin County Multi-Species Habitat Conservation & Open Space Plan

b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the Project site. Alternatively, grating may be installed as described in Section 5.5.9 (E)(1) of the SJMSCP.

c. When colonial roosting sites in trees or structures must be removed,
</td><td></td></tr>
</table>

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2 of the SJMSCP.	
EIR Impact Threshold BIO-B. Implementation of the proposed Project would not have a substantial impact on riparian habitat or sensitive natural communities.	No Impact	None.	No Impact
EIR Impact Threshold BIO-C. The Project would not adversely affect federally protected wetlands.	Less Than Significant	None.	Less Than Significant
EIR Impact Threshold BIO-D. The proposed Project could potentially impact nesting birds.	Potential Impact	Implementation of **Mitigation Measure BIO-2**	Less Than Significant with Mitigation Incorporated
EIR Impact Threshold BIO-E. The proposed Project would not require the removal of trees subject to the County' tree preservation plan.	No Impact	None.	No Impact
EIR Impact Threshold BIO-F. The Project site is located within the SJMSCP and would be required to comply with the plan's provisions.	Potentially Significant	Implementation of **Mitigation Measures BIO-1** and **BIO-2**.	Less Than Significant with Mitigation Incorporated
CULTURAL RESOURCES			
Initial Study Impact Threshold A. There is potential for encountering buried archaeological cultural resources during Project construction.	Potentially Significant	**Mitigation Measure CULT-1:** Preconstruction Training. The Project Proponent shall retain a professional archaeologist to provide a pre-construction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant pre-contact and/or historic-period archaeological cultural resources within the Project area. The briefing shall discuss and describe the type and nature of archaeological artifacts or features that could be exposed during Project ground disturbance, as well as the procedures for temporarily halting activity in the vicinity and protecting the find until notification can occur and it can be assessed.	Less than Significant Impact with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		Mitigation Measure CULT-2: Should archaeological deposits be encountered during Project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology shall be contacted to assess the situation, consult with agencies as appropriate (as well as tribal descendants, if the find is pre-contact in nature) and make recommendations for the treatment of the discovery. If found to be significant (i.e., eligible for listing in the CRHR), the County shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis of archaeological deposits, further tribal consultation (as warranted), and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigation measures, a report documenting the methods, findings, and recommendations shall be prepared and submitted to the County for review. The final report shall be submitted to the CCIC at California State University, Stanislaus. Significant archaeological materials shall be submitted to an appropriate curation facility. The County shall inform its contractor(s) of the sensitivity of the study area for archaeological deposits and shall verify that the following directive has been included in the appropriate contract documents/specifications: "*The subsurface of the construction site may be sensitive for archaeological deposits. If archaeological deposits are encountered during Project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any archaeological materials. Prehistoric archaeological deposits can include shellfish remains; bones; flakes of, and tools made from, obsidian, chert, and basalt; and mortars and pestles. Historic-period archaeological deposits can include concentrations of historic glass, cans, ceramics, or other "trash," as well as structural*	

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		features including buried wells, foundations, or privies."	
Initial Study Impact Threshold B. The Project could potentially impact archaeological resources.	Potentially Significant	Implementation of **Mitigation Measures CULT-1** and **CULT-2**.	Less than Significant Impact with Mitigation Incorporated
Initial Study Impact Threshold C. No paleontological resources or unique geologic features are known to exist within or near the Project site. However, should undiscovered paleontological resources be found during Project construction, impacts to such resources could occur.	Potentially Significant	**Mitigation Measure CULT-5:** If paleontological resources are encountered during Project excavation and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be retained to evaluate the find and make recommendations for additional paleontological mitigation, which may include paleontological monitoring; collection of observed resources; preservation, stabilization, and identification of collected resources; curation of resources into a museum repository; and preparation of a final report documenting the monitoring methods and results to be submitted to the museum repository and the County.	Less than Significant Impact with Mitigation Incorporated
Initial Study Impact Threshold D. No human remains are known to exist within or near the proposed Project site. However, should undiscovered human remains be found during Project construction, impacts to such resources could occur.	Potentially Significant	**Mitigation Measure CULT-6: Treatment of Previously Unidentified Human Remains.** If human remains are encountered, these remains shall be treated in accordance with California Health and Safety Code §7050.5 and the appropriate procedures described above for archaeological deposits. The County shall inform its contractor(s) of the appropriate procedures for treatment of human remains by including the following directive in contract documents/specifications: *"If human remains are encountered during Project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native*	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods." Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the County for review, and the final report should be submitted to the CCIC.	
GEOLOGY AND SOILS			
Initial Study Impact Threshold A. The proposed Project would not expose people or structures to adverse affects from rupture of a known fault, strong seismic shaking, seismic-related ground failure, liquefaction, or landslides	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold B. Construction of the proposed Project could result in soils erosion.	Potentially Significant	Implementation of **Mitigation Measures HYDRO-1** and **HYDRO-2.**	Less than Significant with Mitigation Incorporated
Initial Study Impact Threshold C. The proposed Project is not anticipated to be on a geologic unit that is unstable.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold D. The proposed Project could be located on expansive soil, which could result in damage to the roadway infrastructure.	Potentially Significant	**Mitigation Measure GEO-1:** Any foundations and structure support for the project shall be designed to prevent uplift of the supported structures. **Mitigation Measure GEO-2:** Any foundation and structure support for the project shall be designed to resist forces exerted on the foundation due to soil volume changes, or shall be isolated from the expansive soil.	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
GREENHOUSE GAS EMISSIONS			
Initial Study Impact Threshold A. The proposed Project is not anticipated to generate greenhouse gases that may have a significant impact on the environment.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold B. The proposed Project would not conflict any applicable plan, policy or regulation of an agency adopted for the purpose of reducing emission of greenhouse gases.	No Impact	None.	No Impact
HAZARDS AND HAZARDOUS MATERIALS			
Initial Study Impact Threshold A. Use of hazardous materials (i.e., fuels, oils, fluids that are flammable) during construction activities.	Potentially Significant	**Mitigation Measure HAZ-1:** The Project would disturb more than 1 acre of soil and is subject to a Construction Permit from the State Water Board, which requires development of a Stormwater Pollution Prevention Plan and a Spill Prevention Countermeasure Plan (SPCP). Prior to commencement of construction activities, the construction contractor shall prepare an SPCP and submit the plan to San Joaquin County Environmental Health Department. The SPCP shall include information on the nature of all hazardous materials that would be used on-site during the construction period and information regarding proper handling of hazardous materials and clean-up procedures in the event of an accidental release. The SPCP shall be available on the Project site through the duration of the construction period. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCP.	Less than Significant with Mitigation Incorporated
Initial Study Impact Threshold B. Implementation of the Project would disrupt land that has been historically been in agricultural production. Therefore, construction has the potential of releasing and exposing hazardous materials to construction workers and nearby residents.	Potentially Significant	**Mitigation Measure HAZ-2:** A construction management plan shall be prepared that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The construction management plan shall include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency find, consultation with that agency, and protocols for further action. In such	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		instances, construction activities would cease until it is determined in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.	
Initial Study Impact Threshold C. The Project has the potential to emit or release hazardous materials within 0.25 mile of an existing school.	Potentially Significant	Implementation of **Mitigation Measures HAZ-1** and **HAZ-2**.	Less than Significant with Mitigation Incorporated
Initial Study Impact Threshold D. The Project is not located on a site included on a list of hazardous materials sites.	No Impact	None.	No Impact
Initial Study Impact Threshold E. The Project is not located within an airport land use plan nor is it located within 2 miles of a public airport or public use airport.	No Impact	None.	No Impact
Initial Study Impact Threshold F. The Project is not located within the vicinity of a private airstrip.	No Impact	None.	No Impact
Initial Study Impact Threshold G. The proposed Project, during construction, is not anticipated to physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold H. The Project is not anticipated to expose people or structures to loss due to wildland fires.	Less Than Significant	None	Less Than Significant
HYDROLOGY AND WATER QUALITY			
Initial Study Impact Threshold A. Implementation of the Project could cause temporary water quality impacts due to grading activities and removal of existing vegetation, which can cause increased erosion.	Potentially Significant	**Mitigation Measure HYDRO-1:** Construction site temporary BMPs and any subsequent permit requirements as they relate to construction activities for the project shall be prepared and implemented. This documentation shall include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the commencement of construction and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. These temporary BMPs shall be installed prior to any construction operations and shall be in place for the duration of	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		the contract. The removal of these BMPs along with site cleanup shall be the final construction operation procedures. **Mitigation Measure HYDRO-2:** To control stormwater and sedimentation during the construction and operational periods of the project, BMPs outlined in any authorizations or permits issued under the authority of the CWA shall be implemented. Stormwater control measures shall be designed to accommodate stormwater generated by the project. If such BMPs are ineffective, the San Joaquin County (Public Works) shall remedy the situation immediately, in consultation with the regulatory and resource agencies.	
Initial Study Impact Threshold B. The proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge.	No Impact	None.	No Impact
Initial Study Impact Threshold C. New impervious surfaces would be generated due to Project implementation. As such, drainage in the area would be altered compared to existing conditions.	Potentially Significant	**Mitigation Measure HYDRO-3:** Detention basins shall be incorporated into Project design such that post-construction conditions replicate the natural drainage patterns of the site. Since the Project will create new impervious surfaces, the basins will mitigate for increased runoff. **Mitigation Measure HYDRO-4:** Roadside ditches will be provided adjacent to the new roadway to convey drainage from the roadway to bioretention areas and detention basins and culvert pipes will be used to carry stormwater under roads where needed.	Less than Significant with Mitigation Incorporated
Initial Study Impact Threshold D. The Project has the potential to substantially alter the drainage pattern of the site.	Potentially Significant	Implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4**.	Less Than Significant with Mitigation Incorporated
Initial Study Impact Threshold E. The Project has the potential to create or contribute to runoff which could exceed the capacity of existing or planned stormwater drainage systems.	Potentially Significant	Implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4**.	Less Than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
Initial Study Impact Threshold F. The Project has the potential to substantially degrade water quality.	Potentially Significant	Implementation of **Mitigation Measures HYDRO-1, HYDRO-2, HYDRO-3** and **HYDRO-4**.	Less Than Significant with Mitigation Incorporated
Initial Study Impact Threshold G. The Project would not place housing within a 100-year flood plain.	No Impact	None.	No Impact
Initial Study Impact Threshold H. The Project would not place structures in a 100-year flood plain which would impede or redirect flood flows.	No Impact	None.	No Impact
Initial Study Impact Threshold I. The proposed Project is not anticipated to expose people or structures to flooding as a result from a levee or dam failure.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold J. The Project would not be inundated by a seiche, tsunami, or mudflow.	No Impact	None.	None.
LAND USE AND PLANNING			
Initial Study Impact Threshold A. The Project would not divide an established community.	No Impact	None.	No Impact
Initial Study Impact Threshold B. The proposed Project is located within the SJMSCP and has the potential to not be consistent with the plan's standards.	Potentially Significant	Implementation of **Mitigation Measures BIO-1** and **BIO-2** would result in Project compliance with the SJMSCP.	Less than Significant with Mitigation Incorporated
MINERAL RESOURCES			
Initial Study Impact Threshold A. The Project would not result in the loss of availability of a known mineral resource.	No Impact	None	No Impact
Initial Study Impact Threshold B. The Project would not result in the loss of availability of a locally important mineral resource recovery site.	No Impact	None	No Impact

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
NOISE			
EIR Impact Threshold NOI-A. Construction activities associated with the proposed Project would expose sensitive receptors to a temporary noise level increase. (The proposed Project would not exceed standards, as the County does not have construction noise exposure standards for sensitive receptors). Once completed, vehicle traffic along the new road would generate noise levels at nearby sensitive receptors that would exceed County noise level standards for residential uses.	Potentially Significant	**Mitigation Measure NOI-1:** Construction activities during the four phases of Project development shall occur during any day of the week from 6:00 a.m. to 9:00 p.m. per the County Code. If construction activities need to occur outside of this time frame, the construction contractor shall notify the County, and approval of extended construction activity hours shall be approved by the County Board of Supervisors. The County Board of Supervisors, if approval is granted, may require additional conditions of approval to ensure that construction activity noise levels are as low as possible. The construction contractor would be required to abide by such conditions of approval if the request of construction activity times is approved by the County Board of Supervisors. **Mitigation Measure NOI-2:** The following minimization measures shall be implemented during construction activities that occur within or closer than 50 feet of sensitive receptors: The Project construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest sensitive receptors. The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project construction areas. A temporary 10-foot-high perimeter wall shall be placed along the property lines such that the line of sight from ground-level construction equipment and sensitive receptors would be blocked. The construction barrier may be a 0.5-inch-thick plywood fence or another material that has a minimum Sound Transmission Class rating of 28. Prior to commencement of Project construction, staff from the County shall continue public relations with residents and businesses near the Project site by providing construction information pamphlets to those residents and businesses within 500 feet of the Project site. The construction pamphlets shall describe the type of construction activities that would occur, the	Less than Significant with Mitigation Incorporated

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
		duration of Project construction, indication that a temporary increase in ambient noise levels could occur during Project construction, and a phone number where concerned residents and business owners can call County staff if noise levels from construction activities become a nuisance. • **Mitigation Measure NOI-3:** As part of the proposed Project, noise barriers shall be constructed by the County at the property lines of sensitive receptors SR-1, SR-4, and SR-5. The barriers that are installed shall be constructed such that noise levels from adjacent transportation sources would be reduced by a minimum of 5 dBA L_{dn} and shall be installed prior to opening the proposed Project to traffic.	
EIR Impact Threshold NOI-B. The Project is not anticipated to expose persons to excessive ground-borne vibrations.	Less Than Significant	None.	Less Than Significant.
EIR Impact Threshold NOI-C. The Project has the potential to result in a substantial permanent increase in the ambient noise level.	Potentially Significant	Implementation of **Mitigation Measures NOI-1**, **NOI-2**, and **NOI-3.**	Less Than Significant with Mitigation Incorporated
EIR Impact Threshold NOI-D. The Project has the potential to result in a substantial temporary or periodic increase in ambient noise levels in the area.	Potentially Significant	Implementation of **Mitigation Measures NOI-1**, **NOI-2**, and **NOI-3.**	Less Than Significant with Mitigation Incorporated
EIR Impact Threshold NOI-E. The Project is not located in an airport land use plan nor within two miles of an airport where noise levels from such facilities would impact residents or construction workers.	No Impact	None.	No Impact
EIR Impact Threshold NOI-F. The Project is not located within two miles of a private airstrip where noise levels from such facilities would impact residents or construction workers.	No Impact	None	No Impact

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
POPULATION AND HOUSING			
Initial Study Impact Threshold A. The Project would not induce substantial population growth.	No Impact	None	No Impact
Initial Study Impact Threshold B. The Project would not displace substantial numbers of existing housing.	No Impact	None	No Impact
Initial Study Impact Threshold C. The Project would not displace substantial numbers of people.	No Impact	None	No Impact
PUBLIC SERVICES			
Initial Study Impact Threshold A. The Project would not result in adverse impacts or necessitate the development of new public service facilities for fire protection, police protection, schools, parks, or other public facilities.	No Impact	None	No Impact
RECREATION			
Initial Study Impact Threshold A. The Project would not increase the use of neighborhood or regional parks, nor would substantially deteriorate such existing facilities.	No Impact	None	No Impact
Initial Study Impact Threshold B. The Project does not include the development of recreational facilities that may have an adverse effect on the environment.	No Impact	None	No Impact
TRANSPORTATION/TRAFFIC			
EIR Impact Threshold TRANS-A. The Project is not anticipated to conflict with applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation systems under existing conditions.	Less Than Significant	None	Less Than Significant

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
EIR Impact Threshold TRANS-B. The Project is not anticipated to conflict with an applicable congestion management plan, level of service standards, travel demand measures, or other standards established by county congestion management agencies.	Less Than Significant	None.	Less Than Significant
EIR Impact Threshold TRANS-C. The Project would not result in a change in air traffic patterns.	No Impact	None.	No Impact
EIR Impact Threshold TRANS-D. The Project is not anticipated to substantially increase hazards due to a design feature or incompatible use.	Less Than Significant	None.	Less Than Significant
EIR Impact Threshold TRANS-E. The Project is not anticipated to result in inadequate emergency access during construction and once operational.	Less Than Significant	None.	Less Than Significant
EIR Impact Threshold TRANS-F. The Project is not anticipated to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.	Less Than Significant	None.	Less Than Significant
TRIBAL CULTURAL RESOURCES			
Initial Study Impact Threshold A. The Project has the potential to cause a substantial change in the significance of a tribal cultural resources	Potentially Significant	Implementation of **Mitigation Measures CULT-1** and **CULT-2**.	Less Than Significant with Mitigation Incorporated
UTILITIES AND SERVICE SYSTEMS			
Initial Study Impact Threshold A. The Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	No Impact	None.	No Impact
Initial Study Impact Threshold B. The Project would not require construction of new water or wastewater treatment or expansion of such existing facilities.	No Impact	None.	No Impact

Table A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance With Mitigation
Initial Study Impact Threshold C. The Project is not anticipated to require or result in the construction of new storm water drainage facilities the construction of which could cause a significant environmental effect.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold D. It is anticipated that sufficient water supplies will be available to serve the Project during construction.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold E. The wastewater treatment provider is anticipated to have adequate capacity to serve the Project's projected demand during construction and operation.	No Impact	None.	No Impact
Initial Study Impact Threshold F. The Project is anticipated to be adequately served by local landfills with sufficient permitted capacity.	Less Than Significant	None.	Less Than Significant
Initial Study Impact Threshold G. The Project is anticipated to comply with federal, State, and local statutes and regulations related to solid waste.	Less Than Significant	None.	Less Than Significant

AIA = Air Impact Assessment
APN = Assessor's Parcel Number
BMP = Best Management Practices
CCIC = Central California Information Center
CDFW = California Department of Fish and Wildlife
County = County of San Joaquin
CRHR = California Register of Historical Resources
CWA = Clean Water Act
dBA = A-weighted decibels
EIR = Environmental Impact Report
EPA = United States Environmental Protection Agency
ITMM = Incidental Take Minimization Measure L_{dn} = day-night average level
MBTA = Migratory Bird Treaty Act
MLD = Most Likely Descendant
proposed Project = Grant Line Road Corridor Project
SJVAPCD = San Joaquin Valley Air Pollution Control District
SJCOG = San Joaquin Council of Governments
SJMSCP = San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

2.1.1 Purpose of the Environmental Impact Report

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the potential environmental consequences of the Grant Line Road Corridor Project (proposed Project). The proposed Project includes the development of a new road alignment that would bypass[1] the community of Banta to the south. This Final EIR is designed to inform San Joaquin County decision-makers, responsible agencies, and the general public of the proposed Project and the potential physical impacts of Project approval. This Final EIR examines two build alternatives as well as the No Project Alternative. The main sections of this Final EIR discuss Alternative 3A design, while the No Project Alternative and Alternative 4 design are analyzed in Chapter 5.0, Alternatives Analysis.

The County of San Joaquin (County) is the Lead Agency for the environmental review of the proposed Project. This Final EIR does not provide a recommendation on the Project, but it has been prepared to inform County decision-makers, responsible and trustee agencies, and the general public about the proposed Project and the potential consequences of Project approval. This Final EIR also examines various alternatives to the proposed Project and recommends a set of mitigation measures to reduce or avoid potentially significant impacts.

2.1.2 EIR Scope

The County circulated a Notice of Preparation (NOP), notifying responsible and interested parties that an EIR would be prepared for the proposed Project and indicating the environmental topics anticipated to be addressed in this Final EIR. The NOP was published on November 9, 2017 (State Clearinghouse No. 2017112022), and the NOP comment period lasted from November 9, 2017, to December 8, 2017. The NOP was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the Project.

A total of 7 written comment letters regarding the NOP were received, from the following agencies and public: San Joaquin Council of Governments; the Public Utilities Commission; the Central Valley Regional Water Quality Control Board; the Native American Heritage Commission; Union Pacific; Joann Rocha Owens; and, Bob Harris. The NOP comments received and copies of each comment letter received are provided in **Appendix A: Notice of Preparation and Public Comments on Notice of Preparation**. Comments received during the circulation of the NOP were taken into account during the preparation of the EIR.

[1] The design of the proposed Project bypasses the main area of the community of Banta (the existing area along Grant Line Road between the eastern and western jurisdictional boundary of the community of Banta) and only skirts the southeastern portion of the jurisdictional boundary of the community of Banta. The jurisdictional boundary of the community of Banta is shown in Figures 2 and 3 below.

An Initial Study has been prepared for the proposed Project to determine the resource topics that would be examined in the EIR. Based on the preliminary analysis of the Initial Study (included as **Appendix B: Initial Study**), consultation with County staff, and review of comments received as part of the scoping process, the following environmental topics are addressed in separate sections of this Final EIR:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Noise
- Transportation and Circulation

2.1.3 Report Organization

This Final EIR is organized into the following chapters:

- *Chapter 1.0—Executive Summary*: Provides a summary of the proposed action, identifies potentially significant issues and concerns, summarizes the impacts that would result from implementation of the proposed Project, and describes mitigation measures recommended to reduce or avoid significant impacts. A summary overview of alternatives to the Project is also provided.
- *Chapter 2.0—Introduction*: Discusses the EIRs overall purpose and organization and describes the environmental review process.
- *Chapter 3.0—Project Description:* Provides a description of the Project site, Project objectives, required approval process, and the details of the Project.
- *Chapter 4.0—Setting, Impacts, and Mitigation Measures:* Describes the following for the resource topics being analyzed: existing conditions (setting), potential environmental impacts and their environmental significance, and mitigation measures recommended to mitigate identified impacts. Potential adverse impacts are identified by levels of significance, as follows: less than significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance of each impact is assigned one of these categories (i.e., LTS, S, or SU) before and after implementation of any recommended mitigation measure(s).
- *Chapter 5.0—Alternatives:* Provides an evaluation of alternatives to the proposed Project, including the No Project Alternative and Alternative 4.
- *Chapter 6.0—CEQA Required Assessment Conclusions:* Provides additional specifically required analyses of the proposed Project's growth-inducing effects, cumulative impacts, significant unavoidable impacts, significant irreversible changes, and effects found not to be significant.
- *Chapter 7.0—Report Preparation:* Identifies the preparers of the EIR, references used, and persons and organizations contacted.
- *Technical Appendices*: Appendices as described in the Table of Contents.

2.2 ENVIRONMENTAL REVIEW PROCESS

The Draft EIR was available for review by the public, agencies, and organizations for a 45-day comment period starting on **April 30, 2018** on the County's website (https://www.sjgov.org/department/pwk/projects/grant-line-road) and at the County Public Works Department (1810 East Hazelton Avenue, Stockton, California 95205). During this period, the public was invited to submit written comments to LSA on behalf of the County and attend a Public Hearing (to provide oral comments on the Project) on Tuesday June 12, 2018 at the San Joaquin County Board of Supervisors Chambers located at 44 North San Joaquin Street, Suite 627, Stockton, California 95202. The 45-day comment period ended on **June 13, 2018**; however, the County extended the public comment period another two weeks, until **June 29, 2018**, with notification of the extension on the County's website. During the public review period and review extension, the County received three comment letters; one public letter and two agency letters. Additionally, during the June 12th public hearing, four residents affected by the project provided oral comments to the San Joaquin Board of Supervisors. These oral comments were transcribed and are included as a fourth comment letter.

Following the close of the comment period on **June 29, 2018 at 5:00 p.m.**, a Response to Comments document was prepared to respond to all substantive comments received on the Draft EIR related to environmental issues surrounding the Project and has been included here as **Appendix C**. Where applicable, the Final EIR has been revised to clarify any errors, omissions, or misinterpretations of materials in the Draft ER in response to comments received during the public review period. Added text in this EIR is indicated by double underlined text. Text deleted from the EIR is shown in ~~strikeout~~. These revisions are summarized in Chapter 4 of **Appendix C**.

A Statement of Overriding Considerations and Findings of Fact on the EIR has been prepared and will be considered for approval by the San Joaquin County Board of Supervisors along with the Final EIR. The Findings documentation will explain the City's reasons for selecting the Project, or variation of the Project (e.g., as proposed in one of the Project Alternatives) and how each of the significant impacts identified in the Final EIR are addressed. The Statement of Overriding Consideration will explain why the County is willing to accept the significant and unavoidable impact pertaining to an aesthetic/visual resource.

The Response to Comments (**Appendix C-1**), Findings of Fact/Statement of Overriding Considerations, and Mitigation Monitoring and Report Program (**Appendix C-2**), and text revisions, together with the Draft EIR constitutes the Final EIR.

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3.0 PROJECT DESCRIPTION

This chapter provides a detailed description of the proposed Project. It describes the various components of the Project and construction details.

3.1 PROJECT OVERVIEW

The Project site is a 1.65-mile-long corridor south of the community of Banta in the southwestern portion of San Joaquin County. The Project site begins at the intersection of Grant Line Road and Chabot Court; continues east, swinging south of the community of Banta; and terminates at the 11th Street/Bird Road intersection. The Project boundary totals 75.7 acres in size. **Figure 1: Regional Location** and **Figure 2: Project Location** shows the location of the Project site on a regional and local scale, respectively.

The Grant Line Road corridor is experiencing large volumes of both vehicle and truck traffic due to the population growth in the City of Tracy and the industrial area in northeastern Tracy. The community of Banta is located near the middle of the corridor and is at the epicenter of an increase in traffic flows and accidents. Banta is a rural community consisting of residential uses, an elementary school, and commercial buildings. West of Banta, the City of Tracy has widened Grant Line Road to a six-lane thoroughfare. Grant Line Road is a two-lane road east of the City of Tracy's boundary near Chabot Court, extending to the intersection with 11th Street.

The objectives of the proposed Project are as follows:

- Alleviate congestion
- Improve safety

During Project development, four alternative roadway alignments were evaluated that address the Project goals. The County selected two build alternatives (Alternative 3A and Alternative 4) for detailed environmental review in this Final EIR (Alternative 3A design is analyzed in the main body of the EIR while Alternative 4 design is analyzed in Chapter 5 Alternatives Analysis).

Under the proposed Project, Grant Line Road would be aligned in a southerly direction toward 11th Street and South Bird Road, where it would connect via a two-lane roundabout. To facilitate access for the community north of 11th Street and east of Bird Street, a new roadway would connect Bird Road to Grant Line Road. Additionally, South Bird Road north of 11th Street would dead-end just before 11th Street. Grant Line Road would have two travel lanes in each direction, each 12 feet wide with a 14-foot-wide median. The median either would be landscaped or would accommodate 12-foot-wide left-turn lanes near intersections with local roadways. The existing at-grade railroad crossings at Banta Road and 6th Street would be closed and a new at-grade railroad crossing at the new four-lane Grant Line Road would be constructed.

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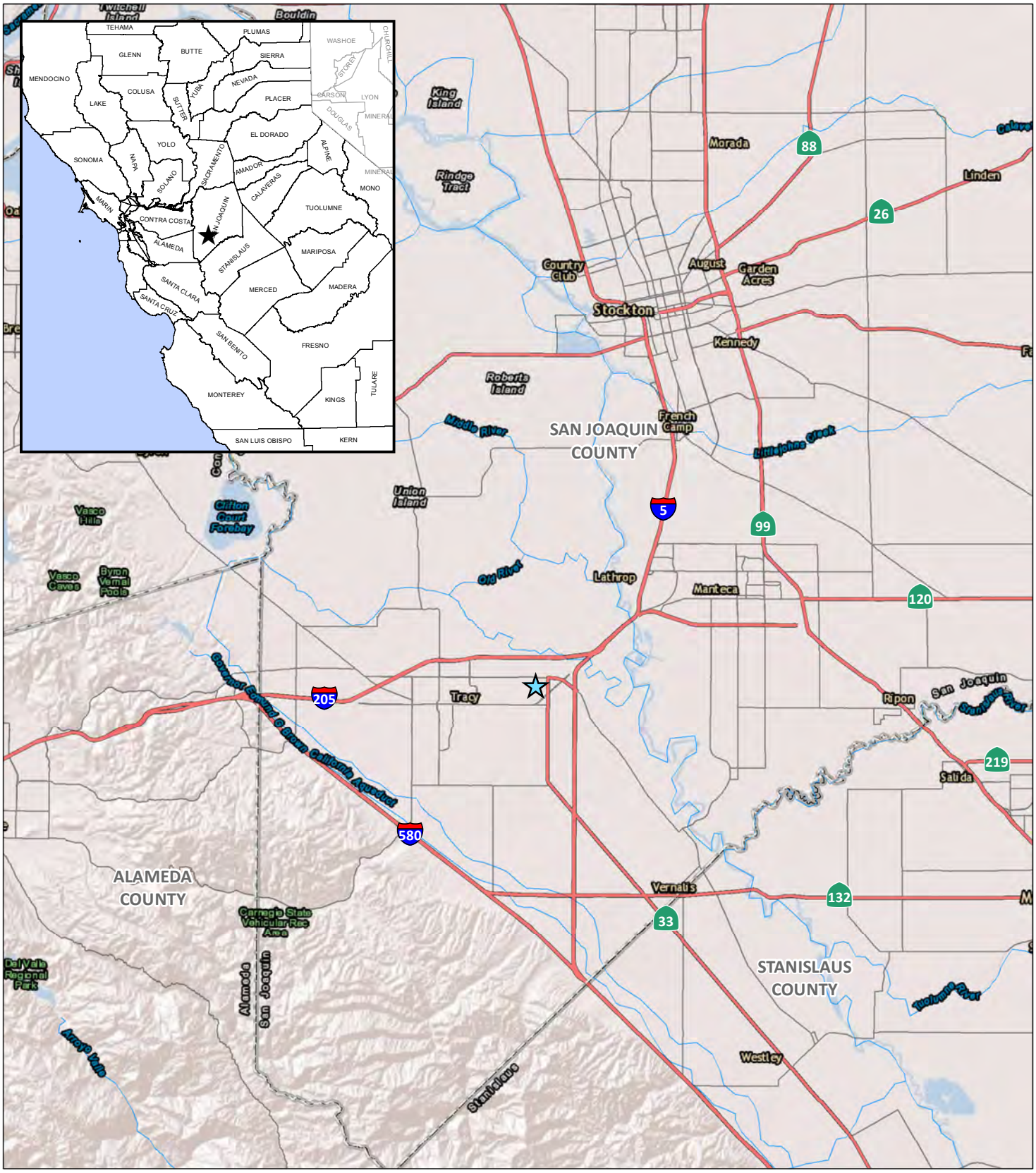

LSA

LEGEND

Project Location

FIGURE 1

N

0 2.5 5

Miles

SOURCE: ESRI Imagery (4/2008)

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Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Regional Location

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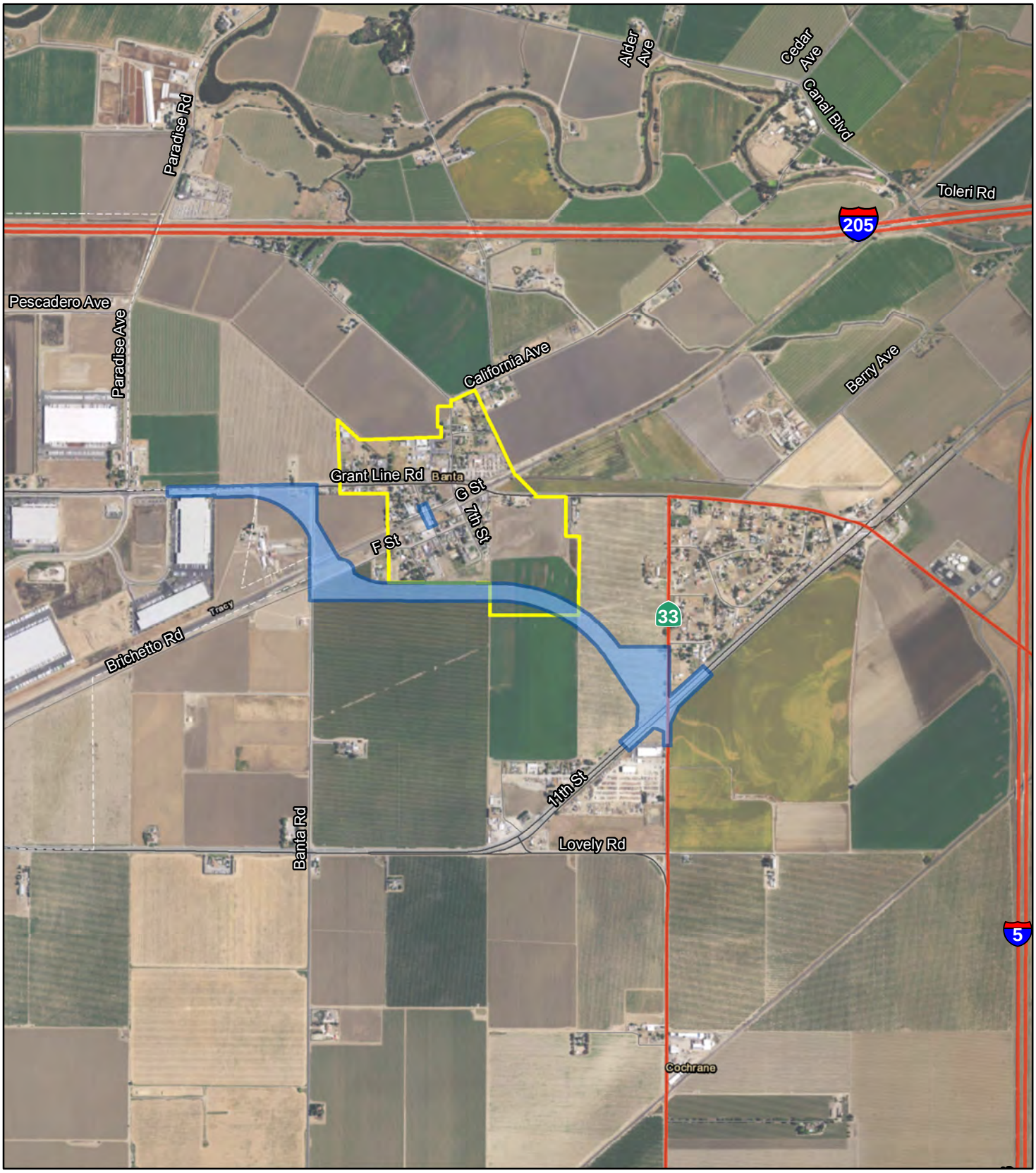

LSA

LEGEND

- Project Area (75.74 ac)
- Community of Banta Boundary Limits

N

0 1000 2000
FEET

SOURCE: Basemap - NAIP (06/2016); Mapping - LSA (12/2017)

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FIGURE 2

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Project Location

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The standard right-of-way width would be 110 feet for Grant Line Road, and existing roads such as Banta Road, Berry Avenue and Bird Road each have 60-foot existing rights-of-way that would need to be maintained. Additional right-of-way would be needed to accommodate outside turn lanes at intersections and for drainage basin locations. Other local roads would have a right-of-way of either 50 or 60 feet. **Figure 3: Project Design** shows the design of the proposed Project that is under consideration.

3.2 PROJECT CONSTRUCTION

The proposed Project would construct approximately 1.6 miles of new road (Grant Line Road) that would provide a bypass south of the community of Banta. Construction of the Project is anticipated to commence in May 2021 and would last approximately 13 months, with work occurring Monday through Friday (5 days per week). The proposed Project would consist of approximately 24 acres of construction area, and it is anticipated that approximately 4 acres of ground area would be disturbed on each day. The construction period would occur in four distinct back-to-back phases:

1. Grubbing/land clearing;
2. Grading/excavation;
3. Drainage/utilities/sub-grading; and
4. Paving.

It should be noted that there would be railroad-crossing closures/modifications associated with construction of the proposed Project. This work would occur during all of the construction phases. These four stages of construction activity are described below.

3.2.1 Construction Phase 1: Grubbing/Land Clearing

The grubbing/land clearing phase of construction is anticipated to last approximately 1 month. During this time, the agricultural land would be cleared and prepared for grading and excavation. It is anticipated that approximately 20 workers per day would accomplish this stage and approximately 1,500 cubic yards of material would be exported from off the Project site. During this phase of construction, the following construction equipment would be used: crawler tractors; excavators; tractors/loaders/backhoes; and on-highway dump trucks.

3.2.2 Construction Phase 2: Grading/Excavation

Once construction of Phase 1 is complete, the construction contractor would commence with Phase 2, grading/excavation. During this time, the land within the Project site would be graded and contoured to County roadway specifications in preparation for future construction activities. It is anticipated that this phase would last approximately 4 months, during which time approximately 20 workers per day would be on site. During grading and excavation, it is anticipated that approximately 1,500 cubic yards of material would be imported. During this phase of construction, the following construction equipment would be used: crawler tractors; excavators; graders; rollers; tractors/loaders/backhoes; on-highway dump trucks; and a concrete mix truck.

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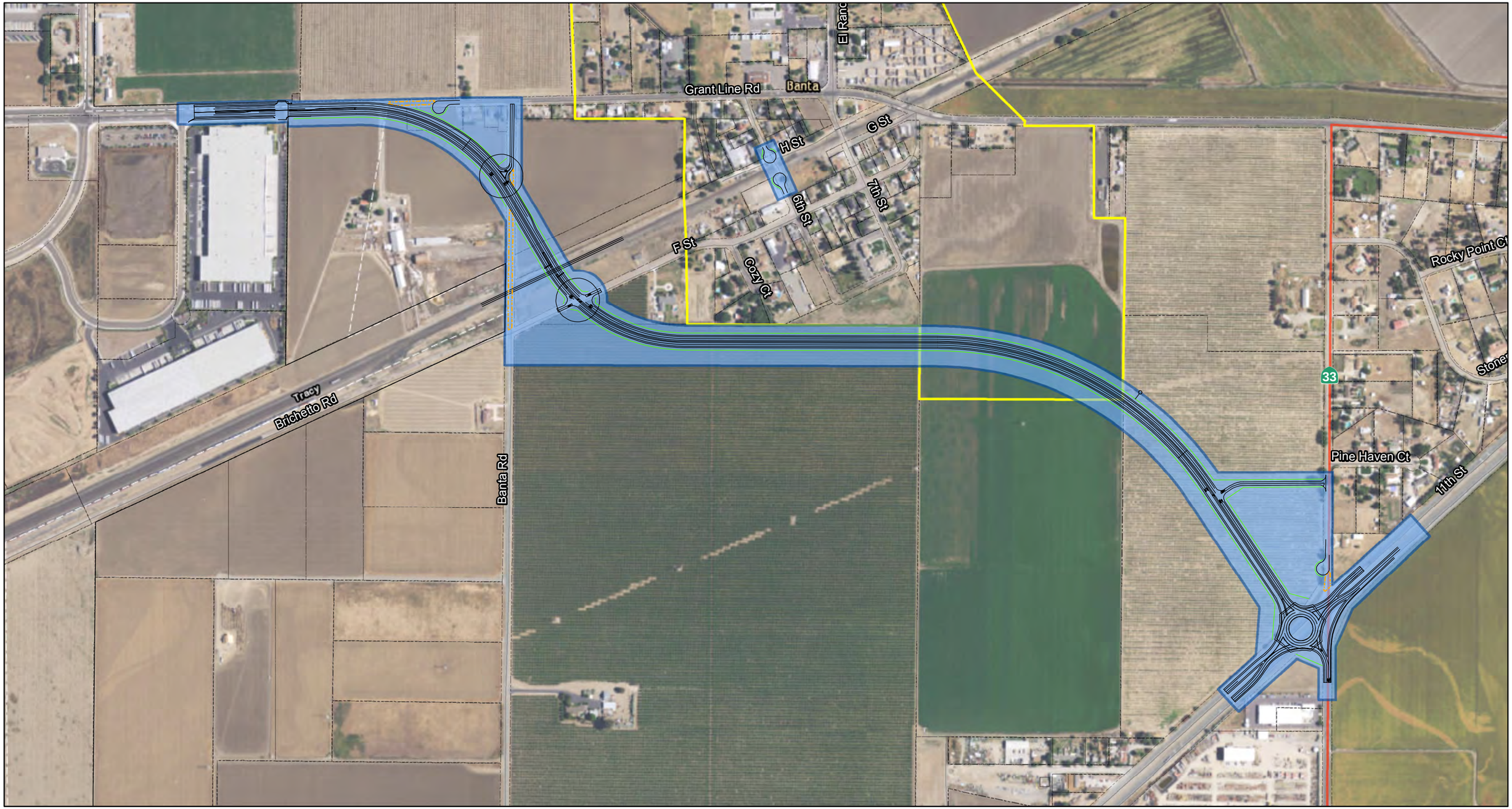

LSA

LEGEND

- Project Area (75.74 ac)
- Parcels
- Community of Banta Boundary Limits
- Design
- Pavement Removal
- Proposed Right-of-Way

0 300 600
FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (07/2017); Mapping - LSA (12/2017)

I:\MKT1704\GIS\Reports\EIR\Fig3_Proj_Design.mxd (12/19/2017)

FIGURE 3

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Project Design

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3.2.3 Construction Phase 3: Drainage/Utilities/Sub-Grading

This construction phase would commence after completion of the grading/excavation phase and would last approximately 5 months. This phase would consist of trenching/backfill operations for any and all drainage/utility facilities (irrigation sleeves, inlets, manholes, and pipes, etc.) that are disturbed during Project implementation. The proposed alignment would acquire parts of agricultural farmland, and placement of irrigation systems may need to be re-established. This activity phase also includes preparation, placement, and compaction of the sub-grade (i.e., the native material that lies underneath a constructed road). There are several locations along the proposed Project where this activity would take place, including several isolated cul-de-sacs as well as the new Grant Line Road. It is anticipated that this phase would require a maximum of 15 workers on a daily basis, and that approximately 200 cubic yards of material would be imported daily. During this phase of construction, the following construction equipment would be used: air compressor; concrete/industrial saw; excavators; forklift; generator set; graders; plate compactors; rollers; tractors/loaders/backhoes; on-highway dump truck; and a concrete mix truck.

3.2.4 Construction Phase 4: Paving

Upon completion of Phase 3, the paving phase of construction would commence. During Phase 4, paving of the new Grant Line Road would occur as well as any final construction activities that are needed to complete implementation of the Project. The paving phase would occur over a 3-month period and would require approximately 12 workers on a daily basis. This construction phase would include approximately 800 cubic yards of material imported on a daily basis. During this phase of construction, the following construction equipment would be used: grader; pavers; rollers; rubber-tired loader; piece of surfacing equipment; sweeper/scrubber; on-highway dump trucks; and a concrete mix truck.

3.3 REQUIRED PERMITS AND APPROVALS

It is anticipated that this Final EIR will provide environmental review for all discretionary approvals necessary for the proposed Project. A number of permits and approvals would be required before implementation of the proposed Project could proceed. The applicable permits for the proposed Project are shown in **Table B: Required Permits and Approvals.**

Table B: Required Permits and Approvals

Agency	Permit/Approval
County of San Joaquin	• Certification of Environmental Impact Report • Use Permits • Design Review • Encroachment Permits • Parcel Acquisition
California State Water Resources Control Board	401 Permit
United States Army Corps of Engineers	404 Permit
California Department of Fish and Wildlife	1602 Variety Permit
Union Pacific Railroad and/or Public Utilities Commission	(Document approval(s) needed for new crossing here)

Source: LSA (November 2017).

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4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental issue topic that has been identified for the proposed Project. Sections 4.4 through 4.9 of this chapter describe the environmental setting of the Project as it relates to each specific environmental topic evaluated in the EIR and the impacts that are expected to result from implementation of the proposed Project. Mitigation measures are proposed to reduce potential impacts where appropriate.

4.1 DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment (Public Resources Code, Section 21068). The *CEQA Guidelines* (California Code of Regulations, Title 14 Section 15000) direct that this determination be based on scientific and factual data. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are derived from Appendix G of the *CEQA Guidelines*.

4.2 TOPICS ADDRESSED IN THE ENVIRONMENTAL IMPACT REPORT

In an effort to provide the most comprehensive review and analysis, the County has elected to fully discuss potential environmental impacts in this chapter related to the following resource areas:

- Aesthetics (Section 4.4)
- Agriculture and Forestry Resources (Section 4.5)
- Air Quality (Section 4.6)
- Biological Resources (Section 4.7)
- Noise (Section 4.8)
- Transportation and Circulation (Section 4.9)

An Initial Study was completed for the proposed Project and is included in **Appendix B.** Based on analysis contained in the Initial Study, the County has determined that the proposed Project would not result in significant impacts to the following environmental topics: cultural resources, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, utilities and service systems, and mandatory findings of significance. Consequently, these issues are not examined in this chapter of the EIR, but are briefly summarized in Chapter 6.0, CEQA Required Assessment Conclusions, under Section 6.3, Effects Found Not to be Significant.

4.3 FORMAT OF ISSUE SECTIONS

The environmental issue section has four main subsections: (1) Setting; (2) Regulatory Framework; (3) Significance Criteria; and (4) Impacts and Mitigation Measures of the Proposed Project. Any identified significant impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Significant impacts and mitigation measures are numbered consecutively within each topic and begin with a shorthand abbreviation for the impact section (e.g., AES for Aesthetics). The following symbols are used for individual topics:

AES: Aesthetics

AG: Agriculture and Forestry Resources

AIR: Air Quality

BIO: Biological Resources

NOI: Noise

TRANS: Transportation and Circulation

The following notations are provided in the sections titled "Significance Level after Mitigation Implementation" for each Impact Threshold that is discussed under Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Noise, and Transportation and Circulation:

NI: No Impact

LTS: Less than Significant

S: Significant

SU: Significant and Unavoidable

4.4 AESTHETICS

This section describes existing aesthetic conditions within the Project site, identifies potentially significant impacts on such resources that may result from Project implementation, and recommends mitigation measures to reduce identified impacts to a less than significant level.

4.4.1 Existing Setting

The proposed Project is an approximately 2-mile-long corridor south of existing Grant Line Road in a rural portion of San Joaquin County. The Project site begins at the eastern Tracy/San Joaquin County line, travels south of the community of Banta, and continues just west of the Stoneridge Community, terminating at West 11th Street. The area around the Project site is characterized as a flat landscape with no distinctive topographical features and is dominated by agricultural fields interspersed with clumps of trees. As one travels eastbound along Grant Line Road approaching the community of Banta, the agricultural landscape gives way to a more urbanized character, with residential units and commercial businesses located to the north and south of the roadway. Approaching the eastern side of Banta, the character of the landscape changes back to agricultural fields with a number of rural residential units (associated with the agricultural uses). The landscape to the north of the easternmost portion of the proposed Project is more urbanized and includes the Stoneridge Community.

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Given the lack of distinctive topographical features in the Project vicinity, the Project site is not located in an area with scenic vistas. There are no heritage trees, historic buildings, or unique landforms in the Project area that would be considered scenic resources.

Visual resources within the Project vicinity are limited to agricultural fields. As described in the San Joaquin County General Plan, "the natural, rural, and agricultural aspects of the County, as experienced through views of the Delta and the agriculturally rich valley floor, as well, as panoramic views of the Coastal ranges and the Sierra, when visibility conditions permit, form the primary scenic resources within San Joaquin County." However, the Plan also acknowledges that "most scenic views are limited to near- and medium-range as provided by viewpoints such as public recreation areas and roadways" due to San Joaquin County's generally flat terrain and often poor air quality. No scenic highways/routes designated by the State or the County near the Project site.

4.4.2 Regulatory Framework

4.4.2.1 Federal

There are no federal regulations related to aesthetics that would apply to the Project.

4.4.2.2 State

California Department of Transportation Scenic Highway Program. The California Scenic Highway Program was created by the State Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The California Scenic Highway System is a list of highways that are either eligible for designation as scenic highways or have been designated as such.

4.4.2.3 Local

San Joaquin County General Plan. The 2035 San Joaquin County General Plan Natural and Cultural Resources Element identifies scenic resources in San Joaquin County and establishes guiding policies for the protection and preservation of scenic resources in San Joaquin County.

The General Plan Natural and Cultural Resources Element goals and policies that are pertinent to scenic resources include:

- **Goal NCR-1:** To protect and enhance the unique scenic features of San Joaquin County.
    - **NCR-7.1 Scenic Roadways:** The County shall protect the visual character of designated scenic roadways.
    - **NCR-7.2 View from Public Lands and Roadways:** The County shall ensure that views of waterways, hilltops, and oak groves from public land and public roadways are protected and public access is provided to them whenever possible.
    - **NCR-7.3 Designate Scenic Routes:** The County shall preserve scenic views from roadways by designating scenic routes based on the following criteria:
        - Leads to a recreational area;
        - Provides a representative sampling of the scenic diversity within the County;

- Exhibits unusual natural or human-made features of interest;
- Provides opportunities to view activities outside the normal routine of most people;
- Provides a route for people to view the Delta waterways; and
- Links two scenic routes or connects with scenic routes of cities or other counties.

- **NCR-7.4 Visually Complementary Development:** The County shall require new development adjacent to scenic resources to be sited and designed to visually complement those resources, except in MR-Z designated areas.
- **NCR-7.5 Require Landscape Plans:** The County shall require landscape plans for new development along State or county-designated scenic routes.
- **NCR-7.6 Preservation of Ridgelines and Hill Tops:** The County shall ensure that ridgelines and major hills tops remain undeveloped.
- **NCR-7.7 Reducing Light Pollution:** The County shall encourage Project designs, lighting configurations, and operational practices that reduce light pollution and preserve views of the night sky.
- **NCR-7.8 Underground Utility Lines:** The County shall require all new electric and communication distribution facilities adjacent to scenic routes to be placed underground whenever feasible. Where overhead utility lines are unavoidable, every effort should be made to reduce the visual impact through elements of design.

4.4.3 Impacts and Mitigation Measures

This section describes the potentially significant impacts to aesthetic resources. This section provides criteria by which significance is determined, analyzes impacts that may occur to aesthetic resources if the Project is implemented, and presents measures to minimize potentially significant impacts.

4.4.3.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Have a substantial adverse effect on a scenic vista.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

C. Substantially degrade the existing visual character or quality of the site and its surroundings.

D. Create a new source of substantial light or glare that would adversely affect day- or nighttime views in the area.

4.4.3.2 Project Impacts

Impact Threshold AES-A: Would the Project have a substantial adverse effect on a scenic vista?

The area of San Joaquin County where the Project site is located is characterized by topographically flat landforms occupied by agricultural and urban uses associated with the community of Banta. The major scenic vistas in San Joaquin County are of the Sierra Nevada foothills to the east and the Diablo Range to the west, while closer scenic vistas are available as one drives on two-lane roads through rural portions of the county, viewing land under agricultural production, vineyards, and orchards. "Close-in" scenic vistas are also available driving on two-lane roads through rural portions of San Joaquin County or viewing these agricultural lands, vineyards, or orchards from existing residences adjacent to the proposed alignment. The proposed Project would develop a new roadway with a southeast-to-northwest orientation, providing drivers along the road with unobstructed views of the Sierra Nevada foothills and the Diablo Range. Residential units that are located just north of the proposed Project are oriented in a north-south direction; therefore, they do not have direct views of the Sierra Nevada foothills and the Diablo Range to the east and west, respectively. Implementation of the proposed Project would include development of an at-grade roadway. Due to its orientation, the proposed Project would not obstruct views of the Sierra Nevada foothills or the Diablo Range from residential uses.

The existing residential units north of the proposed Project currently have "close-in" views of agricultural land to the south. Based on public outreach, the occupants of these residential units consider the existing unobstructed views of this agricultural land to be important scenic vistas. Implementation of the proposed Project would require the development of a new roadway just south of these residential units. The proposed Project would consist of an at-grade road; it would not include large vertical elements that might be visible from surrounding areas or that might block views of distant vistas. However, cars and trucks that use the new road would pass within the view of these residential units; as such, views may be temporarily obstructed as vehicles travel along the new Grant Line Road.

As discussed below in Impact AES-4 and Impact NOI-3, barriers (e.g., fencing, sound walls) would be required at certain sensitive receptors to reduce impacts associated with headlight glare and roadway noise. These barriers would be approximately six feet tall. With implementation of such measures, "close-in" scenic views of the agricultural land to the south would be obstructed for these sensitive receptors. This obstruction would constitute a significant adverse effect on "close-in" scenic vistas for those specific residential units where barriers would be needed. No feasible mitigation measures, changes in Project design, or relocation of the Project would reduce such potential impacts. As such, impacts associated with the obstruction of "close-in" scenic vistas would be **significant and unavoidable**.

Impact Threshold AES-B: Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

State Route (SR) 580 from Interstate (I) 5 to I-205 and I-5 from the Stanislaus County line to SR-580 are the only designated State-scenic highways in San Joaquin County. The Project site is not visible from either highway. The proposed project would not be located near any rock outcroppings, trees,

or historic buildings and therefore would not impact such resources. Therefore, the proposed Project would not substantially damage scenic resources within a State Scenic Highway. As such, **no impact** would occur, and mitigation measures would not be required.

Impact Threshold AES-C: Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

A visual resource is a natural or built landscape feature that people see and that contributes to public enjoyment of the environment because of its visual characteristics or scenic qualities. Aesthetics relates to the visual character and beauty of visual elements. Aesthetic and visual resource impacts are generally defined as changes in the visual character or quality of the site and include the kind of perspective available to the viewer. Impacts are determined based on the extent to which the project's physical elements and characteristics would change the visual character and visual quality of the landscape. Some changes in visual character or quality are compatible with surrounding uses and resources, while other changes are incompatible. The *Guidelines for the Visual Impact Assessment of Highway Projects* (U.S. Department of Transportation 2015) and the *Visual Impact Assessment for Highway Projects* (U.S. Department of Transportation 1988) were accessed and used in the analysis for the proposed Project and the anticipated changes to the existing visual character or quality of the site and its surroundings.

Under the Federal Highway Administration (FHWA) methodology, resource change (visual character and visual quality) and viewer response are the two major variables that determine visual impacts associated with implementation of a roadway (highway) project. Resource change is assessed by evaluating the visual character and visual quality of the visual resources that comprise the Project corridor before and after construction of the proposed Project from the viewpoints of sensitive receptors (the viewers identified for this analysis include roadway neighbors who would have views to the road). The following provides an analysis to determine if implementation of the proposed Project would result in the degradation of existing visual character or of the quality of the site and its surroundings.

The visual resources in the Project area are defined and identified below by assessing the visual character and visual quality in the Project corridor. Visual character includes attributes such as form, line, color, texture, which are used to describe, not evaluate; that is, these attributes are considered neither good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible the proposed Project would be with the existing conditions by using visual character attributes as an indicator. For this Project, the following attributes were considered:

- **Form—**Visual mass or shape
- **Line—**Edges or linear definition
- **Dominance—**Position, size, or contrast
- **Scale—**Apparent size as it relates to the surroundings
- **Diversity—**A variety of visual patterns
- **Continuity—**Uninterrupted flow of form, line, color, or textural pattern

Using the above attributes, the visual character of the proposed Project would be compatible with the existing visual character of the corridor. The proposed Project would include the development of a new roadway south of the community of Banta through land that is currently under agricultural production. The roadway itself would be contoured to conform with the existing topography of the area and would be designed as an at-grade facility. The form of the Project would be consistent with existing roadway facilities in the area and would be designed in compliance with County standards for design of a four-lane (two lanes in each direction) roadway. The linear definition of the roadway would be largely consistent with other roads in the area as agricultural land would be located on either side of the roadway for most of the proposed alignment, thus softening the edges of the facility. Although the Project would develop a new roadway across existing agricultural land, agricultural fields would continue to dominate the viewshed within the Project area. Much of the Project area is characterized by rural roads surrounded by agricultural land. Therefore, the scale and dominance of the majority of the Project alignment would be nominal compared to existing conditions, except for a few instances where the roadway would be immediately adjacent to the existing residential properties. In these locations, construction of the proposed Project would create a new built structure in close proximity, introducing a dominant visual feature within the viewshed that would contrast with the existing agricultural landscape. Existing conditions include a mix of industrial, rural-residential, roadway right-of-way, and agricultural land, providing a variety of visual patterns within the Project area. Implementation of the proposed Project would be consistent with the diversity of visual patterns in the area.

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the Project corridor. Public attitudes validate the assessed level of quality and predict how changes to the Project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of Project implementation. The three criteria for evaluating visual quality of the proposed Project are defined as follows:

- **Vividness —** The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

- **Intactness —** The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.

- **Unity —** The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

The visual quality of the Project area is consistent with the surrounding landscape and typical of rural residential/agricultural areas throughout San Joaquin County. In general, the Project area is mostly natural appearing with agricultural uses; however, elements that alter the general natural appearance of the area include existing roads, residential units, industrial uses, agricultural equipment yards, the Union Pacific Railroad (UPRR) railroad tracks, and commercial uses within the community of Banta.

Vividness. The visual power or memorability of existing landscape components is moderate. The agricultural lands with intermittent clumps of trees provide visual interest in the Project area, and

contribute to its vividness. However, the landscape around the Project site does not provide memorable visual elements such as mountain ranges, mesas, peaks, or rolling hills with oak trees. The proposed Project is located in an area dominated by rural residential/agricultural uses that are consistent with the community of Banta. No visual resources that are unique or exemplary of the region's natural or cultural scenic amenities are present in the Project area.

Intactness. The visual integrity of both the natural and built landscape is moderate. As described above, the agricultural lands that surround the community of Banta provide a fairly uniform visual setting throughout this area. However, man-made components such as power lines, roadways, industrial and commercial uses, the UPRR railroad tracks and agricultural equipment disrupt the integrity of the viewshed. These uses do not provide an intact visual landscape as different aspects of these uses cause visual intrusions in the landscape around the Project site. In general, the visual resources present in the Project area are typical or characteristic of the region's visual amenities.

Unity. The overall composition of this landscape is generally cohesive. As described above, built elements detract from the natural appearance of this rural/agricultural landscape.

Visual perception is the basic act of seeing or recognizing an object. Naturally, humans assume an unobstructed sightline, but other physical conditions can also affect perception. As observer distance increases, the ability to see the details of an object decreases. Two types of observers are typically affected by changes in the landscape, resulting from roadway projects: (1) highway users that have views from the road; and (2) highway neighbors that are adjacent to and/or have views of the road.

Implementation of the proposed Project would change the appearance of the area through the introduction of a new built feature (e.g., roadway) within the viewshed. However, for most viewers visual changes would be considered nominal because built features (e.g., industrial and commercial uses, agricultural equipment, roadways, and railroad tracks) already exist within the landscape. As described above, the design and scale of the proposed Project would be consistent with other roadways in the Project area and proposed Project elements would largely be at-grade and would blend with existing landscape features.

However, this analysis focuses on highway neighbors, sensitive receptors, which will be close to the new road once the Project is implemented. Specifically, these sensitive receptors are located between West F Street and the new Grant Line Road, at the end of Cozy Court, and just north of the dead end at South 7th Street. Based on public outreach, the occupants of these residential units consider the existing unobstructed views of the agricultural land to the south as important landscapes that contribute to their quality of life.

These sensitive receptors have foreground views of existing agricultural uses when looking south toward the proposed Project location. Looking south, these sensitive receptors have mid-ground views of agricultural uses, trees, and some utility poles. Distant views include continued views of agricultural land, as well as views of the Diablo Range to the southwest. Implementation of the proposed Project would introduce a new four-lane road into the foreground views of these sensitive receptors, thus resulting in a substantial change to the visual quality and character of the area for these sensitive receptors.

Furthermore, mitigation measures required to reduce other environmental impacts will be implemented to reduce headlight shine (see Impact AES-4) and traffic noise (see Impact NOI-3). These measures require installing barriers (e.g., fences, sound walls) that would significantly impact the foreground views for these sensitive receptors. In contrast to the proposed roadway, which would be at-grade, these barriers could extend up to six feet high, creating a prominent visual intrusion within their foreground view. With implementation of these measures, foreground views for these sensitive receptors would be largely obstructed (mid-ground and distant views would not be affected), resulting in a substantial change in the visual character/quality of the landscape for these viewers. As such, implementation of the proposed Project would result in a **significant and unavoidable** impact to these sensitive receptors due to the obstruction of and change in the visual character/quality of their foreground views.

Impact Threshold AES-D: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The proposed Project would introduce a road with intersections, street lighting, and an at-grade railroad crossing where currently no large road exists. None of the proposed intersections would utilize traffic lights. However, the proposed Project would create light and glare from the at-grade railroad crossing, street lighting, and the introduction of vehicle traffic, which would potentially adversely affect nighttime views for residences in the south of Banta along the proposed road alignment. Proposed lighting would be required to be consistent with San Joaquin County lighting standards and street lighting would be pointed downward in the direction of the roadway. All efforts would be implemented to reduce light spillage onto sensitive receptors. However, as the proposed Project would install lighting where there is currently little to no lighting, the introduction of new light sources associated with the proposed Project is a potentially significant impact.

In addition, vehicles traveling along the new roadway would generate light from headlights at several residential units where light intrusion does not currently occur. The design of the proposed Project includes curves that direct vehicles toward sensitive receptors, causing light from vehicle headlights to shine directly at these receptors located between West F Street and the new Grant Line Road alignment. To reduce light intrusion from the vehicles traveling along the new Grant Line Road **Mitigation Measure AES-1** would need to be implemented. Additionally, implementation of **Mitigation Measure NOI-3** described in Section 4.8 Noise and Vibration would reduce light intrusion.

Mitigation Measure AES-1 The County of San Joaquin shall provide barriers at the edges of the parcel lines at APNs 25007002, 25007003, and 25008015 that are facing the new roadway. The barriers shall be made of materials that would block the headlight spillage of vehicles traveling along the new roadway. APNs 25012003 and 25008016 may also experience headlight spillage onto their parcels, and implementation of sound walls (as described in Section 4.8, Noise, of this Environmental Impact Report) to reduce noise impacts would also be effective in reducing light intrusion onto these properties.

With implementation of **Mitigation Measure AES-1** and **Mitigation Measure NOI-3**, impacts from light intrusion onto residential parcels would be **less than significant**.

4.4.3.3 Significance Level After Mitigation Implementation

Under Impact Threshold AES-A, impacts would remain **significant and unavoidable (SU)** as no feasible mitigation would be available to reduce impacts. Under Impact Threshold AES-B, no mitigation measures would be required as **no impact (NI)** would occur. Under Impact Threshold AES-C impacts would remain **significant and unavoidable (SU)** as no feasible mitigation measure would be available to reduce impacts. Under Impact Threshold AES-D, implementation of **Mitigation Measure AES-1** and **Mitigation Measure NOI-3** would reduce impacts associated with a new source of light on nearby residential units to **less than significant (LTS)**.

4.5 AGRICULTURE AND FORESTRY RESOURCES

This section describes existing agricultural and forestry resource conditions within the Project site, identifies potentially significant impacts on such resources that may result from Project implementation, and recommends mitigation measures to reduce identified impacts to a less than significant level.

4.5.1 Existing Setting

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources based on soil information documented by the United States Department of Agriculture Natural Resources Conservation Service. Agricultural land is rated by the Natural Resources Conservation Service according to soil quality and irrigation status.

The best land suited for agricultural production is designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, collectively known as Important Farmland. The maps are updated every 2 years using a computer mapping system, aerial imagery, public review, and field reconnaissance. The most current inventory of Important Farmland produced by the FMMP is from the *California Farmland Conservation Report 2015* (Department of Conservation 2015a). The FMMP's statistical and mapping information is contiguous with modern soil surveys developed by the United States Department of Agriculture. The FMMP designates land into the following categories: Prime Farmland; Farmland of Statewide Importance, Unique Farmland; Farmland of Local Importance; Grazing Land; Urban and Built-Up Land; Other Land; and Water. The following provides definitions for each of these designations:

- **Prime Farmland—**Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Farmland of Statewide Importance—**Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Unique Farmland—**Farmland of lesser-quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

- **Farmland of Local Importance—**Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. In San Joaquin County, Confined animal agriculture facilities are included in Farmland of Local Importance, but they are shown separately.

- **Grazing Land—**Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, the University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

- **Urban and Built-Up Land—**Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- **Other Land—**Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped under this designation.

The FMMP refined mapping of the Other Land category in 2002 when the Rural Land Mapping Project was undertaken to better characterize conversions affecting agricultural land that are not due to urbanization. This type of conversion affects 1 of every 5 acres removed from crop or grazing land uses. Examples include conversions to gravel mining, wetlands, low-density residential development, or agriculture-related uses such as confined animal agriculture or compost facilities.

The Rural Land Mapping Project began with four pilot counties and by 2006 had expanded to include Mendocino County and the following eight San Joaquin Valley counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. The Rural Land Mapping Project involved subdividing the miscellaneous Other Land map classification into five new categories, as described below:

- **Rural Residential Land:** Residential area with one to five structures per 10 acres ("ranchettes").

- **Semi-Agricultural and Rural Commercial Land:** Farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.

- **Vacant or Disturbed Land:** Open-field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off-road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.

- **Confined Animal Agriculture:** Poultry facilities, feedlots, dairy facilities, and fish farms. This use may be a component of Farmland of Local Importance in some counties.

- **Nonagricultural or Natural Vegetation:** Heavily wooded, rocky, or barren areas; riparian and wetland areas; grassland areas that do not qualify for Grazing Land due to their size or land management restrictions; small water bodies; and recreational water ski lakes. Constructed wetlands are also included in this category.

- **Water:** Perennial water bodies with an extent of at least 40 acres.

According to the *California Farmland Conversion Report 2015*, in 2012, California had an Important Farmland inventory of 12,215,415 acres, which consisted of, 5,099,009 acres of Prime Farmland; 2,599,222 acres of Farmland of Statewide Importance; 1,343,216 acres of Unique Farmland; and 3,173,968 acres of Farmland of Local Importance (Department of Conservation 2015b). In 2012, San Joaquin County had an Important Farmland inventory of 612,736 acres, which consisted of: 382,115 acres of Prime Farmland; 82,160 acres of Farmland of Statewide Importance; 72,055 acres of Unique Farmland; and 76,406 acres of Farmland of Local Importance (Department of Conservation 2015c).

Maps from the FMMP were reviewed to determine if the Project site is located within an area designated as Important Farmland. Land located to the north and south of the proposed Project has been designated as Prime Farmland, Unique Farmland, and Farmland of Local Importance by the FMMP. The permanent impact area within the Project site contains 19.1 acres of Prime Farmland and 2.75 acres of Confined Animal Agriculture, which is considered Farmland of Local Importance within the County. An evaluation using the Land Evaluation and Site Assessment (LESA) Model is provided below to determine if potential impacts to the loss of Important Farmland would occur due to Project implementation.

The California Land Conservation Act, better known as the Williamson Act, has been California's premier agricultural land protection program since its enactment in 1965. The Williamson Act preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts. Private landowners voluntarily restrict their land to agricultural and compatible open-space uses under minimum 10-year rolling term contracts with local governments (local county or city). In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value. In August 1998, the State Legislature enhanced the Williamson Act with the Farmland Security Zone (FSZ) provisions. The FSZ provisions offer landowners greater property tax reduction in return for a minimal rolling contract term of 20 years. In 2015, California had approximately 14,794,443 acres of land enrolled under the Land Conservation Act program (13,870,475 acres under Williamson Act contract, 866,355 acres under FSZ provisions, and 57,613 acres under agricultural conservation and open space easements reported by participating jurisdictions). San Joaquin County, as of January 1, 2013, had approximately 515,388 acres of land enrolled under the Land Conservation Act program (455,425 acres under Williamson Act contract and 59,963 acres under FSZ provisions).

Parcels under a Williamson Act contract are located near the Project site. Parcels 21317023 and 21317024 are both under active Williamson Act contracts. The next closest Williamson Act parcel to the Project site is approximately 0.3 mile south of the southeastern corner of the Project site.

The majority of the land parcels to the north and south of the proposed Project that are designated for agriculture are designated as General Agriculture (AG) land uses under the 2035 San Joaquin County General Plan. The AG land use designation applies to areas suitable for agriculture outside areas planned for urban development where the soils are capable of producing a wide variety of crops and/or supporting grazing; parcel sizes are generally large enough to support commercial agricultural activities, and there exists a commitment to commercial agriculture in the form of Williamson Act contracts and/or capital investments. Typical uses under this designation include crop production, feed and grain storage and sales, crop spraying, and animal raising and sales. The majority of the parcels surrounding the Project site are zoned General Agriculture Minimum Parcel Size 40 Acres (AG-40) according to the County Zoning Code. This zone was established by the County to preserve agricultural lands for the continuation of commercial enterprises. **Table C: Surrounding Parcels with Agricultural Land Use and Zoning Designations** shows the parcels within or immediately adjacent to the proposed Project that are designated as agricultural land uses and zoned as agricultural.

Table C: Surrounding Parcels with Agricultural Land Use and Zoning Designations

Assessor's Parcel Number	Land Use Designation	Zoning Designation
21317023	AG	AG-40
21317024	AG	AG-40
21317027	AG	AG-40
21317048	AG	AG-40
25003004	AG	AG-40
25003005	AG	AG-40
25004001	AG	AG-40
25004002	AG	AG-40
25004003	AG	AG-40
25004009	AG	AG-40
25004010	AG	AG-40
25001023	AG	AG-40
25012003	AG	AG-40
25012004	AG	AG-40
25013021	AG	AG-40
25009009	AG/R-R	AG-40
25009006	AG	AG-40
25009007	AG	AG-40

Source: San Joaquin County District Viewer Website, http://sjmap.org/DistrictViewer/Viewer.asp. Accessed December 2017.
AG = General Agriculture
AG-40 = General Agriculture Minimum Parcel Size 40 Acres
R-R = Rural Residential

The Project site and surrounding parcels are not designated with forestland/timberland land uses, nor are they zoned as forestland or timberland.

4.5.2 Regulatory Framework

This section provides the federal, State, and local regulatory framework associated with agricultural and forestry resources as applicable to the proposed Project.

4.5.2.1 Federal

There are no federal regulations related to agricultural and forestry resources that apply to the proposed Project.

4.5.2.2 State

California Land Conservation Act of 1965. Preservation of farmland in California is encouraged by the California Land Conservation Act, more commonly known as the Williamson Act. Pursuant to this program (which was initiated in 1965), a landowner signs a contract with the county in which the land is located, voluntarily restricting land to agricultural and open space uses, or compatible uses. The contract is automatically renewed annually, continuing indefinitely unless the owner or the county files for nonrenewal or the owner requests cancellation. The minimal initial contract term is 10 years. The Williamson Act was designed to allow farming to continue in areas close to urbanization by a beneficial tax assessment procedure—that is, Williamson Act parcels are assessed for property tax purposes at a rate consistent with their actual farming and open space uses, as opposed to potential market value.

In 1998, the provisions of the Williamson Act were expanded by Senate Bill 1182 to strengthen agricultural land preservation incentives. The 1998 changes to the Act provided a 35 percent property tax discount to the Williamson Act valuation or Proposition 13 valuation, whichever is lower, and other incentives for farmland owners willing to maintain their land in agricultural land use for 20 years. This latter program creates FSZs within agricultural preserves. Land enrolled under an FSZ contract is restricted to agricultural and open space uses for a minimum initial contract term of 20 years. Land within an FSZ cannot be annexed to cities, and school districts are prohibited from acquiring FSZ lands for school facilities.

State regulations regarding forestry resources are not relevant to the proposed Project because no forestry resources exist at the Project site.

4.5.2.3 Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), administered by the San Joaquin Council of Governments (SJCOG), is the largest habitat mitigation program in San Joaquin County. Adopted in 2001, the SJMSCP is centrally concerned with the preservation of habitat land to satisfy the species protection requirements of federal and State law. The plan also has had other indirect benefits, including the protection of agricultural resources. The 2001 SJMSCP calls for the preservation of about 100,000 acres, including 57,000 agricultural acres, over a 50-year period for

the protection of a variety of biological species. Most agricultural conservation easements (see discussion below) in San Joaquin County are the product of the SJMSCP.

Agricultural Mitigation Ordinance. In 2006, the County Board of Supervisors enacted the Agricultural Mitigation Ordinance. Findings that the "loss of farmland to development is irreparable" and that zoning and other regulatory measures are an "inadequate" approach to preservation, the ordinance calls for:

- At least a 1:1 ratio between the acres of farmland lost and preserved;
- Preservation through the acquisition of easements either (1) directly by the developer, or (2) through payment of in-lieu fees;
- Mitigation of either a General Plan Amendment or rezoning that changes land from an agricultural to non-agricultural designation, regardless of the non-agricultural designation;
- Having a "qualified entity" hold the easements and administer the fees (generally assumed to be the Central Valley Farmland Trust [CVFT]);
- Coordination with similar mitigation efforts of the cities, the SJMSCP, and the Delta Protection Commission; and
- Organization of a nine-member Agricultural Technical Advisory Committee (with three members each appointed by the San Joaquin Farm Bureau Federation, the Building Industry Association, and the County Board of Supervisors) to develop a mitigation strategy, report annually on the effectiveness of the program, and advise the County.

Agricultural Conservation Easements. Agricultural easements are voluntary and combine elements of landowner compensation and regulation. Conservation easements typically eliminate, in perpetuity, the development rights from affected parcels. Landowners voluntarily sell their future development rights for cash, tax benefits, or a mix of both, keeping all other rights of ownership. Typically, the economic benefit of an easement is the difference between its value in agricultural use and its development potential market value. Landowners negotiate terms and sell their easements to government agencies or nonprofit land trusts, which then become responsible for monitoring parcel use to ensure compliance with the easement terms. Legally recorded in property deeds, easements run with the land and are not affected by ownership changes. The CVFT is emerging as the principal broker and holder of agriculture-oriented easements in San Joaquin County, and easements in the county held by the CVFT were first established in 2006.

Right to Farm Ordinance. The County's Real Estate Transfer Disclosure Statement (Right to Farm Ordinance) addresses the problem of urban growth encroaching on agricultural land by seeking to reduce nuisance complaints about farm operations from residential neighbors. Using disclosure methods, purchasers and existing owners of residential property are informed about the local importance of agriculture and the possible negative impacts of residing near normal farm operations, such as noise, odors, insects, dust, fumes, operation of machinery, application of pesticides and fertilizers, storage and disposal of manure, and other operational requirements.

The ordinance is intended to protect existing farming operations from pressure to cease operations when residential development occurs nearby. The County established an Agricultural Grievance Committee to assist in resolution of disputes that arise regarding such operations or activities.

4.5.3 Impacts and Mitigation Measures

This section describes the potentially significant impacts to agricultural and forest resources. This section provides criteria by which significance is determined, analyzes impacts that may occur to agricultural and forest resources if the project is implemented, and presents measures to minimize potentially significant impacts

4.5.3.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to a non-agricultural use.

B. Conflict with existing zoning for agricultural use or a Williamson Act contract.

C. Conflict with existing zoning for, or cause rezoning of, forestland (as defined by Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]).

D. Result in the loss of forest land or conversion of forestland to non-forest use.

E. Involve other changes in the existing environment that, 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.

4.5.3.2 Project Impacts

Impact Threshold AG-A: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?

The Project site is approximately 75.7 acres in size. Implementation of the proposed Project is anticipated to permanently convert 19.1 acres of Prime Farmland, which is the only Important Farmland, located within the Project site. The LESA Model was used to analyze the potential impacts associated with the loss of the Important Farmland due to proposed Project implementation.

The LESA Model is a point-based approach that is generally used for rating the relative value of agricultural land resources. Specifically, the California LESA Model is created by defining and measuring two separate sets of factors. The first set, Land Evaluation (LE), includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second

set, Site Assessment (SA), includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. The LESA Model was utilized in determining the potential permanent impacts of existing soils (categorized as Important Farmland) due to implementation of the proposed Project. **Appendix C: LESA Model** shows the total LESA Model score for the impacted soils that would be lost due to permanent conversion to urbanized lands associated with proposed Project implementation. The total LESA Model score for the area that would be permanently impacted due to proposed Project implementation is 58.8 points. The LE subscore totaled 31.0 points and the SA subscore totaled 27.8 points. **Table D: California LESA Model Scoring Thresholds** shows the scoring thresholds for the California LESA Model.

Table D: California LESA Model Scoring Thresholds

LESA Model Score	Scoring Decisions
0 to 39 Points	Not considered significant
40 to 59 Points	Considered significant only if the LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered significant unless either the LE or SA subscore is less than 20 points
80 to 100 Points	Considered significant

LE = Land Evaluation
LESA = Land Evaluation and Site Assessment
SA = Site Assessment

Based on the information presented in **Table D**, as well as the LESA Model Total Score and Subscore, implementation of the proposed Project would result in a significant impact to Important Farmland that would be permanently lost. Chapter 9-1080, Agricultural Mitigation, of the Ordinance Code of San Joaquin County provides measures for mitigating the loss of lands.

The County's Ordinance Code indicates that agricultural mitigation shall be satisfied by granting a farmland conservation mechanism in which the number of acres of agricultural mitigation land shall be at least equal to the number of acres that would be changed from designated agriculture to a non-agricultural use. Implementation of the proposed Project would require the permanent conversion of 27.2 acres of land that is currently zoned as General Agriculture per the County's Zoning Code to a non-agricultural zoning designation.

Implementation of the proposed Project would require mitigation for the loss of 27.2 acres (it should be noted that 19.1 acres of this land is Prime Farmland) of land zoned for General Agriculture, which would be satisfied through implementation of **Mitigation Measure AG-1.**

Mitigation Measure AG-1 The San Joaquin County Public Works Department shall satisfy the mitigation requirements as set forth in the Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, where the San Joaquin County Public Works Department shall purchase land in equivalent condition to the Important Farmland that would be lost due to Project implementation at a 1:1 ratio. As such, the San Joaquin County Public Works Department shall purchase 27.2 acres of Agricultural Land equivalent in condition to the Important Farmland and existing designated Agricultural Land that would be saved in perpetuity in the form of farmland

conservation easement or other farmland conservation mechanism. The purchase shall be approved by the Agricultural Technical Advisory Committee and the County Board of Supervisors. The San Joaquin County Public Works Department also has the option to pay in-lieu fees in accordance with Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, and through approval of the Agricultural Technical Advisory Committee and the County Board of Supervisors. The in-lieu fees would equate to the value of the agricultural land that would be lost due to proposed Project implementation. The in-lieu fees would be administered to fulfill programmatic responsibilities, including coverage of acquiring interests in land and administering, monitoring, and enforcing the farmland conservation easement or other instrument designed to preserve the agricultural value of the land for farmland mitigation purposes. The San Joaquin County Public Works Department shall satisfy this mitigation measure prior to approval of the proposed Project.

With implementation of **Mitigation Measure AG-1** impacts associated with the conversion of Important Farmland would be reduced to a **less than significant** impact.

Impact Threshold AG-B: Would the Project conflict with existing zoning for agricultural use or a Williamson Act Contract?

The proposed Project would be developed across parcels that are designated General Agricultural AG-40 per the County's Zoning Code. This zone was established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Once right-of-way acquisition is completed by the County, an Order Declaring a Public Highway will be signed by the Chairman of the Board and recorded along with the Grant Deed. This action will ensure that the zoning change is completed per County standards and no other zoning change amendments would be required.

The Project site is adjacent to two parcels—APNs 21317023 and 21317024—that are currently under Williamson Act contracts. Implementation of the proposed Project would not require the full or partial take of these parcels; therefore, the proposed Project would not impact parcels under Williamson Act contracts. Impacts would be **less than significant** with implementation of the proposed Project.

Impact Threshold AG-C: Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?

The proposed Project site and surrounding parcels are not designated with forest land/timberland uses or zoned as forest land or timberland. As such, **no impacts** to forest land or timberland would occur as a result of the proposed Project.

Impact Threshold AG-D: Would the Project result in the loss of forest land or conversion of forest land to non-forested uses?

The proposed Project site and surrounding parcels are not designated with forest land/timberland uses, nor are they zoned as forest land or timberland. As such, **no impacts** to forest land or timberland would occur as a result of the proposed Project.

Impact Threshold AG-E: Would the Project involve other changes in the existing environment which, due to their location or nature, which could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forested use?

Implementation of the proposed Project would convert designated agricultural land to non-agricultural County Right-of-Way. As discussed above under Impact AG-1, the San Joaquin County Public Works Department would be required to mitigate such loss at a 1:1 ratio or would be required to pay in-lieu fees equivalent to the loss in value of the agricultural land through implementation of **Mitigation Measure AG-1**. The proposed Project itself would not include other changes to the existing environment, which may indirectly cause active agricultural land to be converted to non-agricultural land. The Project site and surrounding parcels are not designated with forest land/timberland uses, nor are they zoned as forest land or timberland. As such, impacts would be **less than significant (LTS)** with implementation of **Mitigation Measure AG-1**.

4.5.3.3 Significance Level after Mitigation Implementation

Under Impact Threshold AG-A, implementation of **Mitigation Measure AG-1** would reduce impacts to agricultural land and Important Farmland to **less than significant (LTS)**. Under Impact Threshold AG-B, mitigation measures would not be required as impacts would be **less than significant (LTS)**. Under Impact Threshold AG-C, mitigation measures would not be required, as **no impacts (NI)** would occur. Under Impact Threshold AG-D, mitigation measures would not be required as **no impacts would (NI)** occur. Under Impact Threshold AG-E, would be **less than significant (LTS)** with implementation of **Mitigation Measure AG-1**.

4.6 AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the San Joaquin Valley Air Pollution Control District's (SJVAPCD) *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015a). In keeping with these guidelines, this section describes existing air quality, impacts of the Project on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TAC). Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified where appropriate. Air quality modeling results are included in **Appendix D: Air Quality Output Modeling**.

4.6.1 Setting

The following discussion provides an overview of existing air quality conditions in the region and in San Joaquin County. Ambient air quality standards and the regulatory framework are summarized below along with the climate, air quality conditions, and typical air pollutant types and sources.

4.6.1.1 Air Pollutants and Health Effects

Both the State and federal governments have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and lead are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the Project area are O_3, CO, and PM. Significance thresholds established by an air district are used to manage total regional and local emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual development projects that would contribute to regional and local emissions and could adversely affect or delay the air basin's projected attainment target goals for nonattainment criteria pollutants.

Because of the conservative nature of the significance thresholds and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as O_3 precursors like nitrogen oxides (NO_X) and reactive organic gases.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

Air pollutants and their health effects, as well as other air pollution-related considerations, are summarized in **Table E: Sources and Health Effects of Air Pollutants** and are described in more detail below.

Table E: Sources and Health Effects of Air Pollutants

Pollutant	Source(s)	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust • Natural events, such as decomposition of organic matter	• Reduced tolerance for exercise • Impairment of mental function • Impairment of fetal development • Death at high levels of exposure • Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust • High-temperature stationary combustion • Atmospheric reactions	• Aggravation of respiratory illness • Reduced visibility • Reduced plant growth • Formation of acid rain
Ozone (O3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight	• Aggravation of respiratory and cardiovascular diseases • Irritation of eyes • Impairment of cardiopulmonary function • Plant leaf injury
Lead	• Contaminated soil	• Impairment of blood functions and nerve construction • Behavioral and hearing problems in children
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions	• Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardiorespiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels • Smelting of sulfur-bearing metal ores • Industrial processes	• Aggravation of respiratory diseases (asthma, emphysema) • Reduced lung function • Irritation of eyes • Reduced visibility • Plant injury • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (2016).

Ozone (O_3). O_3 is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROGs and NO_X. The main sources of ROGs and NO_X, often referred to as O_3 precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the San Joaquin Valley, automobiles are the single largest source of O_3 precursors. O_3 is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with O_3 production through the photochemical reaction process. O_3 causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide (CO). CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited—it disperses with distance from the source under normal meteorological conditions.

However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter (PM). Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from human-made and natural sources. PM is categorized in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the San Joaquin Valley, motor vehicles generate about half of the San Joaquin Valley Air Basin's (SJVAB) particulates, through tailpipe emissions as well as brake pad wear, tire wear, and entrained road dust. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction and agriculture are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (ARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children. The ARB also reports that statewide attainment of PM standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California (California Air Resources Board 2011).

Nitrogen Dioxide (NO_2). NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to O_3 formation, NO_2 also contributes to other pollution problems, including a high concentration of $PM_{2.5}$, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high-pollution days, especially in conjunction with high O_3 levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide (SO_2). SO_2 is a colorless, acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery factories. Twenty years ago, mobile

sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the United States Environmental Protection Agency (EPA) established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs do not have AAQS, but they are regulated by the EPA and the ARB. In 1998, the ARB identified PM from diesel-fueled engines as a TAC. The ARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines (California Air Resources Board 2000). High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel PM is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, truck-mounted refrigeration units, and trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment is not commonly used in urban parts of the San Joaquin Valley, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel PM is emitted in the San Joaquin Valley include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel PM may contribute significantly to a cancer risk that is greater than all other measured TACs combined (i.e., approximately 500 to 700 in 1,000,000) (California Air Resources Board 2000). The ARB's Diesel Risk Reduction Plan is intended to substantially reduce diesel PM emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel—a step already implemented—and cleaner-burning diesel engines. The technology for reducing diesel PM emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The ARB anticipates that by 2020, average statewide diesel PM concentrations will decrease by 85 percent from 2000 levels with full implementation of the Diesel Risk Reduction Plan, meaning that the statewide health risk from diesel PM is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the San Joaquin Valley's cancer risk from diesel PM will decrease by a similar factor by 2020.

4.6.1.2 Existing Climate and Air Quality

Air quality is primarily a function of local climate, local sources of air pollution, and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

Regional and Local Air Quality Conditions. A region's topographic features have a direct correlation with air pollution flow and are therefore used to determine the boundary of air basins. The proposed Project is located in Banta, a rural unincorporated community in San Joaquin County, within the jurisdiction of the SJVAPCD, which regulates air quality in the SJVAB.

The SJVAB comprises approximately 25,000 square miles and covers all of seven counties—Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare—and the western portion of an eighth, Kern. The SJVAB is defined by the Sierra Nevada in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000 to 8,000 feet in elevation). The valley is topographically flat, with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits, where the Sacramento-San Joaquin Delta empties into San Francisco Bay. An aerial view of the SJVAB would simulate a "bowl" opening only to the north. These topographic features restrict air movement through and out of the basin.

The climate of the San Joaquin Valley is characterized by hot summers, mild winters, and small amounts of precipitation. The major climatic controls in the valley are the mountains on three sides and the semi-permanent Pacific High pressure system over the eastern Pacific Ocean. The Great Basin High pressure system to the east also affects the valley, primarily during the winter months. These synoptic scale influences result in distinct seasonal weather characteristics, as discussed below.

The Pacific High is a semi-permanent, subtropical high-pressure system located off the Pacific Coast. It is centered between the 140° W and 150° W meridians, and oscillates seasonally in a north-south direction. During the summer, it moves northward and dominates the regional climate, producing persistent temperature inversions and a predominantly southwesterly wind field. Clear skies, high temperatures, and low humidity characterize this season. Very little precipitation occurs during the summer months because the Pacific High blocks migrating storm systems. Occasionally, however, tropical air moves into the area and thunderstorms may occur over the adjacent mountains. In the fall, the Pacific High weakens and shifts southwestward toward Hawaii, and its dominance is diminished in the San Joaquin Valley. During the transition period, the storm belt and zone of strong westerly winds also moves southward into California. The prevailing weather patterns during this time of year include storm periods with rain and gusty winds, clear weather that can occur after a storm or because of the Great Basin High pressure area, or persistent fog caused by temperature inversion.

Air quality is determined primarily by the type and amount of pollutants emitted into the atmosphere, the topography of the SJVAB, and local meteorological conditions. In the Project area,

stable atmospheric conditions and light winds can provide conditions for pollutants to accumulate in the air basin when emissions are produced. Winds in California generally are light and easterly in the winter, but strong and westerly in the spring, summer, and fall.

Air Quality Monitoring Results and Attainment Status. Air quality monitoring stations are located throughout the nation and maintained by the local air districts along with State air quality regulating agencies. Data collected at permanent monitoring stations are used by the EPA to identify regions as "attainment" or "nonattainment" depending on whether the regions meet the requirements stated in the applicable National Air Quality Standards (NAAQS). Nonattainment areas are considered to have air quality worse than the NAAQS and are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment—such as marginal, moderate, serious, severe, and extreme—are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. The ambient air quality of the criteria pollutants monitored in San Joaquin County is summarized below in **Table F: Ambient Air Quality in San Joaquin County.** The SJVAB's attainment status for each of the criteria pollutants for the county is listed in **Table G: SJVAB Air Quality Attainment Status for San Joaquin County**.

Table F: Ambient Air Quality in San Joaquin County

Pollutant	Standard	2014	2015	2016
Carbon Monoxide (CO)[1]				
Maximum 1-hour concentration (ppm)		2.8	2.3	1.7
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.1	1.5	1.3
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)[2]				
Maximum 1-hour concentration (ppm)		0.097	0.107	0.109
Number of days exceeded:	State: > 0.09 ppm	1	4	4
Maximum 8-hour concentration (ppm)		0.084	0.091	0.092
Number of days exceeded:	State: > 0.07 ppm	17	21	19
	Federal: > 0.07 ppm	16	19	19
Coarse Particulates (PM_{10})[1]				
Maximum 24-hour concentration (µg/m^3)		94.0	55.3	66.5
Number of days exceeded:	State: > 50 µg/m^3	3	4	5
	Federal: > 150 µg/m^3	0	0	0
Annual average (µg/m^3)		24.5	28.0	26.5
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)[3]				
Maximum 24-hour concentration (µg/m^3)		51.7	62.1	50.8
Number of days exceeded:	Federal: > 35 µg/m^3	10	16	5
Annual average (µg/m^3)		9.8	12.6	9.8
Exceeded for the year:	State: > 12 µg/m^3	No	Yes	No
	Federal: > 12 µg/m^3	No	Yes	No
Nitrogen Dioxide (NO_2)[2]				
Maximum 1-hour concentration (ppm)		0.036	0.035	0.028

Table F: Ambient Air Quality in San Joaquin County

Pollutant	Standard	2014	2015	2016
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual average (ppm)		0.006	0.006	0.005
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[1]				
Maximum 1-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	0	0	0
Maximum 24-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Source: Compiled by LSA (December 2017).
[1] Data from the Stockton-Hazleton Avenue monitoring site.
[2] Data from the Tracy-Airport monitoring site.
[3] Data from the Manteca-530 Fishback Road monitoring site.
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.
ppm = parts per million

Table G: SJVAB Air Quality Attainment Status for San Joaquin County

Pollutant	State	Federal
Ozone (1-hour)	Severe/Nonattainment	Standard Revoked
Ozone (8-hour)	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment (Maintenance)
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment (Maintenance)
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

Source: San Joaquin Valley Air Pollution Control District, Ambient Air Quality Standards & Valley Attainment Status, website: http://www.valleyair.org/aginfo/attainment.htm. Accessed December 2017.

Major findings regarding air quality in the SJVAB include the following:

- The air quality in the San Joaquin Valley is among the poorest in the State. On average, the valley exceeds the federal health-based standards for ground-level O_3 on 35 to 40 days per year and exceeds the State O_3 standard on more than 100 days per year;

- While there has been an overall decline in air pollution violations, the SJVAB continues to experience violations of NAAQS and California Ambient Air Quality Standards (CAAQS) because some criteria pollutants remain in nonattainment with the standards; and

- Levels of airborne particles exceed the federal standard fewer than five times annually; however, the California standard is exceeded an average of 90 to 100 days per year.

O_3 levels, as measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the SJVAPCD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the San Joaquin Valley still exceeds the State standard for 1-hour and 8-hour O_3 levels. In addition, the valley was designated as a serious nonattainment area for the federal 1997 8-hour O_3 level in June 2004. The EPA lowered the national 8-hour O_3 standard from 0.80 to 0.75 parts per million on May 27, 2008. The San Joaquin Valley is classified as nonattainment for the 1-hour and 8-hour O_3 standards at the State and federal levels, although a request for re-designation as attainment of the 1-hour O_3 standard was submitted to the EPA in 2014. During the 2014–2016 time periods, the following exceedances of the State and federal 1-hour and 8-hour O_3 standards (California Air Resources Board 2016) were recorded at various monitoring stations within San Joaquin County, including Tracy-Airport, the closest monitoring site to the Project:

- Sixteen exceedances of the federal 8-hour O_3 standard in 2014, 19 in 2015, and 19 in 2016;

- Seventeen exceedances of the State 8-hour O_3 standard in 2014, 21 in 2015, and 19 in 2016; One exceedance of the State 1-hour O_3 standard in 2014, four in 2015, and four in 2016; and

- No exceedances of the Federal 1-hour O_3 standard during 2014.

National and State standards have also been established for $PM_{2.5}$ over 24-hour and yearly averaging periods. Because of the small size of individual particles, $PM_{2.5}$ can be especially harmful to human health. $PM_{2.5}$ is emitted by common combustion sources such as cars, trucks, buses, and power plants, in addition to ground-disturbing activities. The San Joaquin Valley is considered a nonattainment area for the $PM_{2.5}$ standard at the State and federal levels. The following $PM_{2.5}$ exceedances were recorded at the Manteca-530 Fishback Road air monitoring station (data were unavailable for the Tracy-Airport air monitoring station):

- Seventeen exceedances of the federal 24-hour $PM_{2.5}$ standard in 2014, 18 in 2015, and 7 in 2016

The San Joaquin Valley is classified as a PM_{10} nonattainment area at the State level. The valley was redesignated from serious nonattainment to attainment of the federal PM_{10} standard in 2008. Because the valley was redesignated from nonattainment to attainment, a PM_{10} maintenance plan was adopted in 2007 and is required to be updated every 10 years. The State annual PM_{10} standard was exceeded in 2014, 2015, and 2016. No exceedances of the federal 24-hour PM_{10} standard were measured at the Stockton-Hazleton Avenue monitoring station during the 2014–2016 time periods.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The San Joaquin Valley is currently considered an attainment area for the State and federal 8-hour and 1-hour CO standards.

No data were available for the SO_2 AAQS for San Joaquin County.

4.6.1.3 Regulatory Framework

The regulatory framework for air quality, including federal, State, and San Joaquin Valley regulations, are described in this section.

Federal. The EPA has responsibility for enforcing, on a national basis, the requirements of many of the country's environmental and hazardous waste laws. California is under the jurisdiction of EPA Region 9, which has its offices in San Francisco. Region 9 is responsible for the local administration of EPA programs for California, Arizona, Nevada, Hawaii, and certain Pacific trust territories. The EPA's activities relative to the California air pollution control program focus principally on reviewing California's submittals for the State Implementation Plan (SIP). The SIP is required by the federal Clean Air Act (CAA) to demonstrate how all areas of the State will meet the NAAQS within the federally specified deadlines (United States Code Title 42, §§ 7409, 7411).

State. The ARB was created in 1968 by the Mulford-Carrell Air Resources Act, through the merger of two other State agencies. The ARB's primary responsibilities are to develop, adopt, implement, and enforce the State's motor vehicle pollution control program; to administer and coordinate the State's air pollution research program; to adopt and update as necessary the CAAQS; to review the operations of the local air pollution control districts; and to review and coordinate preparation of the SIP for achievement of the NAAQS.

San Joaquin Valley Air Pollution Control District. When the State's air pollution statutes were reorganized in the mid-1960s, local air pollution control districts were required to be established in each county of the State (Health & Safety Code §4000 et seq.). There are three different types of districts: county, regional, and unified. In addition, special air quality management districts with more comprehensive authority over non-vehicular sources, as well as transportation and other regional planning responsibilities, have been established by the State Legislature for several regions in California (Health & Safety Code §40600 et seq.).

Air pollution control districts and air quality management districts in California have principal responsibility for:

- Developing plans for meeting the CAAQS and NAAQS;
- Developing control measures for non-vehicular sources of air pollution necessary to achieve and maintain both State and federal air quality standards;
- Implementing permit programs established for the construction, modification, and operation of sources of air pollution;
- Enforcing air pollution statutes and regulations governing non-vehicular sources; and
- Developing employer-based trip reduction programs.

The SJVAPCD has jurisdiction over stationary sources in San Joaquin County and in the other seven counties within the SJVAPCD, and has the authority to enforce most State and Federal air quality regulations relating to construction and operation of stationary sources.

Planning documents for pollutants for which the study area is classified as a federal nonattainment or maintenance area are developed by the SJVAPCD and the ARB and approved by the EPA. The study area air districts are presently guided by the SIP and other planning documents.

The following are the relevant SIP documents for the SJVAB:

- ***2004 Revision to the California State Implementation Plan for Carbon Monoxide***. On April 26, 1996, the SJVAPCD Governing Board approved the "Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas" as part of the SIP for CO. The EPA approved this revision on June 1, 1998, and redesignated the 10 areas as attainment. On October 22, 1998, the ARB revised the SIP to incorporate the effects of the recent Board action to remove the wintertime oxygen requirement for gasoline in certain areas. On July 22, 2004, the ARB approved an update to the SIP that shows how the 10 areas will maintain the standard through 2018, revises emission estimates, and establishes new on-road motor vehicle emission budgets for transportation conformity purposes (California Air Resources Board 2004).

- ***2007 Ozone Plan.*** The SJVAPCD adopted the 2007 Ozone Plan in April 2007. This plan addresses the EPA's 8-hour O_3 standard of 84 parts per billion, which was established by the EPA in 1997 (San Joaquin Valley Air Pollution Control District 2007a).

- ***2007 PM_{10} Maintenance Plan and Request for Redesignation.*** The SJVAPCD adopted the 2007 PM_{10} Maintenance Plan in September 2007 to ensure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/ maintenance area for PM_{10} (San Joaquin Valley Air Pollution Control District 2007b).

- ***2012 $PM_{2.5}$ Plan.*** The SJVAPCD adopted the 2012 $PM_{2.5}$ Plan in December 2012. This plan addresses the EPA's 24-hour $PM_{2.5}$ standard of 35 µg/m³, which was established by the EPA in 2006. The 2012 $PM_{2.5}$ Plan addressed the 2006 $PM_{2.5}$ standard under CAA Title 1, Part D, Subpart 1. The SJVAPCD is currently composing a new Clean Air Plan that will address the 2006 $PM_{2.5}$ standard under CAA Title 1, Part D, Subparts 1 and 4, as ordered by the District of Columbia Circuit Court (San Joaquin Valley Air Pollution Control District 2012).

- ***2013 Plan for the Revoked 1-Hour Ozone Standard.*** In addition to other attainment plans in place by the SJVAPCD, the SJVAPCD prepared the 1-hour attainment plan to satisfy federal requirements under the EPA's revoked 1-hour O_3 standard. The plan does not establish new emission reduction strategies, but builds upon the 8-hour O_3 and PM strategies (San Joaquin Valley Air Pollution Control District 2013).

- ***2015 $PM_{2.5}$ Plan.***On April 30, 2008, the SJVAPCD adopted the 2008 $PM_{2.5}$ Plan, satisfying all federal implementation requirements for the 1997 Federal $PM_{2.5}$ standard. Per guidance from the EPA, this plan addressed the 1997 $PM_{2.5}$ standard under Subpart 1 of CAA Title 1, Part D. Subsequently, in 2013, the D.C. Circuit Court ruled that the EPA erred by solely using CAA

Subpart 1 in establishing its $PM_{2.5}$ implementation rule, without consideration of the PM-specific provisions in Subpart 4. The 2015 Plan for the 1997 $PM_{2.5}$ Standard, approved by the SJVAPCD Governing Board on April 16, 2015 will bring the San Joaquin Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan provides measures designed to reduce emissions such that the valley will attain the federal standards as soon as possible (San Joaquin Valley Air Pollution Control District 2015b).

The following SJVAPCD rules and regulations would be applicable to the Project:

- ***Rule 9510—Indirect Source Review.*** In December 2005, the SJVAPCD adopted the Indirect Source Rule (ISR) (Rule 9510) to meet the SJVAPCD's emission reduction commitments in the PM_{10} and Ozone Attainment Plans (SJVAPCD 2005). ISR regulation applies to any transportation project in which construction emissions equal or exceed 2 tons of NO_X or PM_{10} per year. Construction of the proposed Project (specifically, on-site, off-road construction exhaust emissions) would be subject to ISR. Accordingly, the Project applicant would have to submit an Air Impact Assessment (AIA) application to the SJVAPCD with commitments to reduce construction exhaust NO_X and PM_{10} emissions by 20 percent and 45 percent, respectively.

- ***Rule 8011—General Requirements: Fugitive Dust Emission Sources.*** Fugitive dust regulations are applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII. According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. The Project would also implement the mandatory control measures listed on pages 77 and 78 of the *Guide for Assessing and Mitigating Air Quality Impacts* to reduce fugitive dust emissions. These measures are not considered mitigation measures because they are required by the regulation.

The SJVAPCD Rule 8011 requirements are listed below:

- All disturbed areas, including storage piles, which are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water or a chemical stabilizer/ suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.

- All on-site, unpaved roads and off-site, unpaved access roads will be effectively stabilized for dust emissions using water or a chemical stabilizer/suppressant.

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by utilizing an application of water or by pre-soaking.

- For the demolition of buildings up to six stories in height, all exterior surfaces of the building will be wetted during demolition.

- All materials transported off site will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.

- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.

- Following the addition of materials to, or removal of materials from, the surface of outdoor storage piles, piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.

- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.

- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.

For projects in which construction related activities would disturb equal to or greater than 1 acre of surface area, the SJVAPCD recommends that a demonstration of receipt of an SJVAPCD-approved Dust Control Plan or Construction Notification form, before issuance of the first grading permit, be made a condition of approval.

4.6.2 Impacts and Mitigation Measures

This section describes the potentially significant impacts to air quality conditions. This section provides criteria by which significance is determined, analyzes impacts that may occur to air quality conditions if the Project is implemented, and presents measures to minimize potentially significant impacts.

4.6.2.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Conflict with or obstruct implementation of the applicable air quality plan.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for O_3 precursors).

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

The SJVAPCD thresholds for construction and operation-related emissions have been developed and adopted as criteria for this analysis as shown in **Table H: SJVAPCD Construction and Operation Thresholds of Significance (Tons per Year)**.

Table H: SJVAPCD Construction and Operation Thresholds of Significance (Tons per Year)

	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Construction Thresholds	100	10	10	27	15	15
Operation Thresholds	100	10	10	27	15	15

Source: San Joaquin Valley Air Pollution Control District *Guidance for Assessing and Mitigating Air Quality Impacts* (March 19, 2015a).
CO = carbon dioxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROG = reactive organic gases
SO_X = sulfur oxides

The emissions thresholds in the SJVAPCD's GAMAQI were established based on the attainment status of the SJVAB in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

4.6.2.2 Project Impacts

Impacts associated with the Project would be related to construction and operation of the proposed Project and are described below.

Impact Threshold AQ-A: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The proposed Project would construct a new Grant Line Road to divert traffic from existing Grant Line Road between Banta Road and 11th Street. This is not expected to increase traffic levels above projected 2035 No Build conditions.

The proposed Project would add a roadway to serve projected No Build travel demand in 2035 and would not generate additional emissions once operational. The proposed Project is also in the San Joaquin Council of Governments' Regional Transportation Plan (San Joaquin Council of Governments 2014b), which was found to be in conformance on June 26, 2014 (San Joaquin Council of Governments 2014a). Additionally, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "not conflict with or obstruct implementation of the District's air quality Plan," and as described below, the Project would result in emissions below the thresholds of significance. Therefore, the proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. **No impact** would occur.

Impact Threshold AQ-B: Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The short-term (construction) and long-term (operational) air quality impacts associated with implementation of the proposed Project are discussed below. Additionally, the SJVAPCD's GAMAQI (San Joaquin Valley Air Pollution Control District 2015a) requires comparison to the ambient air quality thresholds of significance, as well as an analysis of potential CO hot spots from mobile sources. Discussions on these impacts are included below.

Short-Term (Construction) Emissions. Short-term air pollutant emissions associated with the proposed Project would occur during excavation, grading, paving, and construction activities. Excavation, grading, and paving vehicle/equipment use would contribute to short-term air pollution emissions.

Excavation, grading, paving, and construction activities at the Project site would generate exhaust emissions from engines, on-site heavy-duty construction vehicles, equipment-hauling materials to and from the site, and motor vehicles transporting construction crews. Exhaust emissions during construction would vary daily as construction activity levels change. The use of construction equipment would result in localized exhaust emissions that could affect the residential units directly adjacent to the Project site. However, the estimated short-term emissions of criteria pollutants as a result of Project construction are below thresholds set by the SJVAPCD, as discussed below.

Construction emissions associated with the proposed Project were calculated using RoadMod, which includes emission factors from the ARB's EMFAC2014 and OFFROAD2014. LSA used specific construction details provided by the San Joaquin County Public Works Department when available and default RoadMod assumptions for all other input fields. The construction schedule for all improvements is expected to be approximately 24 months, starting in 2017. Construction-related emissions are presented in **Table I: Project Construction Emissions in Tons per Year.** As indicated in **Table I**, construction emissions would not exceed SJVAPCD thresholds.

Table I: Project Construction Emissions in Tons per Year

	CO	NO_X	ROG	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Total (tons/year)	5.35	7.69	0.73	0.385	0.36
SJVAPCD Thresholds (tons/year)	100	10	10	15	15
Exceed?	No	No	No	No	No

See **Appendix D** for the Air Quality Output Modeling results.
CO = carbon dioxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROG = reactive organic gases
SJVAPCD = San Joaquin Valley Air Pollution Control District

The SJVAPCD GAMAQI also includes a threshold of 27 tons per year for SO_X emissions. RoadMod does not calculate SO_X emissions; however, given the less than significant emissions of all other pollutants and the use of modern construction vehicles and equipment, the proposed Project is expected to produce less than significant SO_X emissions.

Construction activities at the Project site would include the use of construction vehicles and equipment that would increase air pollutants associated with burning fossil fuel and dust on a short-term basis (a 17- to 24-month period). During the 24-month construction period excavation, grading, paving, and construction of the new road and associated drainage basins and intersection controls would occur. Blowing dust from on-site construction activities is a cause of increased PM_{10} and $PM_{2.5}$ concentrations. The construction activities discussed above would have the potential to contribute to the SJVAPCD's existing California nonattainment status for particulate air quality, contributing a slight increase to PM_{10} and $PM_{2.5}$.

According to the SJVAPCD GAMAQI, in addition to assessing the proposed Project's impacts with respect to thresholds of significance, a lead agency should consider the extent to which compliance with SJVAPCD Regulation VIII and Rule 9510 will reduce fugitive dust and construction exhaust emissions. The proposed Project would comply with all requirements pursuant to SJVAPCD Regulation VIII and Rule 9510. **Mitigation Measures AIR-1** and **AIR-2** are included below to ensure compliance.

To reduce impacts to adjacent residential units and the SJVAB during Project construction, **Mitigation Measure AIR-1** (presented below) would be implemented.

Mitigation Measure AIR-1 The Project contractor, on behalf of the San Joaquin County Public Works Department, shall prepare a Dust Control Plan for excavation and construction activities at the Project site pursuant to the requirements and regulations of the San Joaquin Valley Air Pollution Control District (SJVAPCD), including Regulation VIII. The Dust Control Plan would be developed prior to initiation of construction activities in coordination with the SJVAPCD. The SJVAPCD would maintain a copy of the Dust Control Plan for its records.

The Project contractor shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of construction and maintenance activities at the Project site. The Dust Control Plan shall include, at a minimum, the following measures:

- Apply water to unpaved surfaces and areas;
- Outfitting all personnel on site with appropriate respiratory equipment; the equipment must be properly fitted and personnel must be trained in its use;
- Providing worker hygiene stations and training;
- Prior to construction, provide information on causes, preventative measures, symptoms, and treatments for Valley Fever to individuals who could potentially be exposed through construction activities (i.e., construction workers);
- The County shall continue outreach and coordination with the California Department of Public Health to ensure that the information regarding Valley Fever is readily available to nearby residents, schools, and businesses;

- Use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas;
- Limit or reduce vehicle speed on unpaved roads and traffic areas;
- Maintain areas in a stabilized condition by restricting vehicle access;
- Install wind barriers;
- During high winds (the Dust Control Plan will specify a threshold for implementing "high wind" measures), cease outdoor activities that disturb the soil;
- Keep bulk materials sufficiently wet when handling;
- Store and handle materials in a three-sided structure;
- When storing bulk materials, apply water to the surface or cover the storage pile with a tarp;
- Haul trucks shall not be overloaded;
- Cover haul trucks with a tarp or other suitable cover, or wet the top of the load enough to limit visible dust emissions;
- Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site;
- Prevent trackout by installing a trackout control device;
- Clean up trackout at least once per day; and
- Monitor dust-generating activities and implement appropriate measures for maximum dust control.

Implementation of **Mitigation Measure AIR-1** would ensure that PM_{10} and $PM_{2.5}$ levels generated during Project construction are within the standards of the SJVAPCD for fugitive dust and PM.

Additionally, the SJVAPCD's GAMAQI states that proposed projects should comply with SJVAPCD Rule 9510 (ISR). Rule 9510 requires developers of new residential, commercial, and industrial projects to reduce smog-forming and particulate emissions generated by their projects. The rule also applies to transportation and transit projects whose construction exhaust emissions would result in a total of 2 tons per year of NO_X or PM_{10}. Rule 9510 requires developers to reduce construction NO_X and PM_{10} exhaust emissions by 20 percent and 45 percent, respectively, and to reduce operational NO_X and PM_{10} emissions by 33.3 percent and 50 percent, respectively, as compared to the unmitigated baseline. Project proponents can achieve the required reductions through any combination of SJVAPCD-approved on-site emission reduction measures. When a project cannot

achieve the required reductions through on-site measures, off-site mitigation fees are imposed to mitigate the difference between the required emission reductions and the mitigations achieved on site. Monies collected from this fee are used by the SJVAPCD to fund emission reduction projects in the SJVAB on behalf of the project.

Mitigation Measure AIR-2 would be implemented during Project development to comply with SJVAPCD Rule 9510.

Mitigation Measure AIR-2 The San Joaquin County Public Works Department shall include a condition of approval requiring the submission of an Air Impact Assessment (AIA) application before receiving final discretionary approval for the Project. The AIA application shall be submitted to the SJVAPCD on a form provided by the SJVAPCD and shall contain the following:

- Applicant name and address;
- Detailed project description including the items specified in SJVAPCD Rule 9510;
- On-Site Emission Reduction Checklist;
- Monitoring and Reporting Schedule;
- Off-Site Fee Deferral Schedule; and
- AIA.

Implementation of **Mitigation Measure AIR-2** would ensure that the Project complies with SJVAPCD Rule 9510 and that NO_X and PM_{10} emissions are reduced to less than significant levels.

The proposed Project site is not located in an area where ultramafic rocks occur. Therefore, naturally occurring asbestos would not present an air quality concern during Project construction.

Long-Term (Operational) Emissions. Operational air emission impacts are associated with any change in permanent use of the Project site by on-site stationary and off-site mobile sources that substantially increase vehicle trip emissions. No stationary sources are associated with the proposed Project. Once operational, additional vehicle trips would not be generated in the Project vicinity, nor would the proposed Project result in a significant increase in vehicle miles traveled (VMT). Therefore, operational activities associated with the proposed Project would not contribute substantially to an existing or projected air quality violation. Operational impacts would be less than significant.

Ambient Air Quality. The thresholds of significance for ambient air quality are based on the CAAQS and NAAQS. A project would be considered to have a significant impact if its emissions are predicted to cause or contribute to a violation of an AAQS by exceeding any of the following:

- Any of the CAAQS; or
- Any of the NAAQS, and if available, the associated Significant Impact Level.

According to the SJVAPCD guidance (San Joaquin Valley Air Pollution Control District 2014), SJVAPCD Rule 2201 requires that an Ambient Air Quality Analysis be conducted for a new stationary source, or for a modification to an existing stationary source that results in a Public Notification and Publication Requirement, most commonly when the potential to emit is greater than 100 pounds during any 1 day for any one affected pollutant. The proposed Project is neither a new stationary source nor a modification to an existing stationary source; therefore, it would not be required to perform an Ambient Air Quality Analysis. Additionally, the SJVAPCD GAMAQI states that when assessing the significance of project-related impacts on air quality, it should be noted that the impacts may be significant when on-site emission increases from construction activities or operational activities exceed the 100 pounds per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures.

The 100 pounds per day screening level would not be exceeded during construction for any of the criteria pollutants. Operational emissions would not be increased as a result of the proposed Project. Therefore, impacts to ambient air quality would be less than significant.

Ambient Air Quality—Carbon Monoxide Hot Spot from Mobile Sources. Based on the CO Protocol Analysis developed by the California Department of Transportation (Caltrans), and due to the fact that increased CO concentrations are usually associated with roadways that are congested and have heavy traffic volumes, the SJVAPCD has established a preliminary screening that can be used to determine with fair certainty the effect a project has on any given intersection would not result in a CO hot spot. The SJVAPCD has established that if neither of the following criteria are met at all intersections affected by a project, the project would not result in the potential to create a violation of the CO standard:

- A traffic study for the proposed project indicates that the LOS on one or more streets or at one or more intersections in the project vicinity would be reduced to LOS E or F; or
- A traffic study indicates that the proposed project would substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

Neither of the above criteria would be met by the proposed Project; therefore, a CO hot spot would not result.

With implementation of **Mitigation Measures AIR-1** and **AIR-2**, the Project would have a **less than significant impact with mitigation incorporated**, and would not result in a violation of air quality standards.

Impact Threshold AQ-C: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?

CEQA defines cumulative impacts as two or more individual effects that, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of CAAQS and NAAQS is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

As described above, the proposed Project would result in a short-term increase in air pollutant emissions due to construction activities. The proposed Project would not result in increased air pollutant emissions during operation. Increases of short-term air pollutant emissions would not result in a cumulatively considerable net increase of criteria pollutants for which the Project region is in nonattainment for NAAQS and CAAQS. Impacts are less than significant; however, implementation of **Mitigation Measures AIR-1** and **AIR-2**, as described above, would further reduce construction impacts. As such, impacts would be **less than significant**.

Impact Threshold AQ-D: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel PM are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel PM. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

During construction, various diesel-powered vehicles and equipment would be in use. In 1998, the ARB identified PM from diesel-fueled engines as a TAC. Construction dust can carry coccidioidomycosis, or Valley Fever, which is a disease prevalent in dry, hot areas of the southwestern United States, particularly Arizona, Utah, Nevada, and California. Two-thirds of cases occur in Arizona; most of the rest of the cases occur in California's San Joaquin Valley, with the balance scattered throughout the endemic area. Infection occurs when the spores of the fungus become airborne and are inhaled. Human activities that disturb soil may increase the spread of the fungus. While no study has shown a definitive correlation between construction activities and the spread of the fungus, it is reasonable to assume that construction-related dust may result in the spread of Valley Fever. It can be inferred that grading activities may increase the chance that the fungus will be released from the soil, but that proper best practices for dust control and suppression may result in a reduced risk. As outlined in **Mitigation Measure AIR-1** above, the Project would be

required to implement best management practices (BMP) to reduce fugitive dust, thereby substantially reducing any risk related to Valley Fever. Therefore, impacts associated with Valley Fever are not expected to occur with implementation of **Mitigation Measure AIR-1**.

The ARB has completed a risk management process that identifies potential cancer risks for a range of activities using diesel-fueled engines (California Air Resources Board 2000). High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as having the highest associated risk.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks, whereas health risks are based on a 70-year risk duration. Construction period is widely accepted as "short-term" for the purposes of Project analysis under CEQA because it is a short period of time relative to the 70-year health risk exposure analysis period. Additionally, construction-related sources are mobile and transient in nature, and the emissions occur within the Project site.

The proposed Project is located in a rural area of San Joaquin County; however, single-family residential units are located adjacent to the boundaries of the Project site. Construction activities occurring on the Project site may expose these residents to airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment). The nearest sensitive receptors include residences with backyards located approximately 10 feet from the construction area and the proposed new Grant Line Road.

Given the short duration of Project construction, and due to the linear nature of the Project construction site, construction duration would be limited at any one-receptor location. Construction of the Project would be expected to occur for a duration of 13 months, which is short relative to the 70-year health risk exposure analysis period, especially given that each receptor would only be exposed to a fraction of the construction duration. Impacts are less than significant; however, Implementation of **Mitigation Measures AIR-1** and **AIR-2** would further reduce construction-related emissions to a less than significant level, thus minimizing potential exposure of these sensitive receptors to substantial pollutant concentrations. Therefore, health risks associated with construction of the proposed Project would be less than significant.

The ARB has designated particulate matter from diesel combustion (diesel PM) as a TAC due to chronic and carcinogenic health impacts. Roadways are a primary source of diesel PM emissions. In April 2005, the ARB released the *Air Quality and Land Use and Air Quality Handbook: A Community Health Perspective* (California Air Resources Board 2005), which offers guidance on siting sensitive land uses in proximity to sources of air toxics. Sensitive land uses include residential communities, schools and school yards, daycare centers, parks and playgrounds, hospitals, and medical facilities. Freeways and major roadways are treated in the guidance as a particular source of air toxics. Even though the Project involves developing new roadway sections in the vicinity of potential sensitive land uses (and not vice versa), the same source-receptor relationship exists.

The ARB's land use handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway—a buffer area that was developed to protect sensitive receptors from exposure to diesel PM. This was based on traffic-related studies that showed a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway. The ARB's land use handbook presumes that acute and chronic risks, as well as lifetime cancer risk due to diesel PM exposure, are lowered proportionately.

Because the ARB's recommendations have major implications relative to land development projects, the Sacramento Metropolitan Air Quality Management District (SMAQMD) developed its *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* (SMAQMD 2011) The SMAQMD protocol is intended to give local officials the information needed to assess health risk issues associated with roadways while considering other land uses such as housing, as well as transportation needs, the benefits of urban infill, and community economic development priorities.

The SJVAPCD has not developed a similar roadway development guidance. The land use characteristics and meteorological conditions at the Project site are likely to be similar to those in Sacramento. Therefore, the guidance from SMAQMD is used to assess health risk issues associated with the Project.

The SMAQMD protocol sets forth a three-step project screening approach. The first step is to determine whether the nearest sensitive receptor affected by the Project is at least 500 feet from the nearest high-traffic volume roadway. A high-traffic-volume roadway is defined as a freeway, an urban roadway with 100,000 vehicles per day, or a rural roadway with 50,000 vehicles per day. If this criterion is met, Steps 2 and 3 may be triggered, which include the use of risk-based screening tables (Step 2) or a site-specific health risk assessment (Step 3).

The proposed Project was designed to accommodate the additional travel demand anticipated in 2035 without the Project. Since this demand is anticipated to occur without the Project, the Project would not add any additional traffic and therefore would not generate additional emissions above what is already projected without the Project, once operational.

Traffic volumes for Grant Line Road and Kasson Road are presented in the Fehr & Peers traffic analysis for the proposed Project (Fehr & Peers 2017). Based on the Future No Build and Future Build traffic analysis, the new roadway would reduce travel time, delay, and congestion and can be expected to produce a net air quality benefit with regard to regional emissions compared to a No Build alternative. For both the Future No Build and Future Build scenarios, no roadway segments exceed 25,000 vehicles per day, which is half of the high-traffic-volume roadway threshold of 50,000 vehicles per day. According to the roadway protocol, if the screening thresholds are not exceeded, the Project meets the ARB land use guidance and no further roadway-related air quality evaluations are recommended.

Therefore, the Project's operational emissions of TACs would result in less than significant localized air quality impacts.

Impacts would be **less than significant** with incorporation of **Mitigation Measures AIR-1** and **AIR-2**. Therefore, the proposed Project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Threshold AQ-E: Would the Project create objectionable odors that would affect a substantial number of people?

Some objectionable odors may be generated from the operation of diesel-powered construction equipment and/or vehicles during the Project construction period. Additionally, during the short-term construction period, odors may occur related to decaying organic material disturbed during the excavation process. However, these odors would be short-term in duration, would disperse quickly, and would not result in long-term impacts to the nearby sensitive receptors. Roadway projects are not identified by the SJVAPCD as having the propensity to create odors. Likewise, the Project would not create sensitive receptors within the SJVAPCD project screening distances of any existing odor sources. Therefore, the Project's odor impacts are expected to be **less than significant**.

4.6.2.3 Significance Level after Mitigation Implementation

Under Impact Threshold AQ-A mitigation measures would not be needed as **no impact (NI)** would occur. Under Impact Threshold AQ-B, implementation of **Mitigation Measures AIR-1** and **AIR-2** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold AQ-C, implementation of **Mitigation Measures AIR-1** and **AIR-2** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold AQ-D, implementation of **Mitigation Measures AIR-1** and **AIR-2** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold AQ-E, mitigation measures would not be needed as impacts would be **less than significant (LTS)**.

4.7 BIOLOGICAL RESOURCES

This section describes existing biological resource conditions within the Project site, identifies potentially significant impacts on such resources that may result from Project implementation, and recommends mitigation measures to reduce identified impacts to a less than significant level.

4.7.1 Existing Setting

4.7.1.1 Methods

For purposes of the biological analysis, a Biological Study Area (BSA) was established. The BSA is characterized by large, flat areas of farmland and developed areas, totaling 75.74 acres. The BSA includes the total proposed Project footprint as well as lands beyond the proposed Project footprint that could potentially be affected by Project construction and/or were determined necessary to inventory in order to perform an adequate analysis of impacts on biological resources. For the acreages and locations of SJMSCP habitat types across the BSA, see **Figure 4: SJMSCP Habitat Type**.

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LSA

LEGEND

Biological Study Area - (75.74 ac)

SJMSCP Habitat Types

C4 - Row and Field Crops (unditched) (62.88 ac)

U - Urban/Industrial/Built (6.91 ac)

U2 - Scraped/Paved Areas (5.94 ac)

0 300 600

FEET

SOURCE:

I:\MKT1704\GIS\Reports\NES\Fig5_habitat_types.mxd (10/4/2017)

FIGURE 4

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

SJMSCP Habitat Types

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Lists of sensitive wildlife and plant species potentially occurring within the BSA were reviewed to evaluate potential impacts resulting from Project construction. Sources for the lists include the SJMSCP list of covered species, the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) online special-status species list, and the California Native Plant Society (CNPS) Online Edition. The individual lists are included in **Appendix E: SJMSCP List of Covered Species, California Diversity Data Base, United States Fish and Wildlife Service Online Special Status Species List, and, the California Native Plant Society Online Edition**.

LSA biologist Stefan de Barros conducted general field surveys and a jurisdictional delineation within the BSA on May 25 and 26, 2016. LSA biologist Laura Belt conducted additional general field surveys within expanded areas of the BSA on July 31, 2017.

4.7.1.2 Results

This section discusses the results of the literature search and field investigation, including plant communities/land uses, common wildlife species, movement corridors, and aquatic resources.

Row and Field Crops (un-ditched) (C4). Row and field crops (un-ditched) include a diversity of field crop types in addition to recently tilled fields where no crop growth is evident. Also included in this community are fallow fields, provided they are obviously part of an ongoing agricultural operation, and fields that have been recently tilled or disked but where little (i.e., stubble) or no crop growth is evident. Based on the SJMSCP habitat mapping, this habitat type totals approximately 62.88 acres in the BSA.

Urban/Industrial/Built (U). Urban/Industrial/Built areas consist of buildings, roadways, and other structures, including agricultural outbuildings such as barns and silos. Based on the SJMSCP habitat mapping, this habitat type totals approximately 6.91 acres in the BSA.

Scraped/Paved Areas (U2). Scraped/Paved areas consist of major roads and highways, parking lots, and other types of hardscape areas. Based on the SJMSCP habitat mapping, this habitat type totals approximately 5.94 acres.

Common wildlife species that may occur in the BSA include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), red-tailed hawk (*Buteo jamaicensis*), Brewer's blackbird (*Euphagus cyanocephalus*), black-tailed jackrabbit (*Lepus californicus*), and California ground squirrel (*Otospermophilus beecheyi*).

Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level as links between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., deer movement corridors). No evidence of substantial wildlife movement corridors was identified in the BSA.

Aquatic resources within the BSA are limited to two agricultural ditch features along the western and southern border of a single row crop field. This feature totals 0.21 acre of potential waters of

the U.S. These agricultural ditches appear to be maintained regularly and, consequently, provide minimal ecological value.

4.7.2 Regulatory Framework

4.7.2.1 Federal

Endangered Species Act. The Federal Endangered Species Act (FESA) protects plant and wildlife species listed as endangered or threatened by the USFWS and the National Oceanic and Atmospheric Administration Fisheries. Section 9 of FESA prohibits the take of listed wildlife, where take is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (Code of Federal Regulations [CFR] Title 50, Part 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on nonfederal land in knowing violation of State law (United States Code [USC] Title 16, §1538). Pursuant to Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed plant or wildlife species or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action would not jeopardize the continued existence of the species. Section 10 of FESA provides for issuance of incidental take permits to private parties, provided a Habitat Conservation Plan is developed.

Migratory Bird Act. The Migratory Bird Treaty Act (MBTA) implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR Part 13, General Permit Procedures, and 50 CFR Part 21, Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game (CFG) Code.

Federal Clean Water Act. The federal Clean Water Act's (CWA) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States without a permit from the United States Army Corps of Engineers (USACE). The definition of waters of the United States includes rivers, streams, estuaries, territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR Part 328.3 7b). The EPA also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or Waiver

pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board.

4.7.2.2 State

California Environmental Quality Act. This Project is being evaluated pursuant to CEQA.

California Endangered Species Act. The California Endangered Species Act (CESA) generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called candidates by the State). Section 2080 of the CFG Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the CFG Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with the California Department of Fish and Wildlife (CDFW) to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened, or candidate species or result in destruction or adverse modification of essential habitat. The CDFW administers the act and authorizes take through Section 2081 agreements (except for designated fully protected species).

Fully Protected Species. The State of California first began to designate species as fully protected prior to the creation of CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered pursuant to CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFW prohibits any State agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act. Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act of 1977 (CFG Code Sections 1900–1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. CESA includes an additional listing category for threatened plants that are not protected pursuant to the California Native Plant Protection Act. In this case, plants listed as rare or endangered pursuant to the California Native Plant Protection Act are not protected pursuant to CESA, but can be protected pursuant to CEQA. In addition, plants that are not State listed, but that meet the standards for listing, are also protected pursuant to CEQA (CEQA Guidelines Section 15380). In practice, this is generally interpreted to mean that all species on Lists 1B and 2 of the CNPS Inventory potentially qualify for protection pursuant to CEQA, and some species on Lists 3 and 4 of the CNPS Inventory may qualify for protection pursuant to CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection pursuant to CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

California Lake and Streambed Alteration Agreement. Sections 1600 through 1616 of the CFG Code require that a Lake and Streambed Alteration Program Notification Package be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake". The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal on which the CDFW and the applicant agree is the Lake and Streambed Alteration Agreement. Often, projects that require a Lake and Streambed Alteration Agreement also require a permit from the USACE pursuant to Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Lake and Streambed Alteration Agreement may overlap.

4.7.2.3 Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The SJMSCP, in accordance with the FESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses that affect the plant, fish, and wildlife species covered by the SJMSCP. The SJMSCP compensates for conversions of open space for the following activities: urban development, mining, expansion of existing urban boundaries, nonagricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, nonfederal flood control projects, new parks and trails, maintenance of existing facilities for nonfederal irrigation district projects, utility installation, maintenance activities, managing preserves, and similar public agency projects. These activities would be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Public agencies, including Caltrans (for transportation projects) and the SJCOG (for transportation projects), would also undertake activities that will be covered by the SJMSCP.

The SJMSCP is implemented by the SJCOG in coordination with the plan participants. One of the primary goals of the SJMSCP was to obtain permits from State and federal agencies that would cover projects over the next 50 years. To this end, the USFWS and CDFW have issued incidental take permits in conformance with FESA and CESA. Activities impacting anadromous fish and waters of the United States are subject to National Marine Fisheries Service and USACE regulations, respectively, and are not covered under the SJMSCP. These activities must be permitted directly through the National Marine Fisheries Service and USACE. Generally, the direct take of species is not covered under the SJMSCP; only take of suitable habitat is allowed based on appropriate compensation and implementation of avoidance and minimization measures. Additionally, some special-status species are not covered under the SJMSCP, and impacts to these species require direct permitting through the appropriate agency. The SJMSCP includes species-specific measures to minimize impacts to covered species. These Incidental Take Minimization Measures (ITMM) must be included as conditions of Project approval.

Compensation for impacts to habitat for special plant and animal species covered under the SJMSCP may be provided by one, two, or more of the following options:

- Payment of the appropriate mitigation fee;
- Dedication of mitigation lands;
- Purchase of approved mitigation bank credits; or
- Proposal of an alternative mitigation plan.

4.7.2.4 Potentially Occurring Special Status Species

This evaluation of biological resources included a review and inventory of potentially occurring special-status species (including those officially designated as "endangered" or "threatened"), wildlife habitats, vegetation communities, and jurisdictional waters of the United States. The references reviewed for this report include the following:

- *Tracy, Vernalis, Lathrop, Union Island, Clifton Court Forebay,* and *Midway, California* 7.5-minute topographic quadrangles.

- CNDDB RareFind computer program for the following 7.5-minute quadrangles: *Tracy, Vernalis, Lathrop, Union Island, Clifton Court Forebay,* and *Midway, California* (CDFW 2017).

- Inventory of Rare and Endangered Plants for the following 7.5-minute quadrangles: *Tracy, Vernalis, Lathrop, Union Island, Clifton Court Forebay,* and *Midway, California* (CNPS 2017).

- List of Federal Endangered and Threatened Species that May Be Affected by the Project in the *Tracy, Vernalis, Lathrop, Union Island, Clifton Court Forebay,* and *Midway, California* 7.5-minute quadrangles (USFWS 2017).

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site provides the special-status vegetation and wildlife species near the Project site.

Potentially Occurring Special-Status Plant Species. Information acquired from the CNDDB (CDFW 2017) and other sources resulted in no special-status plant species potentially occurring in the vicinity of the Project site (**Table J**). The Project site largely consists of hardscaped urban areas and land currently in agricultural use. Given the site conditions, it is unlikely that any of the special-status plant species that have been documented within 5 miles of the Project site occur within the site.

Potentially Occurring Special-Status Wildlife Species. Much of the Project site is in active agricultural cultivation, resulting in potential habitat for most special-status wildlife species having been removed. A total of nine special-status wildlife species have the potential to occur (seven birds and two bats) within the Project vicinity (**Table J**). Of those, three special-status wildlife species have historical occurrences within 1 mile of the Project site: Swainson's hawk (*Buteo swainsoni*), a State Threatened species; and western burrowing owl (*Athene cunicularia hypugaea*) and song sparrow "Modesto" population (*Melospiza melodia "mailliardi"*), which are both California Species of Special Concern.

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Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Vegetation			
Acanthomintha lanceolata Santa Clara thorn mint	-/-/ 4.2	Woodland, chaparral, talus, rocky slopes, outcrops, occasionally serpentine. Elevation: < 4,000 ft. Blooms Mar–Jun.	None. No suitable habitat for the species is present in the BSA.
Amsinckia grandifloria large-flowered fiddleneck	FE/SE/1B.1	Valley and foothill grassland, Cismontane woodland. Elevation: 900–1,800 ft. Blooms Mar–May.	None. No suitable habitat for the species is present in the BSA.
Androsace elongata acuta California androsace	-/-/ 4.2	Chaparral, foothill woodland, coastal scrub. Elevation: < 4,000 ft. Blooms Feb–Jun.	None. No suitable habitat for the species is present in the BSA.
Astragalus tener var. *tener* alkali milk-vetch	-/-/1B.2	Alkali playa, valley and foothill grassland, vernal pools. Elevation: < 200 ft. Blooms Mar–Jun.	None. No suitable habitat for the species is present in the BSA.
Atriplex cordulata var. *cordulata* heartscale	-/-/1B.2	Chenopod scrub, meadow and seep, valley and foothill grassland. Elevation: < 900 ft. Blooms Apr–Oct.	None. No suitable habitat for the species is present in the BSA.
Atriplex coronata var. *coronata* crownscale	-/-/4.2	Shadscale scrub, valley grassland, fresh wetlands, riparian, vernal pools. Elevation: < 650 ft. Blooms Mar–Oct.	None. No suitable habitat for the species is present in the BSA.
Atriplex coronata var. *villicola* Lost Hills crownscale	-/-/1B.2	Shadscale scrub, valley grassland, fresh wetlands, riparian. Elevation: < 1,400 ft. Blooms Apr–Sep.	None. No suitable habitat for the species is present in the BSA.
Atriplex depressa brittlescale	-/-/1B.2	Shadscale scrub, valley grassland, alkali sink, riparian, playas. Elevation: < 1,050 ft. Blooms Apr–Oct.	None. No suitable habitat for the species is present in the BSA.
Blepharizonia plumosa big tarplant	-/-/1B.1	Valley and foothill grassland with clay soils, usually on slopes and often in burned areas. Elevation: < 1,650 ft. Blooms Jul–Nov.	None. No suitable habitat for the species is present in the BSA.
California macrophylla round-leaved filaree	-/-/1B.2	Valley grassland, foothill woodland, scrub, vertic clay, occasionally serpentine. Elevation: < 3,950 ft. Blooms Mar–Jul.	None. No suitable habitat for the species is present in the BSA.
Caulanthus lemmonii Lemmon's jewelflower	-/-/1B.2	Grassland, chaparral, scrub. Elevation: 250–5,200 ft. Blooms Mar-May.	None. No suitable habitat for the species is present in the BSA.
Cirsium crassicaule slough thistle	-/-/1B.1	Shadscale scrub, fresh marsh, wetland-riparian. Elevation: < 330 ft. Blooms Mar–Aug.	None. No suitable habitat for the species is present in the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	-/-/1B.2	Cismontane woodland, chaparral, coastal scrub. Elevation: 640–3,600 ft. Blooms Apr–Jun.	None. No suitable habitat for the species is present in the BSA.
Delphinium recurvatum recurved larkspur	-/-/1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. Elevation: 10–2,600 ft. Blooms Mar–Jun.	None. No suitable habitat for the species is present in the BSA.
Erynigium racemosum Delta button-celery	-/SE/1B.1	Seasonally flooded clay depressions in floodplains. Elevation: < 1,100 ft. Blooms Jun–Oct.	None. No suitable habitat for the species is present in the BSA.
Erynigium spinosepalum spiny-sepaled button-celery	-/-/1B.2	Vernal pools, swales, valley and foothill grassland. Elevation: 50–4,200 ft. Blooms Apr–Jul.	None. No suitable habitat for the species is present in the BSA.
Eschscholzia rhombipetala diamond-petaled California poppy	-/-/1B.1	Valley and foothill grassland. Elevation: < 2,500 ft. Blooms Mar–Apr.	None. No suitable habitat for the species is present in the BSA.
Extriplex joaquiniana San Joaquin spearscale	-/-/1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. Elevation: < 2,750 ft. Blooms Apr–Sep.	None. No suitable habitat for the species is present in the BSA.
Hibiscus lasiocarpos var. *occidentalis* woolly rose-mallow	-/-/1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. Elevation: < 500 ft. Blooms Jun–Nov.	None. No suitable habitat for the species is present in the BSA.
Lasthenia ferrisiae Ferris's goldfields	-/-/4.2	Vernal pools or wet saline flats. Elevation: < 2,300 ft. Blooms Feb–May.	None. No suitable habitat for the species is present in the BSA.
Lilaeopsis masonii Mason's lilaeopsis	-/SR/1B.1	Fresh and intertidal marshes, streambanks. Elevation: < 120 ft. Blooms Apr–Nov.	None. No suitable habitat for the species is present in the BSA.
Limosella australis Delta mudwort	-/-/2B.1	Fresh and intertidal marshes, streambanks. Elevation: < 30 ft. Blooms Apr.	None. No suitable habitat for the species is present in the BSA.
Madia radiata showy golden madia	-/-/1B.1	Valley and foothill grassland, Cismontane woodland. Elevation: 65–4,000 ft. Blooms Mar–May.	None. No suitable habitat for the species is present in the BSA.
Myosurus minimus apus little mousetail	-/-/3.1	Valley grassland, coastal sage scrub, freshwater wetlands, wetland-riparian, vernal pools. Elevation: < 3,300 ft. Blooms Mar–Jun.	None. No suitable habitat for the species is present in the BSA.
Navarretia nigelliformis ssp. *radians* shining navarretia	-/-/1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Elevation: 200–3,300 ft. Blooms Apr–Jul.	None. No suitable habitat for the species is present in the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Puccinellia simplex California alkali grass	-/-/1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Elevation: < 2,950 ft. Blooms Mar–May.	None. No suitable habitat for the species is present in the BSA.
Sagittaria sanfordii Sanford's arrowhead	-/-/1B.2	Fresh marshes and ponds. Elevation: < 1,000 ft. Blooms May–Oct.	None. No suitable habitat for the species is present in the BSA.
Senecio aphanactis chaparral ragwort	-/-/2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation: 30–2,800 ft. Blooms Jan–May.	None. No suitable habitat for the species is present in the BSA.
Spergularia macrotheca var. *longistyla*	-/-/1B.2	Alkaline marshes, mud flats, meadows, hot springs. Elevation: < 650 ft. Blooms Feb–May.	None. No suitable habitat for the species is present in the BSA.
Trichocoronis wrightii var. *wrightii* Wright's trichocornis	-/-/2B.1	Marshes and swamps, riparian forest, meadows and seeps, vernal pools. Elevation: < 1,650 ft. Blooms May–Sep.	None. No suitable habitat for the species is present in the BSA.
Tropidocarpum capparideum caper-fruited tropidocarpum	-/-/1B.1	Valley and foothill grassland. Elevation: < 1,300 ft. Blooms Mar–Apr.	None. No suitable habitat for the species is present in the BSA.
Invertebrates			
Branchinecta lynchi vernal pool fairy shrimp	FT/-/-	Grasslands with small, clear-water sandstone-depression pools, and grassed swale, earth slump, or basalt-flow depression pools.	None. No suitable habitat for the species is present in the BSA.
Branchinecta mesovallensis midvalley fairy shrimp	-/SA/-	Vernal pools in the Central Valley.	None. No suitable habitat for the species is present in the BSA.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/-/-	Elderberry shrubs in Central Valley; most commonly found in riparian areas, but can also be found in elderberry savanna.	None. No suitable habitat for the species is present in the BSA.
Lepidurus packardi vernal pool tadpole shrimp	FE/-/-	Vernal pools, clay flats, alkaline pools, ephemeral stock ponds, and other turbid seasonal water features.	None. No suitable habitat for the species is present in the BSA.
Linderiella occidentalis California linderiella	-/SA/-	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	None. No suitable habitat for the species is present in the BSA.
Fish			
Hypomesus transpacificus Delta smelt	FT/SE/-	Estuarine environments of the Sacramento-San Joaquin Delta.	None. No suitable habitat for the species is present in the BSA.
Oncorhynchus mykiss irideus steelhead – Central Valley DPS	FT/-/-	Sacramento and San Joaquin rivers and their tributaries.	None. No suitable habitat for the species is present in the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Spirinchus thaleichthys longfin smelt	FC/ST, SSC/-	Found in open waters of estuaries, mostly in middle or bottom of water column.	None. No suitable habitat for the species is present in the BSA.
Thaleichthys pacificus eulachon	FT/-/-	Lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	None. No suitable habitat for the species is present in the BSA.
Amphibians and Reptiles			
Actinemys marmorata western pond turtle	-/SSC/-	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking.	None. No suitable habitat for the species is present in the BSA. While this species can be found in agricultural ditches, the drainage ditches within the BSA do not provide sufficient vegetation for basking and cover along their margins to be considered appropriate habitat for this species. There are no CNDDB occurrences of the species from within 5 miles of the BSA.
Arizona elegans occidentalis California glossy snake	-/SSC/-	Arid scrub, rocky washes, grasslands, chaparral.	None. No suitable habitat for the species is present in the BSA.
Ambystoma californiense California tiger salamander	FT/ST/-	Valley and foothill grassland with vernal pools or other seasonal ponds for breeding and ground squirrel burrows or other upland refugia for remainder of year.	None. No suitable habitat for the species is present in the BSA.
Masticophis flagellum ruddocki San Joaquin coachwhip	-/SSC/-	Chenopod scrub, valley and foothill grassland.	None. No suitable habitat for the species is present in the BSA.
Masticophis lateralis euryxanthus Alameda whipsnake	-/SSC/-	Chaparral, Cismontane woodland, coastal scrub, valley and foothill grassland.	None. No suitable habitat for the species is present in the BSA.
Phrynosoma blainvillii coast horned lizard	-/SSC/-	Lowlands along sandy washes with scattered low bushes.	None. No suitable habitat for the species is present in the BSA.
Rana boylii foothill yellow-legged frog	-/CT, SSC/-	Partly shaded, shallow streams and riffles with a rocky substrate.	None. No suitable habitat for the species is present in the BSA.
Rana draytonii California red-legged frog	FT/SSC/-	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	None. No suitable habitat for the species is present in the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Spea hammondii western spadefoot	-/SSC/-	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	None. No suitable habitat for the species is present in the BSA.
Thamnophis gigas giant garter snake	FT/ST/-	Marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking.	None. No suitable habitat for the species is present in the BSA. While this species can be found in agricultural ditches, the drainage ditches within the BSA do not provide sufficient vegetation for basking and cover along their margins to be considered appropriate habitat for this species. There are no CNDDB occurrences of the species from within 5 miles of the BSA.
Birds			
Agelaius tricolor tricolored blackbird[1]	-/CE, SSC/-	Fresh marshes, wetlands, and open riparian areas with dense thorny vegetation adjacent to open fields or pastures with abundant insect prey base.	None. The species may forage within the BSA, but no suitable nesting habitat (fresh emergent wetlands or dense thorny vegetation near water) for the species is present in the BSA. There are CNDDB occurrences from the BSA itself and within 5 miles of the BSA, but all of those occurrences are from the 1930s, and notes appended to the occurrences from recent follow-up visits describe the habitat as no longer present.
Aquila chrysaetos golden eagle	-/SFP/-	Rolling foothills, mountain areas, sage-juniper flats, and desert. Nests on the sides of high cliffs.	None. While the species may forage within the BSA during the nonbreeding season, no suitable nesting habitat for the species is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Asio flammeus short-eared owl	-/SSC/-	Nest in fresh and salt marshes with dense emergent vegetation. Occupy valley and foothill grasslands and irrigated alfalfa fields in nonbreeding season.	None. While the species may forage within the BSA during the nonbreeding season, no suitable nesting habitat (marshes with dense emergent vegetation) for the species is present in the BSA, and there are no CNDDB occurrences of the species from within 5 miles of the BSA.
Athene cunicularia hypugaea western burrowing owl	-/SSC/-	Valley and foothill grassland, deserts, scrublands, agricultural and some ruderal environments with low-growing vegetation. Presence of ground-squirrel burrows or similar sized holes, pipes, or culverts needed for nesting.	High. Habitat (agricultural and ruderal areas with ground squirrel populations) is present in the BSA. There are 26 CNDDB occurrences of the species from within 5 miles of the BSA, the closest of which is from 0.6 mile west of the BSA along Chrisman Road.
Buteo regalis ferruginous hawk	-/SWL/-	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats.	None. While the species may forage within the BSA during the nonbreeding season, the BSA is not within the breeding range of the species. There are no CNDDB occurrences of the species from within 5 miles of the BSA.
Buteo swainsoni Swainson's hawk	-/ST/-	Riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	High. Habitat (agricultural with groves or lines of trees) is present in the BSA. The species has been observed within the BSA during surveys, and there are more than 60 CNDDB occurrences of the species from within 5 miles of the BSA. The closest of these is from 0.4 mile south of the BSA along Banta Road.
Circus cyaneus northern harrier	-/SSC/-	Fresh and salt marshes, valley and foothill grasslands, agricultural fields, and scrub. Require dense emergent vegetation or high grasses for nesting.	Low. The species may forage within the BSA, but little to no suitable nesting habitat (emergent vegetation or high grasses) for the species is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE/-	Cottonwood willow riparian forest with understory of blackberry, nettle, and/or wild grape.	None. No suitable foraging or nesting habitat for the species is present in the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Elanus leucurus white-tailed kite	-/SFP/-	Open grasslands, meadows, marshes, and agricultural fields with scattered trees for nesting.	Low. Habitat (agricultural fields with scattered trees for nesting) is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA. However, there is appropriate habitat for species within the BSA.
Eremophila alpestris actia California horned lark	-/SWL/-	Short-grass prairie, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Low. Habitat (agricultural fields) is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA. However, habitat is appropriate and the BSA is well within the range of the species.
Falco columbarius merlin	-/SWL/-	Seacoast, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches.	None. While the species may forage within the BSA during the nonbreeding season, the BSA is not within the breeding range of the species. There are no CNDDB occurrences of the species from within 5 miles of the BSA.
Lanius ludovicianus loggerhead shrike	-/SSC/-	Open woodlands, savannah, riparian woodlands, scrub, and agricultural fields with thorny vegetation or barbed-wire fences in the vicinity for impaling prey.	Low. Habitat (agricultural fields) is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA. However, habitat is appropriate and the BSA is well within the range of the species.
Melospiza melodia song sparrow ("Modesto" population)	-/SSC/-	Fresh marshes, oak and willow riparian, and blackberry thickets along canals and levees.	Low. Marginal habitat (weedy growth along agricultural ditches) is present in the BSA and there is a CNDDB occurrence of the species from within the BSA.
Vireo bellii pusillus least Bell's vireo	FE/SE/-	Low riparian in vicinity of water or in dry river bottoms, and usually with willow, Baccharis, or mesquite component.	None. No suitable foraging or nesting habitat for the species is present in the BSA.
Xanthocephalus yellow-headed blackbird	-/SSC/-	Freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	None. The species may forage within the BSA, but no suitable nesting habitat (fresh emergent wetlands) for the species is present in the BSA. There are no CNDDB occurrences of the species from within 5 miles of the BSA.

Table J: Special Status Vegetation and Wildlife Species Potentially Occurring in the Vicinity of the Project Site

Scientific Name/Common Name	Listing Status USFWS/CDFW/CNPS	Habitat Description	Potential for Impacts
Mammals			
Antrozous pallidus pallid bat	-/SSC/-	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	None. No suitable habitat for the species is present in the BSA.
Corynorhinus townsendii Townsend's big-eared bat	-/SSC/-	Coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands. Roosts in crevices in cliff faces, high buildings, mines, and bridges.	Low. This species sometimes roosts in trees or human-made structures, so it may be found in trees or structures within the BSA.
Eumops perotis californicus western mastiff bat	-/SSC/-	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Low. This species sometimes roosts in trees or human-made structures, so it may be found in trees or structures within the BSA.
Neotoma fuscipes riparia riparian (=San Joaquin Valley) woodrat	FE/SSC/-	Riparian areas with a mix of brush and trees along the San Joaquin, Stanislaus, and Tuolumne rivers.	None. No suitable habitat for the species is present in the BSA.
Perognathus inornatus San Joaquin pocket mouse	-/SA/-	Grassland, oak savanna, and arid scrubland with fine-textured, sandy, friable soils.	None. No suitable habitat for the species is present in the BSA.
Sylvilagus bachmani riparius riparian brush rabbit	FE/SE/-	Riparian forest with thickets of wild rose, willows, and blackberries.	None. No suitable habitat for the species is present in the BSA.
Taxidea taxus American badger	-/SSC/-	Dry open stages of shrub, forest, and herbaceous habitats with friable soils.	None. No suitable habitat for the species is present in the BSA.

[1] In December 2014, the California Fish and Game Commission approved an emergency listing of the tricolored blackbird under the California Endangered Species Act, upgrading it from its status as a Species of Special Concern (SSC) to State Endangered (SE). However, this emergency listing was allowed to expire in June 2015, and as of the date of this report, the status of the species is still under discussion.

BSA = Biological Study Area
CDFW = California Department of Fish and Wildlife
CNDDB = California Natural Diversity Database
CNPS = California Native Plant Society
DPS = distinct population segments
ft = foot/feet
USFWS = United States Fish and Wildlife Service

Western Burrowing Owl. Western burrowing owl is a California Species of Special Concern and has no federal status. Western burrowing owls occur in warm valleys; open, dry grasslands; deserts; and scrublands associated with agriculture and urban areas that support populations of California ground squirrels.

Western burrowing owls nest below ground, using abandoned burrows of other species (in California, most commonly those of California ground squirrels), and feed on insects and small mammals.

Agricultural fields occupied by California ground squirrels are present within the BSA. There are 26 CNDDB occurrences of western burrowing owl within 5 miles of the BSA, the closest of which is from along Chrisman Road just 0.6 mile to the west. Therefore, suitable foraging and nesting habitat for western burrowing owl is present in the BSA.

Swainson's Hawk. Swainson's hawk is a State Threatened species and has no federal status. Swainson's hawks are long-distance migrants, with most leaving California by the end of September, bound for Argentina, and then returning north to breed by the end of March. A small number of individuals spend the winter in the San Francisco Bay-Sacramento-San Joaquin Delta region. Swainson's hawks prefer grassland habitats with scattered trees, or riparian areas adjacent to agriculture or pasturelands. They require mature nest trees and foraging areas that support rodent populations. They typically nest in oak (*Quercus* sp.) or cottonwood (*Populus* sp.) trees that form a dense canopy cover for maximum nest concealment. They are known to forage up to 10 miles from their nest sites. There are several large trees adjacent to agricultural fields within the BSA that would be suitable for Swainson's hawks to nest in, and there are more than 60 CNDDB occurrences of Swainson's hawk from within 5 miles of the BSA. The closest of these occurrences is from along Banta Road just 0.4 mile to the south. Therefore, suitable foraging and nesting habitat for Swainson's hawk is present in the BSA.

Northern Harrier. Northern harrier (*Circus cyaneus*) is a California Species of Special Concern and has no federal status. Northern harriers nest in tall emergent vegetation in fresh and salt marshes, as well as in grasslands and some agricultural fields with dense vegetation such as fallow fields.

There are no CNDDB occurrences of northern harrier within 5 miles of the BSA. However, the agricultural fields within the BSA provide suitable foraging habitat, and agricultural fields in a fallow stage within the BSA could potentially be suitable nesting habitat for northern harriers.

White-tailed Kite. White-tailed kite (*Elaneus leucurus*) is a California Fully Protected Species and has no federal status. White-tailed kites nest in mature trees such as large oaks or cottonwoods adjacent to grasslands or agricultural fields for foraging.

There are no CNDDB occurrences of white-tailed kite from within 5 miles of the BSA. However, the agricultural fields within the BSA provide suitable foraging habitat, and there are several large trees adjacent to agricultural fields within the BSA that would be suitable nesting habitat for white-tailed kites.

California horned lark. California horned lark (*Eremophila alpestris actia*) is a CDFW Watch List Species and has no federal status. California horned larks nest in short grass fields or in dirt scrapes on the margins of grasslands or agricultural fields. They forage in a wide variety of open field habitats.

There are no CNDDB occurrences of California horned lark within 5 miles of the BSA. However, the agricultural fields within the BSA provide suitable foraging habitat for California horned larks, and at certain stages may also provide suitable nesting habitat, as described above.

Loggerhead shrike. Loggerhead shrike (*Lanius ludovicianus*) is a California Species of Special Concern, which is found in a variety of open habitats with dense shrubs or small trees for nesting and thorny vegetation or barbed-wire fences for impaling their prey.

There are no CNDDB occurrences of loggerhead shrike within 5 miles of the BSA. However, there is suitable foraging and nesting habitat for loggerhead shrikes within the BSA in the form of open agricultural areas with isolated trees.

Song Sparrow "Modesto Population."Song sparrow "Modesto population" is a California Species of Special Concern found in fresh marshes with emergent vegetation, as well as brushy areas along streams, canals, and ditches.

There is one CNDDB occurrence of song sparrow "Modesto population" within the BSA, and there is suitable foraging and nesting habitat for the species within the BSA in the form of weedy margins of drainage ditches.

Bats. A variety of bat species may occur within the BSA, some of which may communally roost or rear young in dead or exfoliating trees or certain human-made structures such as buildings, bridges, or tunnels.

Two special-status species of bats for which CNDDB occurrences were returned by the species searches, are known to roost and rear young in trees or human-made structures: western mastiff bat (*Eumops perotis californicus*) and Townsend's big-eared bat (*Corynorhinus townsendii*). Both of these bats are California Species of Special Concern and neither have CNDDB occurrences within 5 miles of the BSA. However, any cavernous human-made structures, such as old houses, barns, or silos, and any large trees with cavities or exfoliating bark could provide roosting habitat for these or other bat species.

Potentially Occurring Jurisdictional Waters. Aquatic resources within the BSA are limited to two agricultural ditches bordering a single row crop field, totaling 0.21 acre of potential waters of the U.S. The agricultural ditches appear to be maintained regularly and, consequently, provide minimal ecological value. **Figure 5: Potential Waters of the U.S.** shows the BSA for the proposed Project and the areas where potential waters of the U.S. are located.

LSA

LEGEND

- Biological Study Area - (75.74 ac)
- Design
- Potential Waters of the U.S. - (0.21 ac)

0 300 600
FEET

SOURCE:

I:\MKT1704\GIS\Reports\NES\Fig6_juris_wtrs.mxd (10/4/2017)

FIGURE 5

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Potential Waters of the U.S.

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4.7.3 Impacts and Mitigation Measures

This section describes potentially significant Project impacts to biological resources. The section provides the criteria by which significance is determined, analyzes impacts that may occur to biological resources if the Project is implemented, and presents measures to minimize potentially significant impacts.

4.7.3.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

C. Have substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

4.7.3.2 Project Impacts

Implementation of the proposed Project would not have a substantial impact on riparian habitat or sensitive natural communities as none occur within or near the Project site (**Impact Threshold BIO-B**). The Project would not require the removal of trees subject to the County's tree preservation plan; therefore, no impacts would occur (**Impact Threshold BIO-E**). As no impacts would occur under these thresholds, further discussion is not required in this Final EIR.

Impact Threshold BIO-A: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

As described above, the BSA supports potential habitat for several special-status species. The Project would participate in the SJMSCP, which utilizes a habitat-based approach to evaluating and

compensating for impacts to special-status species. Specifically, the SJMSCP identifies undeveloped lands (consisting of various habitat types) that would be converted to developed uses as a result of Project implementation. The amount of undeveloped lands (i.e., habitat) converted to developed uses is used to quantify mitigation requirements for compensation of impacts to special-status species. Therefore, within the SJMSCP coverage area, impacts to special-status species are based on the loss of undeveloped habitat. In addition, the SJMSCP also implements species-specific ITMMs to further mitigate potential impacts to special-status species.

Per the SJMSCP, two of the four habitats mapped within the BSA (row and field crops [un-ditched] and drainage ditches) are considered potential special-status species habitat for which compensatory mitigation may be required. Urban areas (including Industrial/Built and Scraped/ Paved Areas) are not considered habitat for special-status species, which would require compensatory mitigation. The Project would remove (i.e., convert these undeveloped lands to developed uses) 19.67 acres of row and field crops (un-ditched).

While urban areas are not considered natural habitats under the SJMSCP and are, therefore, not subject to compensatory mitigation, any species that might occur in urban areas (such as nesting birds or roosting bats) are afforded protection by the ITMMs.

Special-status wildlife species that may occur in the BSA and could be affected as a result of Project activities include western burrowing owl, Swainson's hawk, northern harrier, white-tailed kite, California horned lark, loggerhead shrike, song sparrow ("Modesto" population), and two bat species.

The following mitigation measures would be implemented:

Mitigation Measure BIO-1 In accordance with the SJMSCP compensation strategy, impacts to habitat for special-status plant and animal species covered under the SJMSCP shall be mitigated through implementation of one or more of the following options, subject to approval by the SJCOG:

- Payment of the appropriate mitigation fee;
- Dedication of mitigation lands;
- Purchase of approved mitigation bank credits; or
- Proposal of an alternative mitigation plan.

Mitigation Measure BIO-2 Implementation of the following applicable SJMSCP ITMM for Swainson's hawk, western burrowing owl, ground nesting or streamside/lakeside nesting birds (northern harrier, horned lark, western grebe, short-eared owl), birds nesting in isolated trees or shrubs outside of riparian areas (sharp-shinned hawk, yellow warbler, loggerhead shrike), and all bats.

Swainson's Hawk. The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees.

If the Project Proponent elects to retain a nest tree, the following ITMMs shall be implemented during construction activities to encourage tree retention:

- If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.

- If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

- These ITMMs are consistent with the provisions of the MBTA as described in Section 5.2.3.1(g) of the SJMSCP.

Western Burrowing Owl. The presence of ground squirrels and squirrel burrows is attractive to western burrowing owls. Western burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the Project site early in the planning process by employing one of the following practices:

a. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches (36") above the ground surface. Vegetation should be retained until construction begins. Vegetation would discourage both ground squirrel and owl use of the site.

b. Alternatively, if western burrowing owls are not known or suspected on the Project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders, the Project Proponent may disc or plow the entire site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the Project site. (Detailed descriptions of these methods are included in Appendix A, Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County, dated March 2000):

    i. Anticoagulants. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with United States Environmental Protection Agency (EPA) label

standards and as directed by the San Joaquin County Agricultural Commissioner.

ii. Zinc Phosphide. Establish bait stations with non-treated grain 5 to 7 calendar days in advance of rodenticide application, then apply zinc phosphide to bait stations. Rodenticides shall be used in compliance with EPA label standards and as directed by the San Joaquin County Agricultural Commissioner.

iii. Fumigants. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include aluminum phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with EPA label standards and as directed by the San Joaquin County Agricultural Commissioner.

iv. Traps. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations. If the measures described above were not attempted or were attempted but failed, and western burrowing owls are known to occupy the Project site, then the following measures shall be implemented:

c. During the nonbreeding season (September 1 through January 31), western burrowing owls occupying the Project site should be evicted from the Project site by passive relocation as described in the California Department of Fish and Wildlife's (CDFW) (previously known as the California Department of Fish and Game) *Staff Report on Burrowing Owls* (1995).

d. During the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee (with the concurrence of the Permitting Agencies' representatives on the Advisory Committee) or a qualified biologist approved by the Permitting Agencies verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

These ITMMs are consistent with the provisions of the MBTA as described in Section 5.2.3.1(G) of the SJMSCP.

Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl). A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These ITMMs are consistent with the provisions of the MBTA as described in Section 5.2.3.1(G) of the SJMSCP.

Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike). A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These ITMMs are consistent with the provisions of the MBTA as described in Section 5.2.3.1(G) of the SJMSCP.

Bats (All).

a. Prior to the nursery season indicated in the following table**,** **Occupation Sites and Nursery Seasons for SJMSCP Covered Bats**, nursery sites shall be sealed for these species.

Occupation Sites and Nursery Seasons for SJMSCP Covered Bats

Bat Species	Preferred Occupation Site	Nursery Season
Western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasionally)	April–September
Western small-footed bat	Cave, adit, cliff, rock crevice, building	May–August
Long-eared myotis	Cave, adit, tree, snag	May–August
Fringed myotis	Cave, adit, cliff, rock crevice, building	May–August
Long-legged myotis	Cave, adit, cliff, rock crevice, tree, snag, building	May–August
Western red bat	Tree, snag, cave (occasionally)	May–August
Yuma myotis	Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag	May–August
Townsend's big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April–August

SJMSCP = San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the Project site. Alternatively, grating may be installed as described in Section 5.5.9(E)(1) of the SJMSCP.

c. When colonial roosting sites located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2 of the SJMSCP.

With implementation of **Mitigation Measures BIO-1** and **BIO-2** impacts would be **less than significant**.

Impact Threshold BIO-C: Would the Project have an adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means?

Aquatic resources within the BSA are limited to two agricultural ditches bordering a single row crop field, totaling 0.21 acre of potential waters of the U.S. The agricultural ditches are comprised of non-wetland waters only, appear to be maintained regularly, and provide minimal ecological value. Consequently, Project impacts to these ditches are considered **less than significant**, and no mitigation is proposed.

Impact Threshold BIO-D: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Disturbance of migratory birds during their nesting season (February 1 through August 31) could result in "take," which is prohibited under the MBTA and Section 3513 of the CFG Code. CFG Code Section 3503 also prohibits take or destruction of bird nests or eggs. The SJMSCP ITMMs include measures to ensure the protection of MBTA-covered nesting bird species. These ITMMs are listed under **Mitigation Measure BIO-2,** above. With implementation of **Mitigation Measure BIO-2** impacts would be **less than significant**.

No evidence of substantial wildlife movement corridors was identified in the BSA; as such, the proposed Project is not anticipated to impact such corridors.

Impact Threshold BIO-F: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

The proposed project is located in the jurisdiction of the SJMSCP. With implementation of **Mitigation Measures BIO-1** and **BIO-2** the proposed Project would not conflict with provisions of the SJMSCP. As such, impacts would be **less than significant** with implementation of **Mitigation Measures BIO-1** and **BIO-2**.

4.7.3.3 Significance Level After Mitigation Implementation

Under Impact Threshold BIO-A, implementation of **Mitigation Measures BIO-1** and **BIO-2** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold BIO-B, mitigation measures would not be required as **no impacts (NI**) would occur. Under Impact Threshold BIO-C, mitigation measures would not be required as impacts would be **less than significant (LTS)**. Under Impact Threshold BIO-D, implementation of **Mitigation Measure BIO-2** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold BIO-E, mitigation measures would not be required as **no impacts (NI)** would occur. Under Impact Threshold BIO-F, implementation of **Mitigation Measures BIO-1** and **BIO-2** would reduce impacts to **less than significant (LTS)**.

4.8 NOISE AND VIBRATION

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from the Project. Mitigation measures are identified, as necessary, to address significant environmental impacts.

4.8.1 Existing Setting

The setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. This section also includes a description of current noise sources that affect the Project site and the noise conditions that are experienced in the Project vicinity.

4.8.1.1 Background

This section provides background information on the evaluation of noise impacts, including the characteristics of sound, measurement of sound, physiological effects of noise, and regulatory framework for this analysis.

Characteristics of Sound. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels (dB) are measured on a

logarithmic scale, representing points on a sharply rising curve. **Table K: Definitions of Acoustical Terms** contains a list of typical acoustical terms and definitions. **Figure 6: Typical A-Weighted Sound Levels** shows representative outdoor and indoor noise levels in units of A-weighted decibels (dBA). A decibel is a unit of measurement that indicates the relative intensity of a sound. The 0 point on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments.

Table K: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of measurement hat denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

Source: United States Department of Transportation, Federal Highway Administration, *Fundamentals and Abatement of Highway Traffic Noise,* September 1980.

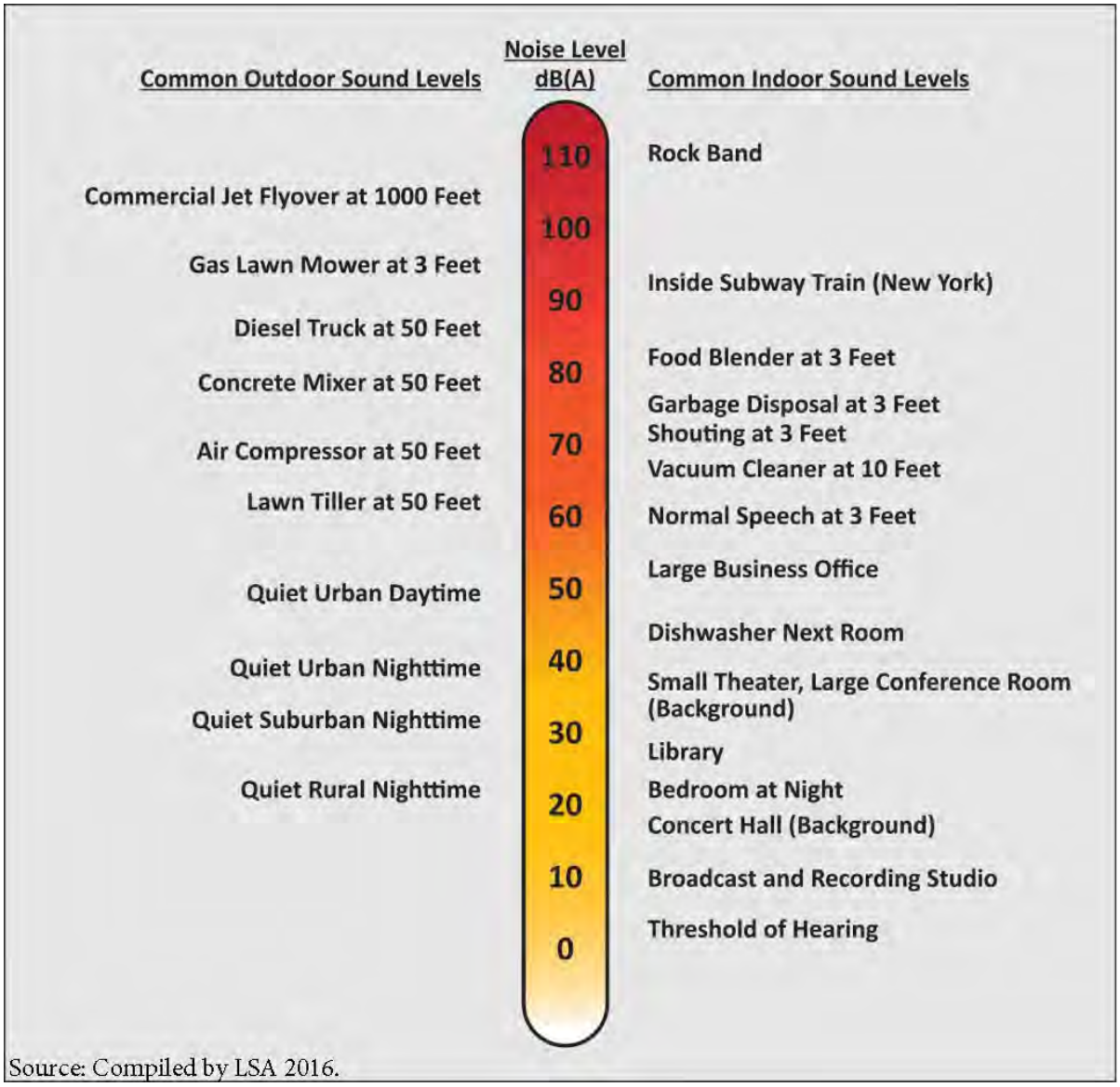

Figure 6: Typical A-Weighted Sound Levels

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Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

As noise spreads from a source, it loses energy, so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels (L_n) are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dBA or greater, since, as described earlier, this level of noise change has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than

1 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected, and a 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA (World Health Organization 1999).

Characteristics of Ground-borne Noise. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root-mean-square velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as “VdB.” Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. Vibration impacts on building structures are generally assessed in terms of peak particle velocity. Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in **Table L: Typical Vibration Source Levels for Construction Equipment**.

Table L: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration (2006).
APN = Assessor's Parcel Number
in/sec = inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

4.8.1.2 Overview of the Existing Noise Environment

The Project site is located in Banta, a rural unincorporated community in San Joaquin County. The community consists of residential housing, an elementary school, and commercial buildings. The primary existing noise source in the Project vicinity is vehicle traffic along existing Grant Line Road and connecting roadways, including cars, trucks, farm equipment, and motorcycles. Truck traffic along local roads increases in importance during harvest season. Noise from surrounding agricultural uses contributes to the existing ambient noise levels in the Project vicinity. Additionally, some noise is generated by the rural residential units located adjacent to the Project site and from trains (up to three passes per day) traveling along the nearby UPRR tracks. The level of vehicular noise generally varies with the volume of traffic, the number of trucks or motorcycles, the speed of traffic, and the distance a sensitive receptor is located from the roadway centerline.

Sensitive Receptors. Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks are considered noise-sensitive uses. The proposed Project

would be developed in an area that is rural with single-family residential units located directly adjacent to the Project area.

There are eight sensitive receptors (all single-family residential units) that are close to the Project site (the closest sensitive receptor is within 20 feet of the construction limit area) and could be impacted by noise generated by the Project. **Table M: Sensitive Receptor Information** provides information on the location of the sensitive receptors and the distance the property lines of the sensitive receptors are from the Project.

Table M: Sensitive Receptor Information

Sensitive Receptor	Use	APN	Physical Address
SR-1	Residential	250-030-04	6200 West Grant Line Road
SR-2	Residential	250-040-01	6016 West Grant Line Road
SR-3	Residential	250-040-02	6010 West Grant Line Road
SR-4	Residential	250-120-03	5750 West F Street
SR-5	Residential	250-080-16	22797 Cozy Court
SR-6	Residential	239-080-76	4460 West Pine Haven Drive
SR-7	Residential	239-090-05	23262 South Bird Road
SR-8	Residential	250-040-03	5982 West Grant Line Road

Source: LSA (2017).
APN = Assessor's Parcel Number

Existing Noise Levels. Between Monday, November 6, 2017, and Wednesday, November 8, 2017, LSA conducted three long-term (24-hour) noise measurements at locations in the vicinity of the Project site to document existing ambient noise levels during a 24-hour period. Three Quest NoisePro DLX Type 1 Dosimeters were used and set up for the 24-hour period to determine the existing ambient noise levels in the Project area. **Figure 7: Sensitive Receptors and Long Term Noise Measurement Locations** shows the location of the sensitive receptors and long-term noise measurements that were taken. **Table N: Existing Noise Level Measurements** shows the existing noise levels in the Project vicinity during daytime, evening, and nighttime hours and the day/night noise levels when propagated to a distance of 50 feet from the nearest roadway.

The main noise sources in the area include vehicle traffic along roads (Grant Line Road, West F Street, and Bird Road), agricultural activities, and up to three train pass-bys per day (train horn noise as at-grade crossings are approached).

Existing Roadway Noise. Noise generated by vehicular traffic on the local roadway network represents the dominant and most consistent noise source in the areas surrounding the Project site. Vehicle traffic along the existing Grant Line Road, Banta Road, West F Street, and 11th Street generates noise levels that are audible at the existing sensitive receptors identified above. In order to characterize the contribution of motor vehicles noise to the ambient environment in the study area, off-site noise prediction modeling was conducted along potentially affected roadway segments.

LSA

LEGEND

- Project Area (75.74 ac)
- Parcels
- Long Term Noise Monitoring Location (LT)
- Sensitive Receptor (SR)

N

0 300 600
FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (07/2017); Mapping - LSA (12/2017)

I:\MKT1704\GIS\Reports\EIR\Fig5_Sensitive Receptors and Long Term Noise Monitoring.mxd (12/4/2017)

FIGURE 7

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Sensitive Receptor and Long Term Noise Monitoring Locations

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Table N: Existing Noise Level Measurements

Location	Description	Day	Daytime Noise Levels[1] (dBA L_{eq})	Evening Noise Levels (dBA L_{eq})	Nighttime Noise Levels[2] (dBA L_{eq})	L_{dn} at 50 feet from Adjacent Roadway	Long Term Noise Measurements Representing Sensitive Receptor Existing Noise Levels
LT-1	On the corner of Grant Line Road and a farm road, approximately 820 feet west of the Grant Line Road/Banta Road intersection. Vehicle traffic along Grant Line Road is the primary noise source.	1	69.2–72.3	65.9–68.2	63.8–71.9	64.7	SR-1, SR-2, SR-3 and SR-8
		2	69.2–71.9	66.8–68.9	64.2–71.4	64.6	
LT-2	On West F Street, approximately 800 feet northwest of the Brichetto Road/Banta Road intersection. Primary noise source: vehicle traffic along West F Street and agricultural activity. Train tracks with an estimated three train pass-bys per 24-hour period.	1	53.9–63.0	62.0–67.6	58.2–66.4	61.2	SR-4 and SR-5
		2	53.9–61.5	58.2	51.8–58.4	56.9	
LT-3	On South Bird Street, approximately 1,100 feet north of the South Bird Road/11th Street intersection. Primary noise source: vehicle traffic along Bird Road and agricultural activities occurring directly across from the monitoring location.	1	62.1–72.6	60.2–65.4	57.3–72.0	61.2	SR-6 and SR-7
		2	66.1–70.2	63.1–65.1	55.6–69.7	60.4	

Source: LSA (2017).
[1] Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 10:00 p.m.
[2] Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.
dBA = A-weighted decibels
I = Interstate
L_{dn} = day-night noise level
L_{eq} = equivalent continuous sound level
LT = long-term measurement

Existing highway and roadway traffic noise levels in the Project vicinity were assessed using the guidelines provided in the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108). This approach uses a typical vehicle mix for urban/suburban areas in California and requires parameters such as traffic volumes, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the L_{dn} values. **Table O: Existing Traffic Noise Levels** provides existing traffic noise contours along modeled roadway segments in the vicinity of the proposed Project.

Table O: Existing Traffic Noise Levels

Roadway Segment	Average Daily Trips	Centerline to 70 dBA L_{dn} (feet)	Centerline to 65 dBA L_{dn} (feet)	Centerline to 60 dBA L_{dn} (feet)	L_{dn} 50 feet from Centerline of Outermost Lane
Grant Line Road just east of Banta Road	7,300	< 50	< 50	86	62.8
Grant Line Road just west of Bird Road	6,900	< 50	58	125	65.3
Kasson Road just east of 11th Street	2,600	< 50	< 50	66	61.0
Kasson Road just east of Interstate 5/Kasson Road interchange	3,500	< 50	< 50	80	62.3

Sources: Compiled by LSA (November 2017).
Note: Traffic noise levels within 50 feet of the roadway centerline can be calculated manually with site-specific information.
dBA= A-weighted decibels
L_{dn} = day-night noise level

As indicated in **Table O**, existing roadway noise levels that were modeled for each roadway segment range from 61 to 65.3 dBA L_{dn} at 50 feet from centerline of the outermost lane of the roadway.

4.8.2 Regulatory Framework

The following section provides brief discussions of the federal, State, and local regulatory framework related to noise.

4.8.2.1 Federal

United States Environmental Protection Agency

In 1972, Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in **Table P: Summary of EPA Noise Levels**. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

Table P: Summary of EPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time as well as other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities, such as schools, etc.

Source: United States Environmental Protection Agency (1974).
dB = decibels
EPA = United States Environmental Protection Agency
L_{dn} = day-night average noise level
L_{eq} = equivalent continuous sound level

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq}(24)$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in **Table Q: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}**. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) and no substantial community reaction may be expected at 11 feet. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

Table Q: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effect	Magnitude of Effect
Speech—Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech—Outdoors	100 percent sentence intelligibility (average) at 0.35 meter. 99 percent sentence intelligibility (average) at 1.0 meter. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level-related factors.
Annoyance	17 percent dependent on attitude and other non-level-related factors.
Attitude Toward Area	Noise essentially the least important of various factors.

Source: United States Environmental Protection Agency (1974).
dB = decibels
dBA = A-weighted decibels
L_{dn} = day-night average noise level

4.8.2.2 State

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The "State Noise Insulation Standard" requires noise-sensitive land uses to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the building. State regulations include requirements for the construction of new hotels, motels, apartment homes, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor/ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

4.8.2.3 Local

The proposed Project is located in Banta, an unincorporated area in San Joaquin County. The County addresses noise in the Noise Element of the *2035 San Joaquin County General Plan (San Joaquin County 2016a)* and in Section 9-1025.9 (Noise) of the San Joaquin County Municipal Code (San Joaquin County 2015).

San Joaquin County General Plan Noise Element. The County includes a table of maximum allowable noise exposure from transportation noise sources for various noise-sensitive land use types, in dB L_{dn}. While it is unclear what types of projects the thresholds apply to, it is assumed these levels would be applicable to the proposed Project. The maximum allowable noise exposure for outdoor activity areas for all noise-sensitive land uses (except those for which a limit is not provided), including residential, is 65 dB L_{dn}. The maximum allowable noise exposure for interior spaces for all noise-sensitive land uses is 45 dB L_{dn}.

San Joaquin County Municipal Code. The Municipal Code outlines the County's standards for and limitations on noise sources within San Joaquin County. The County exempts noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day. As the County does not provide construction noise limits for sensitive receptors, this analysis will consider the Federal Transit Administration (FTA) construction noise threshold of 90 dBA L_{eq} (FTA 2006).

4.8.3 Impacts and Mitigation Measures

This section describes potentially significant Project impacts from noise. The section provides the criteria by which significance is determined, analyzes impacts that may occur to sensitive receptors due to noise generated by the proposed Project during construction and operation, and presents measures to minimize potentially significant impacts.

4.8.3.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

B. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

C. A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

D. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

E. For a Project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels.

F. For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels.

As described above under Section 4.8.2.1, a significant noise impact would occur if noise levels associated with the proposed Project exceed 65 dB L_{dn} at outdoor activity areas or 45 dB L_{dn} in interior spaces.

4.8.3.2 Project Impacts

The proposed Project is not located within 2 miles of a public airport or within the vicinity of a private airstrip. Tracy Municipal Airport (a public use facility) and 33 Strip Airport – CA54 (a private use facility) are both located 5 miles away from the Project site. As such, the proposed Project would not expose people living or working in the vicinity of a public/private use airport to excessive noise levels. No impacts would occur (**Impact Thresholds NOI-E** and **NOI-F**).

Impact Threshold NOI-A: Would the Project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The proposed Project is located in the jurisdiction of San Joaquin County; as such, construction and operational noise standards set forth by the 2035 San Joaquin County General Plan and San Joaquin County Municipal Code would be applicable to the Project. The following provides an analysis to determine if nearby sensitive receptors would be exposed to noise levels exceeding the County standards during Project construction or operation.

Short-Term Construction Noise Impacts. Two types of short-term noise impacts would occur during Project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the Project site and may incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved on site by large semi-trucks, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the Project vicinity. Local roads would be used to access the Project site. Although there would be high single-event noise exposure potential at a maximum level of 75 dBA L_{max} from commuter trucks passing at 50 feet, the effect on longer-term (daily) ambient noise levels would be small when compared to the existing daily traffic volumes of Grant Line Road (between 6,900 and 7,300 vehicles) and Kasson Road (between 2,600 and 3,500 vehicles). Because construction-related commuter vehicle trips would not approach the daily traffic volumes mentioned above, traffic noise would not increase by 3 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Additionally, Grant Line Road and Kasson Road currently have a high percentage of heavy trucks; therefore, the additional commuter trips, typically in pick-up trucks, would be minimal. Therefore, short-term, construction-related impacts associated with worker commute and equipment transport to the Project site would be less than significant.

The second type of short-term noise impact is related to noise generated during grading, road construction, and paving on the Project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics (refer to the construction phasing discussion below). These various sequential phases would change the character of the noise generated on the Project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. **Table R: Typical Construction Equipment Maximum Noise Levels, L_{max}** lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1 to 2 minutes of full-power operation followed by 3 to 4 minutes at lower power settings.

Table R: Typical Construction Equipment Maximum Noise Levels (L_{max})

Type of Equipment	Acoustical Usage Factor	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Air Compressors	40	80
Concrete/Industrial Saw	20	90
Crawler Tractors	40	84
Excavators	40	85
Forklifts	40	85
Generator Set	50	82
Grader	40	85
Paver	50	85
Plate Compactor	20	80
Rollers	20	85
Rubber Tired Loader	40	80
Surfacing Equipment	50	85
Sweepers/Scrubbers	10	85
Tractors/Loaders/Backhoes	40	80
On-Highway Dump Trucks	40	84
Concrete Transit Mix Trucks	50	85

Source: Federal Highway Administration, 2006.
dBA = A-weighted decibels
L_{max} = maximum noise level

In addition to the reference maximum noise level, the usage factor provided in **Table R** is utilized to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where:

$L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period

E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 feet

U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time

D = distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Utilizing the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$L_{eq}\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

The composite noise level of the two loudest pieces of equipment, the forklift and tractor, during construction, as required by the FTA criteria, would be 82 dBA L_{eq} at a distance of 50 feet from the construction area.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$L_{eq}\ (at\ distance\ X) = L_{eq}\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

The proposed Project would include construction of a new roadway that would divert traffic along existing Grant Line Road between Banta Road and 11th Street to the south of the community of Banta. Construction of the proposed Project would occur in phases, which include: Phase 1, Grading/Clearing; Phase 2, Grading/Excavation; Phase 3, Drainage/Utilities/Sub-Grade; and Phase 4, Paving. The following construction equipment would be used during each phase of construction associated with the proposed Project:

- **Phase 1:** Two crawler tractors; two excavators; two tractors/loaders/backhoes; and six on-highway dump trucks.
- **Phase 2:** Two crawler tractors; four excavators; two graders; four rollers; two tractors/loaders/ backhoes; and eight on-highway dump trucks.
- **Phase 3:** One air compressor; one concrete/industrial saw; two excavators; one forklift; one generator set; two graders; two plate compactors; two rollers; three tractors/loaders/backhoes; one on-highway dump truck; and one concrete transit mix truck.
- **Phase 4:** One grader; two pavers; three rollers; one rubber-tired loader; one piece of surfacing equipment; one sweepers/scrubbers; six on-highway dump trucks; and one concrete transit mix truck.

For modeling purposes, the two nosiest pieces of construction equipment were used to determine construction noise levels at the nearest sensitive receptors. During construction of the proposed Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

As shown in **Table R**, the existing daytime noise levels in the vicinity of the Project site range from 53.9 to 72.8 dBA L_{eq} during daytime hours. Based on the equations above, noise levels at the closest noise-sensitive uses, approximately 20 feet from the edge of the activities, would reach 95 dBA L_{eq}. The farthest sensitive receptors, approximately 120 feet from the edge of the activities, would reach

76 dBA L_{eq}. Because construction noise levels would exceed the FTA construction noise threshold of 90 dBA L_{eq}, a potentially significant impact would occur during construction. Implementation of **Mitigation Measures NOI-1** and **NOI-2** would be required to reduce potential construction noise impacts.

Mitigation Measure NOI-1 Construction activities during the four phases of Project development shall occur during any day of the week from 6:00 a.m. to 9:00 p.m. per the San Joaquin County Code. If construction activities need to occur outside of this time frame, the construction contractor shall notify the County, and approval of extended construction activity hours shall be approved by the San Joaquin County Board of Supervisors. The County Board of Supervisors, if approval is granted, may require additional conditions of approval to ensure that construction activity noise levels are as low as possible. The construction contractor would be required to abide by such conditions of approval if the request of construction activity times is approved by the County Board of Supervisors.

Mitigation Measure NOI-2 The following minimization measures shall be implemented, to the extent feasible, during construction activities:

- The Project construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest sensitive receptors.
- The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project construction areas.
- A temporary 10-foot-high perimeter wall shall be placed along the property lines such that the line of sight from ground-level construction equipment and sensitive receptors would be blocked. The construction barrier may be a 0.5-inch-thick plywood fence or another material that has a minimum Sound Transmission Class rating of 28.
- Prior to commencement of Project construction, staff from San Joaquin County shall continue public relations with residents and businesses near the Project site by providing construction information pamphlets to those residents and businesses within 500 feet of the Project site. The construction pamphlets shall describe the type of construction activities that would occur and the duration of Project construction, indicate that a temporary increase in ambient noise levels could occur during Project construction, and provide a phone number where concerned residents and business owners can call County staff if noise levels from construction activities become a nuisance.

Implementation of the above identified mitigation measures would have the potential to reduce construction noise to the greatest extent feasible. As such, implementation of **Mitigation Measures**

NOI-1 and **NOI-2** would result in construction noise impacts that are **less than significant** at nearby sensitive receptors.

Project Operation. To assess traffic noise impacts, the traffic noise levels along major roadway segments within the Project vicinity were projected using FHWA modeling to predict traffic noise level conditions with and without the proposed Project. FHWA modeling was based on existing traffic conditions as documented in the Final Traffic Operations Report for the Grant Line Road and Kasson Road Corridor Plan (Fehr & Peers 2017) prepared for the Project. FHWA modeling results are summarized in **Table S: Traffic Noise from New Road at Identified Sensitive Receptors** and **Table T: Summary of Traffic Noise Levels.** The tables include projected traffic noise levels as measured at 50 feet from the centerline of the outermost traveled lane along the modeled roadway segments. The model does not account for existing sound walls or terrain features that could reduce traffic noise levels at adjacent land uses, but rather assumes a worst-case direct line-of-sight over soft surface to the modeled traffic noise sources.

Table S: Traffic Noise from New Road at Identified Sensitive Receptors

Sensitive Receptor	L_{dn} (dBA) 50 Feet from Centerline of Outermost Lane of New Road	Distance of Sensitive Receptor from Centerline of Outermost Lane of New Road (feet)[1]	Adjusted Noise Level (L_{dn} dBA) at Sensitive Receptor from Centerline of Outermost Lane of New Road
SR-1	68.6	**45**	**69.5**
SR-2		134	60.0
SR-3		167	58.3
SR-4		**60**	**67.0**
SR-5		**67**	**66.1**
SR-6		472	49.1
SR-7		438	49.7
SR-8		294	53.2

Source: LSA (November 2017).
Notes: **Bold** text indicates sensitive receptors where noise levels would exceed San Joaquin County thresholds.
[1] The distance measurement is from the center of the rear yard of the sensitive receptor to the centerline of the outermost lane of the new road.
dBA = A-weighted decibels
L_{dn} = day-night average noise level

Table T provides the noise level conditions along the roadway segments in the vicinity of the proposed Project under 2017 Existing conditions, 2035 No Project conditions, and 2035 Plus Project conditions. Under the 2017 Existing conditions, sensitive receptors within 50 feet from the centerline of the outermost lane of Grant Line Road west of Bird Road are exposed to noise levels of 65.3 dBA L_{dn}; as such, sensitive receptors along this segment are exposed to noise levels exceeding the County standard of 65 dBA L_{dn}. Under the 2035 No Project conditions, sensitive receptors along Grant Line Road east of Banta Road, Grant Line Road west of Bird Road, and Kasson Road east of 11th Street within 50 feet of their centerlines are exposed to noise levels that exceed the County standards for residential uses. Implementation of the proposed Project under 2035 conditions with the Project would be beneficial to sensitive receptors along Grant Line Road east of Banta Road and Grant Line Road west of Bird Road as noise levels would be reduced to below County standards for residential uses based on redistribution of traffic from the new traffic pattern in the area.

Table T: Summary of Traffic Noise Levels

Roadway Segment	2017 Existing Conditions		2035 No Project Conditions			2035 Plus Project Conditions			
	ADT	L_{dn} (dBA) 50 Feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 Feet from Centerline of Outermost Lane	Change Over 2017 Conditions (dBA)	ADT	L_{dn} (dBA) 50 Feet from Centerline of Outermost Lane	Change Over 2017 Conditions	Change Over 2035 No Project Conditions (dBA)
Grant Line Road east of Banta Road	7,300	62.8	20,900	67.4	4.6	1,900	57.0	<5.8>	<10.4>
Grant Line Road west of Bird Road	6,900	65.3	18,900	69.6	4.3	2,000	59.9	<5.4>	<9.7>
Kasson Road east of 11th Street	2,600	61.0	18,500	68.5	7.5	18,500	68.5	7.5	0
Kasson Road east of I-5 and Kasson Road Interchange	3,500	62.3	5,700	64.4	2.1	5,700	64.4	2.1	0
New Grant Line Road	N/A	N/A	N/A	N/A	N/A	19,000	68.6	68.6	68.6

Sources: Compiled by LSA (November 2017). Fehr and Peers, *Final Traffic Operations Report for the Grant Line Road and Kasson Road Corridor Plan* (November 2017).
ADT = average daily traffic
dBA = A-weighted decibels
I = Interstate
L_{dn} = day-night average noise level
N/A = not applicable

Under the 2035 Plus Project conditions, sensitive receptors within 50 feet of Kasson Road east of 11th Street would be exposed to noise levels of 68.5 dBA L_{dn} and an increase of 7.5 dBA compared to 2017 Existing conditions; however, implementation of the Project would not cause this increase as the noise levels along this roadway segment under the 2035 No Project conditions and 2035 Plus Project conditions do not change. As such, and based on the information provided in **Table S,** implementation of the proposed Project would not result in increased roadway noise at nearby sensitive receptors above and beyond thresholds as set forth County standards.

The Project involves the construction and operation of the new Grant Line Road. Based on the average daily traffic (ADT) levels associated with the Project under 2035 conditions, it is anticipated that noise levels along the new road would be 68.6 dBA L_{dn} as measured at 50 feet from the centerline of the outermost lane. As shown in **Table S** above, the distances of the eight sensitive receptors analyzed in this section were used to determine the estimated noise levels each receptor would be exposed to with Project implementation.

Sensitive receptor SR-1 would be exposed to a noise level of 69.5 dBA L_{dn}, sensitive receptor SR-4 would be exposed to a noise level of 67.0 dBA L_{dn}, and sensitive receptor SR-5 would be exposed to a noise level of 66.1 dBA L_{dn}. As such, these three sensitive receptors would be exposed to noise levels that exceed standards set forth by the County. Therefore, impacts to these sensitive receptors would be significant if mitigation is not implemented.

Under existing conditions, based on long term noise measurement LT-1, sensitive receptor SR-1 is currently exposed to a noise level of 64.6 dBA L_{dn}. Implementation of the proposed Project would result in a substantial permanent noise level increase of 4.9 dBA L_{dn} over existing conditions at sensitive receptor ST-1 based on the results shown above in **Table S**. Both sensitive receptors SR-4 and SR-5, based on long-term noise measurement LT-2, are exposed to an existing noise level of 61.2 dBA L_{dn}. Implementation of the proposed Project would result in a 5.8 dBA L_{dn} noise level increase at sensitive receptor SR-4 and a 4.9 dBA L_{dn} noise level increase at sensitive receptor SR-5. The noise increase at each of the receptors is greater than 3 dBA, which constitutes a substantial permanent noise level increase. As such, impacts to these sensitive receptors would be significant if mitigation is not implemented.

In order to mitigate the exterior noise level impacts at receptors R-1, R-4 and R-5, which are potentially significant, installation of noise barriers would be required at the property line of the sensitive receptor impacted or at the right-of-way of the new roadway. Noise barriers could consist of any outdoor, weather-resistant solid material that meets a minimum sound transmission class requirement. The sound requirements are not particularly strict; they can be met by many commonly available materials that have a minimum surface density of 4 pounds per square foot. Achieving the maximum possible noise reduction requires careful sealing of gaps between barrier panels and between the barrier and the ground. Based on the EPA's Protective Noise Levels, with a combination of walls, doors, and windows, standard construction for Northern California residential buildings would provide more than 25 dBA in exterior-to-interior noise reduction with windows closed. As shown above in **Table S**, exterior noise levels are expected to remain below 70 dBA Ldn. With the incorporation of a 25 dBA reduction, interior noise levels would remain below the 45 dBA Ldn standard, resulting in a less than significant impact.

Based on the information above, in order to reduce noise impacts to sensitive receptors SR-1, SR-4, and SR-5, the following mitigation measure shall be implemented.

Mitigation Measure NOI-3 As part of the proposed Project, noise barriers shall be constructed by the County at the property lines of sensitive receptors SR-1, SR-4, and SR-5. The barriers that are installed shall be constructed such that noise levels from adjacent transportation sources would be reduced by a minimum of 5 dBA L_{dn} and shall be installed prior to opening the proposed Project to traffic.

Implementation of **Mitigation Measure NOI-3** would ensure that noise levels at these sensitive receptors due to the new Grant Line Road are reduced to County threshold levels for exterior areas of residential land uses. Implementation of noise barriers with a minimum abatement of 5 dBA would reduce the noise level at sensitive receptor SR-1 to 64.5 dBA, at sensitive receptor SR-4 to 62.0 dBA, and at sensitive receptor SR-5 to 61.1 dBA (all below the 65 dBA County threshold for residential uses). The estimated location of the noise barriers for each of these sensitive receptors is shown on **Figure 8: Estimated Locations of Noise Barriers**. As such, impacts would be **less than significant**.

Impact Threshold NOI-B: Would the Project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings, where the motion may be discernable, and is rarely perceived as a problem outdoors. Without the effects associated with the shaking of a building, there are less adverse reactions.

Construction operations can generate varying degrees of ground vibration depending on the construction procedures and the construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels to low rumbling sounds and perceptible vibration at moderate levels, and slight damage at the highest levels. Ground-borne vibration from construction activities rarely reaches the levels that damage structures. Caltrans and the FTA have published standard vibration velocities for construction equipment operations. **Table U: Vibration Source Amplitudes for Construction Equipment** lists the vibration source amplitudes for construction equipment.

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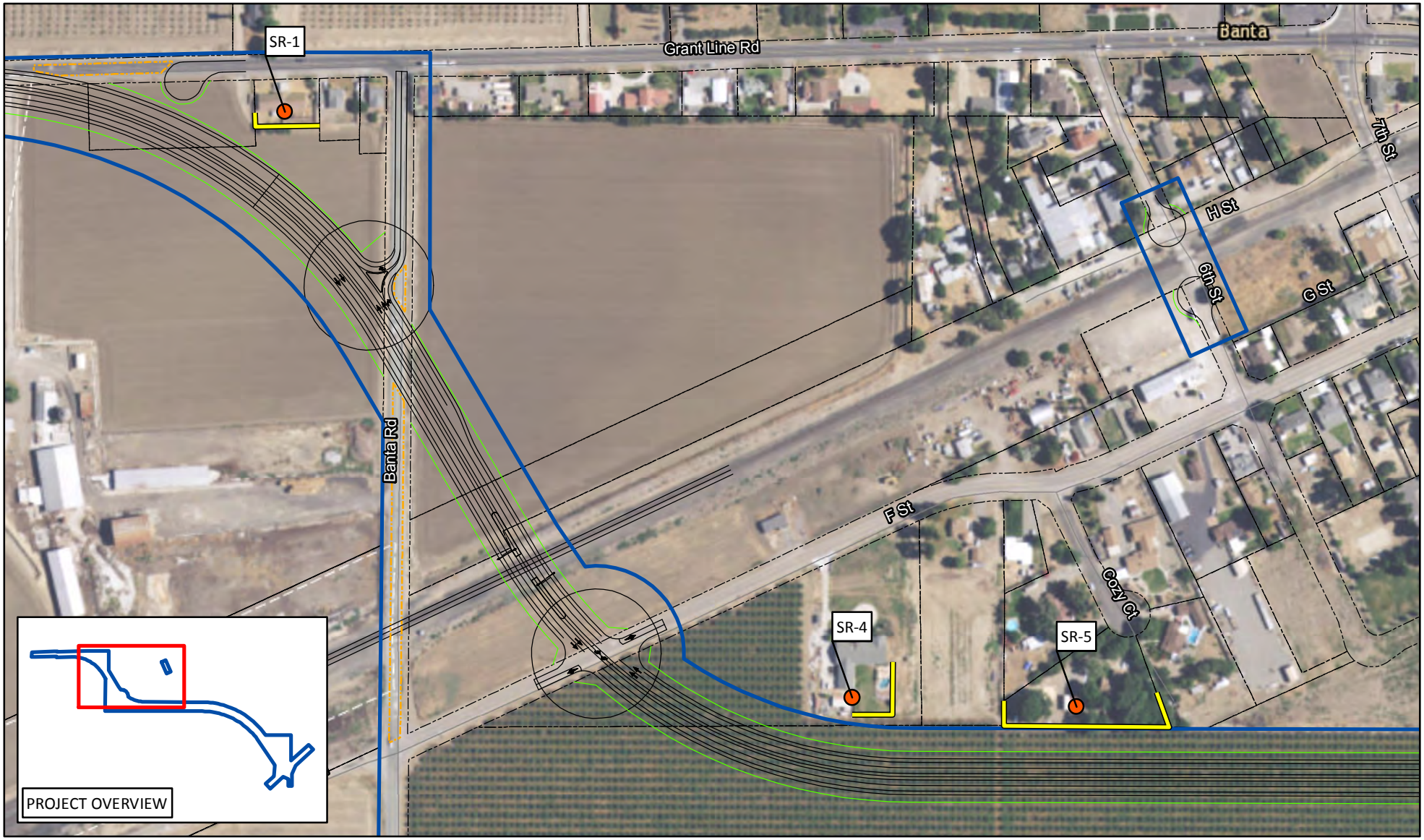

LSA

LEGEND

- Project Area (75.74 ac)
- Parcels
- Sensitive Receptor (SR)
- Noise Barrier
- Design
- Pavement Removal
- Proposed Right-of-Way

0 150 300
FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (07/2017); Mapping - LSA (12/2017)

I:\MKT1704\GIS\Reports\EIR\Noise Barriers.mxd (12/6/2017)

FIGURE 8

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Estimated Locations of Noise Barriers

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Table U: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 feet	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	**0.210**	**94**
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment* (FTA 2006).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] Equipment shown in **bold** is expected to be used on site.
µin/sec = micro-inches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The closest sensitive receptors are within 35 feet of the Project site construction footprint and are non-engineered timber and masonry buildings, which has a damage threshold of 0.2 peak particle velocity (PPV) inches per second (in/sec) (or 94 velocity in decibels). If construction equipment, such as a vibratory roller, is used within 35 feet of the sensitive receptor, the sensitive receptor could be exposed to vibration levels of 0.127 PPV in/sec (or 90 velocity in decibels). Such vibrations levels would be below the damage thresholds of non-engineered timber and masonry buildings without equipment restrictions.

Loaded trucks traveling along the new Grant Line Road could be as close as 45 feet from the closest sensitive receptors once the proposed Project is operational. Loaded trucks have the potential to generate vibration levels of 0.076 PPV in/sec (or 86 velocity in decibels) at a distance of 25 feet; therefore, since the closest sensitive receptors are 45 feet from the area where loaded trucks would operate, such vibration levels would be below the damage thresholds of non-engineered timber and masonry buildings.

Construction and operational vibration impacts to sensitive receptors due to Project implementation would be **less than significant** and mitigation measures would not be required.

Impact Threshold NOI-C: Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Please refer to the analysis under Impact Threshold NOI-A which discusses substantial permanent increases in ambient noise levels in the Project vicinity above levels existing without the Project. Impacts would be **less than significant** with implementation of mitigation measures **MM-NOI-1**, **MM-NOI-2**, and **MM-NOI-3**.

Impact Threshold NOI-D Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Please refer to the analysis under Impact Threshold NOI-A which discusses substantial permanent increases in ambient noise levels in the Project vicinity above levels existing without the Project. Impacts would be **less than significant** with implementation of mitigation measures **MM-NOI-1**, **MM-NOI-2**, and **MM-NOI-3**.

4.8.3.3 Significance Level after Mitigation Implementation

Under Impact Threshold NOI-A, implementation of **Mitigation Measures NOI-1**, **NOI-2** and **NOI-3** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold NOI-B mitigation measures would not be needed as impacts would be **less than significant (LTS)**. Under Impact Threshold NOI-C, implementation of **Mitigation Measures NOI-1**, **NOI-2** and **NOI-3** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold NOI-D, implementation of **Mitigation Measures NOI-1**, **NOI-2** and **NOI-3** would reduce impacts to **less than significant (LTS)**. Under Impact Threshold NOI-E, mitigation measures would not be needed as **no impacts (NI)** would occur. Under Impact Threshold NOI-F, mitigation measures would not be needed as **no impacts (NI)** would occur.

4.9 TRANSPORTATION AND CIRCULATION

This section describes existing transportation and circulation conditions within and near the Project site, identifies significant impacts on such conditions that may result from Project implementation, and recommends mitigation measures to reduce identified impacts to a less than significant level, if possible. Information presented in this section is based on the *Final Traffic Operations Report for Grant Line Road and Kasson Road Corridor Plan*, prepared by Fehr & Peers in November 2017 (**Appendix F: Transportations Operations Report**).

4.9.1 Existing Setting

4.9.1.1 Roadway System

The proposed Project is located just south of the existing Grant Line Road corridor in an unincorporated area of San Joaquin County just east of the City of Tracy. A description of the roadways comprising the local circulation system is presented below.

Grant Line Road. Existing Grant Line Road is an east-west facility that extends from Byron Highway in the City of Tracy to 11th Street in an unincorporated area of San Joaquin County. In the unincorporated area of San Joaquin County, the roadway provides two lanes (one lane in each direction) of traffic. There are no turning lanes on the roadway and narrow shoulders are provided for most of its length. The roadway primarily runs south of and parallel to I-205. The roadway has predominantly side-street stop control at the intersections of 7th Street (traffic signal) and 11th Street (two-lane roundabout). Agricultural land uses are primarily located on both sides of Grant Line Road except in the communities of Banta and Stoneridge (located just east of 11th Street), where there are single-family homes fronting the roadway. The posted speed limit is 35 miles per hour (mph) within the community of Banta and 45 mph outside of Banta. East of 11th Street, Grant Line Road becomes Kasson Road.

Kasson Road. Kasson Road is a north-south, two-lane arterial that provides access to I-5 via a full-access interchange. The roadway has a posted speed limit of 45 mph.

Banta Road. Banta Road is a north-south, two-lane rural arterial that extends from Grant Line Road on the north to Linne Road to the south. The roadway has no posted speed limit near Grant Line Road.

6th Street, 7th Street, and G Street. Each of these streets is a north-south, two-lane residential street within the community of Banta with direct access to Grant Line Road. These roadways have a de-facto speed limit of 25 mph.

Bird Road. Bird Road is a north-south, two-lane rural arterial that extends from Grant Line Road past I-580 to the south. The roadway has no posted speed limit near Grant Line Road.

Berry Avenue. Berry Avenue is a north-south, two-lane collector that extends from Grant Line Road on the south to Canal Boulevard on the north. The roadway has no posted speed limit near Grant Line Road.

11th Street.11th Street is the historic route of United States Highway 50 and is currently signed as Business Route 205. The four-lane arterial provides access to central Tracy and extends from I-205 west of Tracy to I-5. This street serves as an alternative route to I-205 for traffic between Tracy and the central San Joaquin County cities of Lathrop, Manteca, and Stockton. The roadway has a posted speed limit of 55 mph near Grant Line Road.

Kasson Road/I-5 Interchange. The Kasson Road/I-5 interchange has a hybrid configuration such that it provides a diamond configuration (Type L-2) on the west side and a partial cloverleaf configuration (Type L-7) on the east side. The interchange provides full access to I-5 via single-lane ramps.

4.9.1.2 Pedestrian, Bicycle, and Transit Facilities

Sidewalks are not provided along the vast majority of Grant Line Road in the Project area. Sidewalks and marked crosswalks are provided on some legs of the Grant Line Road intersections with 6th Street, 7th Street, and 11th Street. The crosswalks at 6th Street and 7th Street are school crossings. The sidewalk/school crosswalks on 6th Street and 7th Street are used often by pedestrian traffic traveling between residential units on the south side of Grant Line Road and the elementary school on the north side of Grant Line Road. There are no transit routes or facilities provided on Grant Line Road in the Project area.

4.9.1.3 Key Intersection and Road Segments

The study area for the proposed Project includes 10 existing intersections, 4 proposed intersections, 4 existing roadway segments, and 1 proposed roadway segment. The study intersections include the following:

1. Banta Road/Grant Line Road
2. 6th Street/Grant Line Road
3. 7th Street/Grant Line Road
4. G Street/Grant Line Road
5. Bird Road/Grant Line Road
6. Berry Avenue/Grant Line Road
7. Stoneridge Drive/Grant Line Road
8. 11th Street/Grant Line Road/Kasson Road
9. I-5 Southbound Ramps/Kasson Road
10. I-5 Northbound Ramps/Kasson Road
11. New Roadway/11th Street
12. New Roadway/Bird Road
13. New Roadway/7th Street Extension
14. New Roadway/Banta Road

Study area roadway segments include Grant Line Road just east of Banta Road, Grant Line Road just west of Bird Road, Kasson Road just east of 11th Street, Kasson Road just east of the I-5/Kasson Road interchange, and the proposed new Grant Line Road.

4.9.1.4 Analysis Methods

Traffic operations are described using the qualitative term "level of service." LOS is presented on a scale from A to F, with LOS A representing free-flow traffic conditions and LOS F representing heavily congested conditions. LOS is a qualitative measure of a number of factors on traffic conditions, including speed, travel time, traffic delay, freedom to maneuver, safety, driving comfort, and convenience.

Intersection Level of Service. The study intersections were analyzed using procedures consistent with the *Highway Capacity Manual*. **Table V: Intersection LOS Threshold** presents the Highway Capacity Manual's delay thresholds for unsignalized and signalized intersections used to evaluate LOS for the study intersections.

Table V: Intersection LOS Threshold

LOS	Average Delay[1]	
	Signalized	Unsignalized/Roundabout
A	< 10	< 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Sources: Transportation Research Board (2010). *Highway Capacity Manual*. 5th Edition. Fehr & Peers (2017). *Final Traffic Operations Report for the Grant Line Road and Kasson Road Corridor Plan* (November 2017).

[1] Measured in seconds per vehicle

LOS = Level of Service

Synchro/SimTraffic 9.0 microsimulation traffic analysis software was used to evaluate all of the study locations except existing and planned roundabouts. Roundabout analysis was performed using SIDRA traffic analysis software.

Roadway Segment Level of Service. For this study, roadway segment LOS thresholds presented in the *San Joaquin County General Plan* and the City of Stockton (the largest city in San Joaquin County) were used to determine reasonable capacities for major arterials. **Table W: Roadway Segment LOS Thresholds** presents the roadway segment LOS thresholds. The arterial thresholds distinguish between arterials with and without left-turning lanes because arterials with left-turn lanes have higher capacities than those without left-turn lanes.

Table W: Roadway Segment LOS Thresholds

Facility Class	Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E
Arterial	Two lanes with no turning lanes	9,100	10,000	12,500	15,400	18,000
	Two lanes with turning lanes	11,000	12,100	15,000	18,500	21,600
	Four lanes with no turning lanes	22,700	24,700	30,100	36,600	42,300
	Four lanes with turning lanes	25,700	28,200	35,000	43,100	50,300

Sources: San Joaquin County (2016). San Joaquin County General Plan. Website: https://www.sjgov.org/commdev/cgi-bin/cdyn.exe/cdyn.exe?grp=planning&htm=gp2035 (accessed December 2017).
City of Stockton. 2007. 2035 General Plan. Website: http://www.stocktongov.com/government/departments/communityDevelop/cdPlanGen.html (accessed December 2017).
LOS = level of service

4.9.1.5 Existing Traffic Volumes

Morning (7:00–9:00 a.m.) and evening (4:00–6:00 p.m.) peak-period traffic counts were collected by Fehr & Peers at the study intersections on Tuesday, November 19, 2013. Daily traffic classification counts were collected for 3 weekdays (November 19–21, 2013) at the study roadway segments to determine ADT volumes along Grant Line Road and Kasson Road. The counts indicate the overall morning peak hour at the study locations is from 8:00 a.m. to 9:00 a.m., while the evening peak hour is from 5:00 p.m. to 6:00 p.m. The daily traffic classification counts indicate trucks make up about 16 percent and 9 percent of the a.m. and p.m. peak-hour traffic, respectively. The overall peak-hour factor in the morning is 0.88, while the evening peak-hour factor is 0.81. Existing traffic counts are provided in **Appendix F**.

The San Joaquin County Public Works Department provided results of speed surveys it performed in in 2012, 2013, and 2014 on Grant Line Road. A total of 50 vehicle speeds were recorded at each location. The results are presented below in **Table X: Grant Line Road Speed Survey Results**. The posted speed limit is 35 mph between Banta Road and G Street and 45 mph east of G Street. As shown in **Table X**, the 85th percentile vehicle speeds on Grant Line Road are between 7 mph and 15 mph higher than the posted speed limit.

Table X: Grant Line Road Speed Survey Results

Location	Date	Direction	85th Percentile Speed (mph)	Posted Speed Limit (mph)
West of 7th Street	6/21/12	Eastbound	42	35
East of Banta Road	9/11/13	Westbound	46	25
East of 6th Street	2/20/14	Eastbound	50	35
West of Berry Avenue	2/20/14	Eastbound	58	45

Source: Fehr & Peers (2017).
mph = miles per hour

Existing Intersections Operations. Table Y: Existing Intersection Level of Service and Delay presents the LOS and intersection delay in seconds for the study intersections (see **Appendix F** for detailed analysis results) based on the microsimulation analysis results, except at the Grant Line Road/11th Street roundabout intersection, where analysis results from the SIDRA software were used. Under existing conditions, all of the study intersections operate at LOS B or better during both the a.m. and p.m. peak hours, meeting the County's goal of LOS D or better. The analysis model results matched observed peak-hour conditions.

Table Z: Existing Peak-Hour Queuing Analysis shows the 95th percentile queues in feet during the peak hours at each of the study intersections based on the microsimulation analysis results, except at the New Roadway/11th Street intersection, where analysis results from the SIDRA software were used. These queues are consistent with observed field conditions.

Table Y: Existing Intersection Levels of Service and Delay

Intersection	Traffic Control	Peak Hour	LOS	Average Delay (Seconds)
1. Banta Road/Grant Line Road	Side-Street Stop	AM	A (A)	2 (4)
		PM	A (A)	2 (8)
2. 6th Street/Grant Line Road	Side-Street Stop	AM	A (A)	2 (7)
		PM	A (B)	2 (11)
3. 7th Street/Grant Line Road	Signal	AM	A	7
		PM	A	4
4. G Street/Grant Line Road	Side-Street Stop	AM	A (A)	2 (7)
		PM	A (A)	2 (8)
5. Bird Road/Grant Line Road	Side-Street Stop	AM	A (A)	1 (5)
		PM	A (A)	3 (7)
6. Berry Avenue/Grant Line Road	Side-Street Stop	AM	A (A)	1 (4)
		PM	A (A)	1 (5)
7. Stoneridge Drive/Grant Line Road	Side-Street Stop	AM	A (A)	1 (5)
		PM	A (A)	1 (6)
8. 11th Street/Grant Line Road	Roundabout	AM	A	9
		PM	A	8
9. I-5 SB Ramps/Kasson Road	Side-Street Stop	AM	A (A)	3 (6)
		PM	A (A)	1 (5)
10. I-5 NB Ramps/Kasson Road	Side-Street Stop	AM	A (A)	2 (4)
		PM	A (A)	1 (10)

Table Y: Existing Intersection Levels of Service and Delay

Intersection	Traffic Control	Peak Hour	LOS	Average Delay (Seconds)
11. New Roadway/11th Street	Two-Lane Roundabout	Does Not Exist		
12. New Roadway/Bird Road	Signal			
13. New Roadway/7th Street Extension	Side-Street Stop			
14. New Roadway/Banta Road	None ("Free"Movements)			

Source: Fehr & Peers (2017).
Notes: For intersections controlled by a traffic signal or roundabout, the overall intersection LOS and delay are presented. For side-street stop intersections, the overall intersection delay is presented, with the worst side-street movement LOS and delay in parenthesis. Delay is in seconds.
I = Interstate
LOS = level of service
NB = northbound
SB = southbound

Table Z: Existing Peak Hour Queuing Analysis

Intersection	Movement[1]	Available Storage (ft)	AM Peak Hour 95th Percentile Queue (ft)	PM Peak Hour 95th Percentile Queue (ft)
1. Banta Road/Grant Line Road	NB-LTR	>1,000	37	41
	EB-TR	>1,000	0	0
	WB-LT	1,430	13	40
2. 6th Street/Grant Line Road	NB-LTR	380	18	17
	EB-TR	1,430	0	0
	WB-LT	480	5	14
3. 7th Street/Grant Line Road	NB-LTR	260	51	33
	SB-LTR	400	98	59
	EB-LTR	480	86	142
	WB-LTR	480	147	109
4. G Street/Grant Line Road	NB-LTR	360	7	8
	EB-TR	480	0	0
	WB-LT	2,580	9	48
5. Bird Road/Grant Line Road	NB-LTR	690	44	39
	EB-TR	2,580	0	2
	WB-LT	1,020	0	12
6. Berry Avenue/Grant Line Road	SB-LTR	>1,000	5	6
	EB-LT	1,020	11	19
	WB-TR	900	0	0
7. Stoneridge Drive/Grant Line Road	NB-LTR	490	28	22
	EB-TR	900	0	0
	WB-LT	730	0	15
8. 11th Street/Grant Line Road	NB-LTR	>1,000	53	57
	SB-LTR	>1,000	111	77
	EB-LTR	730	14	64
	WB-LTR	1,990	11	10
9. I-5 SB Ramps/Kasson	SB-LTR	550	104	57
	EB-TR	1,990	0	0
	WB-L	170	4	2

Table Z: Existing Peak Hour Queuing Analysis

Intersection	Movement[1]	Available Storage (ft)	AM Peak Hour 95th Percentile Queue (ft)	PM Peak Hour 95th Percentile Queue (ft)
	WB-T	1,460	0	0
10. I-5 NB Ramps/Kasson	NB-LTR	630	60	40
	SB-LTR	290	18	17
	EB-L	120	4	4
	EB-TR	1,470	0	0
	WB-L	140	35	38
	WB-TR	>1,000	0	0
11. New Roadway/11th Street	Does Not Exist			
12. New Roadway/Bird Road				
13. New Roadway/7th Street Extension				
14. New Roadway/Banta Road				

Source: Fehr & Peers (2017).
[1] NB = northbound, SB = southbound, EB = eastbound, WB = westbound, L = left turn movement, T = through movement, R = right turn movement
ft = foot/feet I = Interstate

Existing Roadway Segment Operations Table AA: Existing Roadway Segment Level of Service presents the existing daily volume roadway segment analysis. As shown below, Grant Line Road (Kasson Road) currently operates at LOS A.

Table AA: Existing Roadway Segment Level of Service

Location	Facility Type	Daily Volume	LOS
Grant Line Road just east of Banta Road	Two-lanes *with no* turning lanes	7,300	A
Grant Line Road just west of Bird Road	Two-lanes *with no* turning lanes	6,900	A
Kasson Road just east of 11th Street	Two-lanes *with no* turning lanes	2,600	A
Kasson Road just east of I-5/Kasson Road interchange	Two-lanes *with no* turning lanes	3,500	A
New Roadway	Does Not Exist		

Source: Fehr & Peers (2017).
LOS = level of service
I = Interstate

4.9.1.6 Existing Collision Analysis

Five years of collision data (January 1, 2009, through December 31, 2013) on Grant Line Road from the San Joaquin County Traffic Engineering Department were reviewed. **Table AB: Collision History** summarizes the collision statistics recorded on Grant Line Road between Banta Road and 11th Street.

Table AB: Collision History

Total Collisions	Total Fatalities	Total Injuries	Types of Collisions			
			Sideswipes	Rear-End	Broadsides	Other
38	0	26	8	12	8	10

Source: Fehr & Peers (2017).
ft = foot/feet
I-5 = Interstate 5

A total of 38 collisions were reported in the 5-year period. Although no fatalities occurred, 26 people were injured in 14 of the 38 collisions. The majority of the collisions (12) were rear-end collisions. The next most frequent accident types were sideswipe and broadside collisions.

Table AC: Collision Rate shows the annual collision rate on Grant Line Road between Banta Road and 11th Street and the statewide average rate for similar roadways. The calculated collision rate is about 57 percent higher than the statewide average for rural two-lane conventional highways. The calculated injury rate is about 139 percent higher than the State average. High travel speeds (above the posted speed limit) and lack of turn lanes at the intersections contribute to the above-average collision rate on Grant Line Road, as the majority of collisions were reported as rear-end collisions and over 35 percent of the collisions had "unsafe speed" listed as the primary collision factor.

Table AC: Collision Rate

Grant Line Road Calculated Rate			Statewide Average Rate		
Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries
1.88	0.00	1.29	1.20	0.04	0.54

Source: Fehr & Peers (2017).

4.9.2 Regulatory Framework

4.9.2.1 Federal

Federal highway standards are implemented by Caltrans. The federal regulatory framework implemented by Caltrans is discussed below in Section 4.9.2.2.

4.9.2.2 State

Caltrans is responsible for planning, designing, constructing, and maintaining all State-owned and operated roadways in San Joaquin County. Any improvements or modifications to the State highway system within San Joaquin County must be approved by Caltrans. The County and other local agencies have no ability to unilaterally make improvements to the State highway system. As the Project is a local road development project funded by local monies, the State regulatory framework would not be applicable.

4.9.2.3 Local

The San Joaquin County 2035 General Plan Environmental Impact Report discusses various local regulations that would be applicable to the proposed Project. These regulations include the Regional Bicycle, Pedestrian, and Safe Routes to School (BP-SRtS) Master Plan (San Joaquin Council of Governments 2012); the Regional Transportation Impact Fee Program; the 2014 Regional Transportation Plan/Sustainable Communities Strategy; the Interregional Truck Operations on I-5 and State Route 99 (SR-99) and Surface Transportation Assistance Act (STAA) Routes Improvement Study; and the Regional Congestion Management Program.

Regional Bicycle, Pedestrian, and Safe Route to School Master Plan. The SJCOG, serving as the regional transportation planning agency for San Joaquin County, adopted the BP-SRtS Master Plan in September 2012. The BP-SRtS Master Plan provides recommended bicycle and pedestrian projects for San Joaquin County and its seven incorporated cities. The BP-SRtS Master Plan was developed to identify projects of regional significance in order to prioritize funding and facilitate project implementation, as well as to help set Measure K funding priorities. The plan identifies the development of Class III bicycle facilities on Grant Line Road from 11th Street to the Tracy city limits as a priority project for the County (San Joaquin County Council of Governments 2012).

Regional Transportation Impact Fee Program. The Regional Transportation Impact Fee program is intended to impose a fee to provide funding for transportation and transit improvements that help mitigate the impact of new growth. New developments throughout the County are subject to the fee, which is proportional to the impact on the regional transportation network caused by the new development. The funding derived from the Regional Transportation Impact Fee program is used in combination with other funding available to complete the needed transportation and transit improvements (San Joaquin Council of Governments 2017).

San Joaquin County Traffic Impact Mitigation Fee Program. The County of San Joaquin has a program to collect traffic impact mitigation fees. The fees are collected to finance transportation facilities needed to accommodate new or expanded development within the unincorporated areas of San Joaquin County (San Joaquin County 2016b).

Regional Transportation Plan/Sustainable Communities Strategy. The SJCOG developed and adopted the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) on June 26, 2014. The RTP/SCS complies with State and federal transportation planning requirements required of urbanized counties for a comprehensive, long-range transportation plan. The RTP/SCS is a fiscally constrained, multimodal plan that identifies regional transportation improvements needed to improve system maintenance and operations and to improve mobility and accessibility countywide (San Joaquin Council of Governments 2014).

Interregional Truck Operations on I-5 and SR-99 and STAA Routes Improvement Study. The SJCOG and the Sacramento Council of Governments sponsored the Interregional Truck Operations on I-5 and SR-99 and STAA Routes Improvement Study (STAA Study). The federal STAA of 1982 aligns with state and local regulations and legislation, and governs the operation of STAA vehicles. STAA allowed semi-trailers 48 feet in length to operate on United States highways designated as the National Network. The National Network and the Terminal Access designations were intended to

characterize segments of the route the truck took from one warehouse to another. STAA delegated the administration of designating terminal access routes to the states. California elected to follow an application process whereby routes would be designated as Terminal Access on a demand basis, through requests initiated by the party requiring freight access to the National Network. However, increasing deployment of the 48-foot and larger trailers led to an increase in violation and enforcement actions. The STAA study seeks to provide solutions to address shortcomings in current efforts to enforce STAA regulations or expand the Terminal Access designation to newer connections (The Tioga Group 2013). The Supplemental Project Assessment, prepared in July 2012, identified 10 priority STAA improvement areas within Sacramento and San Joaquin counties. Grant Line Road between I-5 and MacArthur Drive, including Paradise Road and Pescadero Road, was identified as a priority STAA improvement project.

Regional Congestion Management Program. As the designated Congestion Management Agency for San Joaquin County, the SJCOG is required to maintain the State-mandated Congestion Management Program (CMP). The CMP is the State Legislature's effort to reduce congestion on highways and local regionally significant roadways in California. It includes a land use analysis program to address regional transportation impacts of local land use decisions. The SJCOG is required to monitor the RCMP and biennially determine if each local jurisdiction is in conformance with the RCMP. The SJCOG must also annually determine that its member agencies are complying with the Measure K Renewal Ordinance. The RCMP stipulates that a two-tiered review of affected CMP roadways must be completed for proposed residential, commercial, retail, and industrial development in San Joaquin County.

The first tier is a qualitative assessment of consistency with the SJCOG's regional planning documents. The second tier determines whether the development project generates 125 or more peak-hour trips or 500 or more daily trips. Development projects that meet the second-tier requirements must be evaluated for significant impacts per the CMP significance criteria under CEQA. As the proposed Project would not generate vehicle trips, but would only accommodate projected future trips, it is assumed that only the Tier 1 review process is required.

4.9.3 Impacts and Mitigation Measures

This section discusses the potential transportation impacts associated with the proposed Project and describes measures to mitigate those impacts. The project traffic forecasting method (trip generation, distribution, and assignment) and analysis results are presented.

4.9.3.1 Criteria of Significance

Based on Appendix G of the *CEQA Guidelines*, the Project could result in a significant impact if it would:

A. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

B. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

E. Result in inadequate emergency access.

F. Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.9.3.2 Project Impacts

Impact Threshold TRANS-A: Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system under existing conditions, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Once completed, the proposed Project would not generate an increase in traffic volumes along existing Grant Line Road and would not conflict with applicable plan or ordinances establishing measures of effectiveness. This roadway would operate at improved LOS once the proposed Project is operational. The Project would be designed with a wide shoulder on each side of the road that can be signed as a Class III bicycle route. While existing Grant Line Road would be converted to cul-de-sacs on each end, the proposed Project would allow the development of Class III facilities along the new roadway. Further, the conversion of existing Grant Line Road from a through-street to a local roadway with cul-de-sacs would not preclude the development of bicycle lanes along the roadway, which could potentially include bicycle and pedestrian access to the roadway network at either end of the corridor. As such, impacts would be **less than significant**.

Impact Threshold TRANS-B: Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by county congestion management agency for designated roads or highways.

Once operational, the proposed Project would not contribute to an increase in traffic volumes along Grant Line Road as the Project would construct a four-lane bypass for through-traffic around the community of Banta. The proposed Project is not considered a traffic-generating project as it has been designed only to accommodate an anticipated increase in vehicular traffic associated with growth in San Joaquin County. Since the Project would not increase traffic volumes along Grant Line Road or Kasson Road it would not deteriorate the existing LOS on Grant Line Road or Kasson Road to below San Joaquin County and SJCOG standards.

The proposed Project would create four new intersections along the new roadway. These intersections are also anticipated to operate at acceptable levels of service under Existing plus Project conditions since existing traffic volumes are over 50 percent lower than Cumulative Year 2035 traffic volumes (please refer to Tables 10 and 11 in **Appendix F**). As such, implementation of the proposed Project would not exceed or conflict with LOS standards as established by the County or SJCOG and impacts would be **less than significant**. A discussion of the Cumulative Year 2035 including potential LOS cumulative impacts to the Grant Line Road/11th Street roundabout is presented below in Chapter 6.1.

Impact Threshold TRANS-C: Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

The closest airport to the Project site is Tracy Municipal Airport, located approximately 5 miles to the southwest. The proposed Project does not include the development of tall structures that would interfere with Federal Aviation Administration airspace or private airplane use airspace. Project implementation, therefore, would not result in a change of air traffic patterns that would result in substantial aviation risks. As such, **no impact** would occur.

Impact Threshold TRANS-D: Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Development of the proposed Project would utilize design features that would reduce hazards for vehicles traveling along Grant Line Road. Grant Line Road would have two travel lanes in each direction, each 12 feet wide, with a 14-foot-wide median. The median would be either landscaped or would accommodate 12-foot-wide left-turn lanes near intersections with local roadways. Currently, lack of turn lanes at the intersections contribute to the above-average collision rate on Grant Line Road, which calculated at about 57 percent higher than the statewide average for rural two-lane conventional highways.

Additionally, the proposed Project would construct a new four-lane arterial that would bypass the community of Banta on the south side and continue in a southeasterly direction to connect to 11th Street. The bypass would provide a throughway around the community of Banta and limit existing Grant Line Road to local traffic through the development of cul-de-sacs on each side of existing Grant Line Road. Thus, implementation of the proposed Project would not substantially increase hazards due to design features or incompatible uses. This impact would be **less than significant**.

Impact Threshold TRANS-E: Would the Project result in inadequate emergency access?

The San Joaquin County Multi-Hazard Functional Plan identifies procedures for the coordination of planned response to large-scale disasters. The Multi-Hazard Functional Plan describes emergency management organization, roles, and responsibilities, and analyzes various hazard risks; however, the plan does not identify specific routes for emergency access or evacuation. Any temporary construction traffic detours would be in accordance with County standards and would not interfere with emergency access or evacuation in the area or with the County Multi-Hazard Functional Plan.

Further, the proposed Project would be developed in accordance with local regulations guiding the design of roadways for emergency access. Impacts would be **less than significant**.

Impact Threshold TRANS-F: Would the Project conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities?

The proposed Project is located in a rural area of unincorporated San Joaquin County. Sidewalks are not provided along the vast majority of Grant Line Road in the study area, with the exception of sidewalks and marked crosswalks on some legs of the Grant Line Road intersections with 6th Street, 7th Street, and 11th Street. The crosswalks at 6th Street and 7th Street are school crossings. The sidewalk/school crosswalks on 6th Street and 7th Street are used often by pedestrian traffic traveling between residential units on the south side of Grant Line Road and the elementary school on the north side of Grant Line Road. No transit routes or facilities are provided on Grant Line Road in the study area.

The Project would be designed to accommodate a wide shoulder on each side of the road that can be signed as a Class III bicycle route. The SJCOG's BP-SRtS Master Plan identifies the development of Class III bicycle facilities on Grant Line Road from 11th Street to the Tracy city limits as a priority project for the County. As discussed under Impact Threshold TRANS-1, while existing Grant Line Road would be converted to cul-de-sacs on each end, the proposed Project would allow for the development of Class III facilities along the new roadway. Further, the conversion of existing Grant Line Road from a through-street to a local roadway with cul-de-sacs would not preclude the development of bicycle lanes along the roadway, which could potentially include bicycle and pedestrian access to the roadway network at either end of the corridor. Therefore, the proposed Project would not conflict with alternative transportation policies, plans, or programs. Impacts would be **less than significant**.

4.9.3.3 Significance Level after Mitigation Implementation

Under Impact Threshold TRANS-A, mitigation measures would not be required as impacts would be **less than significant (LTS)**. Under Impact Threshold TRANS-B, mitigation measures would not be required as impacts would be **less than significant (LTS)**. Under Impact Threshold TRANS-C, mitigation measures would not be needed as **no impacts (NI)** would occur. Under Impact Threshold TRANS-D, mitigation measures would not be required as impact would be **less than significant (LTS)**. Under Impact Threshold TRANS-E, mitigation measures would not be required as impact would be **less than significant (LTS)**. Under Impact Threshold TRANS-F, mitigation measures would not be required as impact would be **less than significant (LTS)**.

5.0 ALTERNATIVES ANALYSIS

The *CEQA Guidelines* require the analysis of a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most of the Project's basic objectives and avoid or substantially lessen any of the significant effects of the Project. The range of alternatives required in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice (State of California, 2010). CEQA states that an EIR should not consider alternatives "whose effects cannot be ascertained and whose implementation is remote and speculative."

This chapter describes the alternatives to the proposed Project, evaluates the significant environmental impacts associated with the alternatives relative to those resulting from the proposed Project, and discusses the ability of the alternative to meet the Project objectives. Alternatives that were considered, but rejected, are also described. A discussion of the environmentally superior alternative is included in this chapter as required by CEQA.

The following objectives, listed in Chapter 3.0, Project Description, of this Final EIR, are repeated here to help inform this evaluation of alternatives:

- Alleviate congestion
- Improve safety

The proposed Project has been described and analyzed in the previous chapters and in the Initial Study with an emphasis on significant impacts resulting from the proposed Project, and mitigation measures have been recommended to reduce or avoid these impacts. The following discussion is intended to inform the public and decision-makers of the relative impacts of three potentially feasible alternatives to the proposed Project. The Project has been analyzed throughout this Final EIR, and for that reason, the No Project Alternative and Alternative 4 are the alternatives discussed in this section.

The following discussion analyzes potential environmental impacts of the No Project Alternative and Alternative 4 compared to the impacts associated with the proposed Project; the discussion includes a determination as to whether the No Project Alternative or Alternative 4 would reduce, eliminate, or create new significant impacts.

5.1 NO PROJECT ALTERNATIVE

5.1.1 Principal Characteristics

Under the No Project Alternative, construction and operation of the proposed Project would not occur. The existing conditions are the same as for the proposed Project. The current uses of the Project site would be maintained. A bypass for Grant Line Road would not be developed and existing traffic would continue to travel through Banta without changes to the existing circulation system. The LOS for local roadways and intersections would continue to operate as under existing conditions and would continue to deteriorate in the future as surrounding land uses are built out. The No

Project Alternative would fail to meet the Project objectives, including alleviating congestion and improving safety.

5.1.2 Analysis of the No Project Alternative

The No Project Alternative is evaluated for all environmental topics analyzed in this Final EIR and the Initial Study for the proposed Project.

5.1.2.1 Aesthetics

Under the No Project Alternative, the land within the Project boundary would not be converted to a public use roadway and the visual characteristics of the Project site would remain as is under existing conditions. Sensitive receptors (i.e., residential units adjacent to the proposed Project) would continue to have views of the existing agricultural land if the No Project Alternative is implemented. Aesthetic impacts of the proposed Project were determined to be significant and unavoidable to some of the sensitive receptors. However, as the No Project Alternative would not impact the visual quality or character of the Project site, it would have fewer impacts to aesthetics compared to the proposed Project.

5.1.2.2 Agriculture and Forestry Resources

Portions of the Project site would continue to be used for agricultural purposes under the No Project Alternative. As such, agricultural production would likely continue. With the incorporation of mitigation measures, the proposed Project would have less than significant impacts on agricultural resources. Neither the No Project Alternative nor the proposed Project would impact forestry resources, as none are designated within the area. As the No Project Alternative would have no impacts on agriculture and forestry resources, impacts would be less than the proposed Project.

5.1.2.3 Air Quality

The No Project Alternative would not result in grading, excavating, or demolition activities on the site, which would otherwise cause pollutants from construction emissions, including PM, fugitive dust, and construction equipment pollutants, as well as TACs from and asbestos-containing materials if any such materials are found in the existing utility lines within the agricultural land. In addition, the No Project Alternative would not generate construction-related or operational-period vehicle trips. Therefore, the alternative would avoid the air quality impacts associated with the proposed Project, namely emissions of ROGs, NO_X, and PM, as well as TACs from asbestos-containing materials. As such, air quality impacts would be less from implementation of the No Project Alternative when compared to implementation of the proposed Project.

5.1.2.4 Biological Resources

Under the No Project Alternative, the new Grant Line Road would not be developed and circulation would remain the same as under existing conditions. As such, natural habitats around the Project area as well as sensitive species would not be disturbed or taken with implementation of the No Project Alternative. Since implementation of the proposed Project (even with mitigation) has the potential to impact natural habitat and sensitive species, the No Project Alternative would have fewer impacts to biological resources in the area.

5.1.2.5 Cultural Resources

Under the No Project Alternative, no ground disturbance would be required. No unknown cultural or paleontological resources, or human remains, would be uncovered. Impacts under the No Project Alternative would be less than the proposed Project.

5.1.2.6 Geology and Soils

Under the No Project Alternative, the Project site would be subject to the same risk of seismic earth-shaking and seismic-related ground failure. The proposed Project was determined to have less than significant impacts on geology and soils. However, as no structures would be developed on the Project site and no grading or excavation would occur under the No Project Alternative, impacts would be less than the proposed Project.

5.1.2.7 Greenhouse Gas Emissions

Under the No Project Alternative, no additional GHGs would be generated through the use of fossil fuels for construction or additional vehicle trips associated with development. Therefore, the No Project Alternative would not generate any GHG emissions and would not result in impacts to global climate change.

5.1.2.8 Hazards and Hazardous Materials

The No Project Alternative would not include construction or ground disturbance. Therefore, the No Project Alternative would not result in construction impacts associated with the use and transport of hazardous materials, including fuels, oils, lubricants, asphalt products, other petroleum products, and solvents. However, if the Project site is utilized for agricultural production under the No Project Alternative, agricultural chemicals could continue to be used on the site. Impacts from hazards and hazardous materials under the No Project Alternative would be less than the proposed Project.

5.1.2.9 Hydrology and Water Quality

The No Project Alternative would not result in construction activities on the site, nor would it result in any trenching or grading with the potential to reach groundwater. The No Project Alternative would not result in the release of construction-related hazardous materials, or the emission of other pollutants that could degrade water quality. If the site is utilized for agricultural production under the No Project Alternative, agricultural chemicals could continue to be used on the site. Hydrological and water quality impacts under the No Project Alternative would be less than the proposed Project.

5.1.2.10 Land Use and Planning

Under the No Project Alternative, the land currently zoned agricultural would not be converted to urbanized uses associated with roadway infrastructure. As the land use under the proposed Project is consistent with surrounding land uses and allowable under the current land use designation at the Project site, the proposed Project was determined to have no impact on land use and planning. Therefore, impacts under the No Project Alternative would be similar to those under the proposed Project.

5.1.2.11 Mineral Resources

Under the No Project Alternative, as with the proposed Project, there would be no loss of a known mineral resource and, therefore, no impacts to mineral resources. Impacts under the No Project Alternative would be similar to those under the proposed Project.

5.1.2.12 Noise

The No Project Alternative would not result in new construction and its associated noise. The No Project Alternative would not develop a new roadway adjacent to existing residential units generating an increase in noise levels to these sensitive receptors. The No Project Alternative would not generate new vehicle trips that would increase noise levels in the vicinity of the Project site. Noise levels along Grant Line Road would remain similar to existing conditions if the No Project alternative is implemented. Therefore, impacts under the No Project Alternative would be less than the proposed Project.

5.1.2.13 Population and Housing

Under the No Project Alternative, no new or temporary residents would be added to San Joaquin County, as no construction would occur on the Project site. The proposed Project would not increase population or necessitate the removal or addition of housing in unincorporated San Joaquin County. Impacts would be similar under the No Project Alternative and the proposed Project.

5.1.2.14 Public Services

Under the No Project Alternative, no new or temporary residents would be added to San Joaquin County or the community of Banta, and no buildings or structures would be developed on the Project site. The No Project Alternative would not increase demand for fire and police protection, schools, parks, or other public services. Therefore, impacts under the No Project Alternative would be similar when compared to the proposed Project.

5.1.2.15 Recreation

Under the No Project Alternative, no new or temporary residents would be added to San Joaquin County or the community of Banta. The No Project Alternative would not increase the use of existing parks or other recreational facilities. Therefore, impacts under the No Project Alternative would be similar when compared to the proposed Project.

5.1.2.16 Transportation/Traffic

The No Build Alternative would retain the existing circulation layout where Grant Line Road passes through the community of Banta. Grant Line Road east of 11th Street would maintain the existing intersection traffic control and lane configuration. Under the Year 2035 plus No Build Alternative conditions, Grant Line Road just east of Banta Road and Grant Line Road just west of Bird Road would operate at LOS F, while Kasson Road just east of 11th Street and Kasson Road just east of the I-5/Kasson Road Interchange would operate at LOS A. Comparatively, with implementation of the proposed Project, all of these roadway segments would operate at LOS A under Year 2035 plus Project conditions.

Ten intersections were analyzed under Existing conditions and Year 2035 plus No Build Alternative conditions. The results are described below:

- Three intersections (Banta Road/Grant Line Road, 6th Street/Grant Line Road, and 7th Street/Grant Line Road) would operate at LOS F conditions under the Year 2035 plus No Build Alternative conditions during the a.m. peak hour. Five intersections (Banta Road/Grant Line Road, 6th Street/Grant Line Road, 7th Street/Grant Line Road, G Street/Grant Line Road, and Bird Road/Grant Line Road) would operate at LOS F conditions under the Year 2035 plus No Build Alternative conditions during the p.m. peak hour.

- One intersection (G Street/Grant Line Road) would operate at LOS B conditions under the Year 2035 plus No Build Alternative conditions during the a.m. peak hour.

- Five intersections (Bird Road/Grant Line Road, Berry Avenue/Grant Line Road, Stoneridge Drive/Grant Line Road, I-5 Southbound Ramps/Kasson Road, and I-5 Northbound Ramps/Kasson Road) would operate at LOS A conditions under the Year 2035 plus No Build Alternative conditions during the a.m. peak hour. Three intersections (Stoneridge Drive/Grant Line Road, I-5 Southbound Ramps/Kasson Road, and I-5 Northbound Ramps/Kasson Road) would operate at LOS A conditions under the Year 2035 plus No Build Alternative conditions during the p.m. peak hour.

- One intersection (11th Street/Grant Line Road) would operate at LOS C during the a.m. and p.m. peak hours under the Year 2035 plus No Build Alternative conditions.

- The Berry Avenue/Grant Line Road intersection would operate at LOS D during the p.m. peak hour under the Year 2035 plus No Build Alternative conditions.

Comparatively, the Year 2035 plus Project conditions would result in 9 of the 10 study intersections operating at LOS A during the a.m. peak hour and 8 of the 10 study intersections operating at LOS A during the p.m. peak hour. As such, the proposed Project would have fewer impacts on traffic and circulation when compared to the No Project Alternative.

5.1.2.17 Tribal Cultural Resources

Under the No Project Alternative, no ground disturbance would be required. No unknown tribal cultural resources would be uncovered. Impacts under the No Project Alternative would be less than the proposed Project.

5.1.2.18 Utilities/Service Systems

Under the No Project Alternative, no utilities or service systems would be interrupted during development of the new road. No additional wastewater or solid waste would be generated. Therefore, impacts to utilities or services systems would be less compared to implementation of the proposed Project.

5.2 ALTERNATIVE 4

5.2.1 Principle Characteristics

The Alternative 4 design is a 2.4-mile-long corridor along Grant Line Road/Kasson Road in the southwestern portion of San Joaquin County. The Alternative 4 site begins at the eastern boundary of the City of Tracy; continues east through the unincorporated community of Banta, under the I-5 overcrossing; and terminates just to the west of Mancuso Road. The boundary of Alternative 4 is approximately 96.3 acres in size. Alternative 4 is located along Grant Line Road moving east from the city limits of Tracy in San Joaquin County in the rural community of Banta. According to the City of Tracy General Plan, land uses at the western terminus of Alternative 4 are industrial. According to the San Joaquin General Plan, the land surrounding Alternative 4 is designated for limited industrial, medium-density residential, rural residential, and public space uses. Uses on the surrounding land include active agricultural fields and outbuildings, rural, low- and medium-density residential units, industrial and retail commercial space, and County-owned roadway right-of-way.

Alternative 4 would construct a four-lane arterial that begins at Chabot Court and continues southeasterly starting at Banta Road to bypass the community of Banta on the south side. It would then continue northeasterly to connect back to the existing Grant Line Road alignment near its intersection with 11th Street. Between Bird Road and 11th Street, the new road would be constructed along the north side of existing Grant Line Road, allowing the existing two-lane road to continue to serve local traffic as a frontage road in the Stoneridge neighborhood. Likewise, Grant Line Road between Banta Road and Bird Road would remain as a two-lane road to serve local traffic.

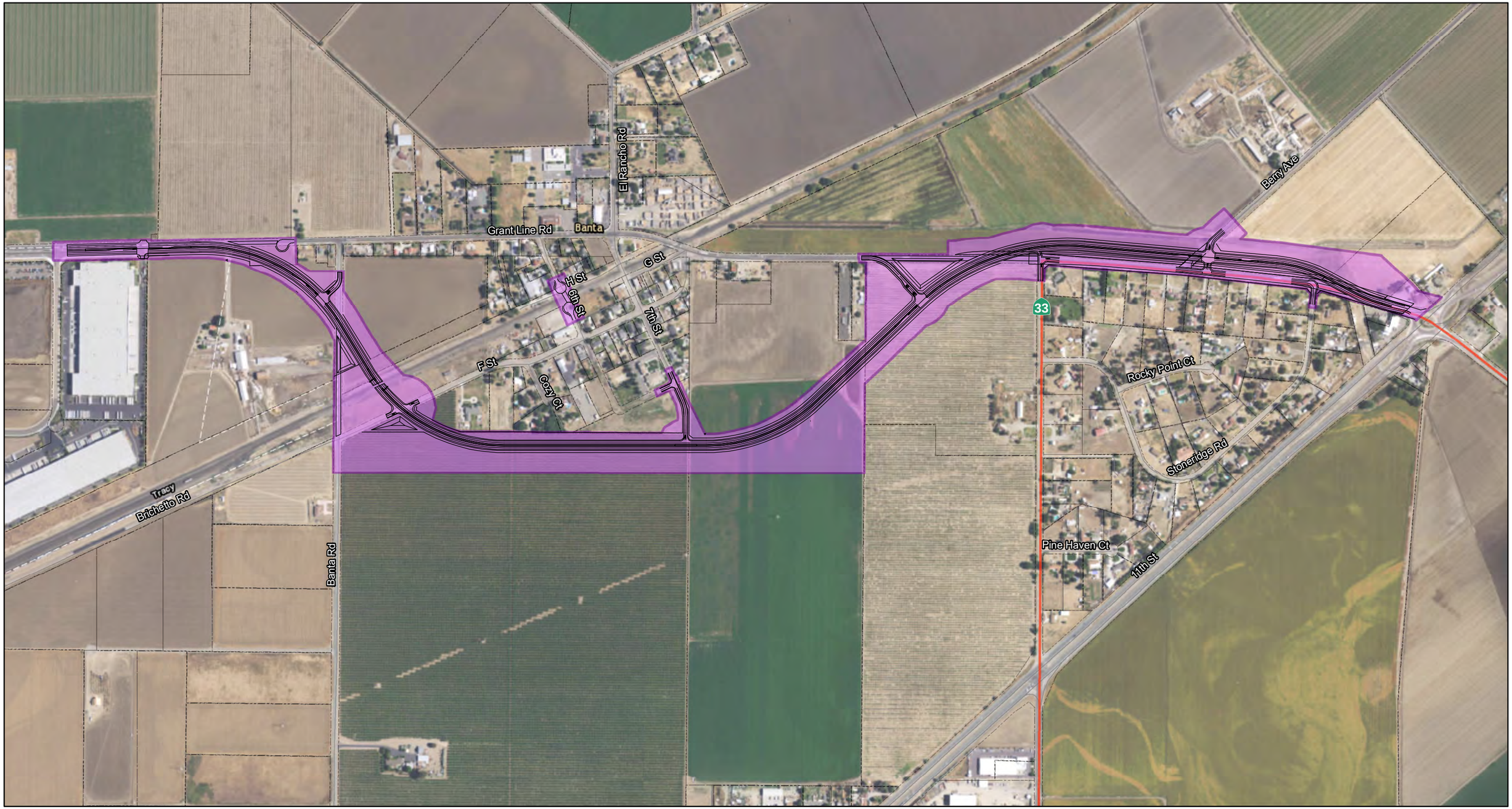
Grant Line Road would have two travel lanes in each direction, each 12 feet wide, with a 14-foot-wide median. The median either would be landscaped, or would accommodate 12-foot-wide left-turn lanes near intersections with local roadways.

The existing at-grade railroad crossings at Banta Road and 6th Street would be closed and a new at-grade railroad crossing at the new four-lane Grant Line Road would be constructed.

Standard right-of-way width would be 110 feet for Grant Line Road. Existing roads such as Banta Road, Berry Avenue, and Bird Road all have 60 feet of existing right-of-way that would need to be maintained. Additional right-of-way would be needed to accommodate outside turn lanes at intersections and for drainage basin locations. Other local roads would have a right-of-way of either 50 feet or 60 feet. **Figure 9: Alternative 4 Design** shows the location and design of Alternative 4.

5.2.2 Analysis of Alternative 4

Alternative 4 is evaluated for all environmental topics analyzed in this Final EIR and the Initial Study for the proposed Project.



LSA

LEGEND

- Project Area (96.33 ac)
- Parcels
- Alternative 4 Project Design

N

0 350 700
FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (06/2016)

I:\MKT1704\GIS\Reports\EIR\Fig6_Alternative 4.mxd (12/4/2017)

FIGURE 9

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 4 Design

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5.2.2.1 Aesthetics

Alternative 4 is located in an area that is topographically flat and dominated by views of agricultural land and of residential/commercial uses associated with the community of Banta. The San Joaquin General Plan does not designate any land within, adjacent to, or near Alternative 4 as a scenic vista. Based on public outreach, some residents in the Alternative 4 area have unobstructed views of agricultural land which they personally consider scenic vistas. Implementation of Alternative 4 would have similar impacts to "close in" scenic vistas as some of the residential units would require installation of barriers to reduce impacts associated with glare and noise. Such noise barriers would obstruct the "close in" scenic vistas of agricultural land at nearby residential units. There would be no feasible alternatives or mitigation measures to reduce this potential impact; as such, Alternative 4 would have a significant and unavoidable impact on "close in" scenic vistas. Based on the change from agricultural land to road right-of-way, both Alternative 4 and the proposed Project would change the character and quality of foreground views of landscape as seen by nearby sensitive receptors. The closest State Scenic Highway to Alternative 4 is SR-580 from I-5 to I-205. As such, implementation of Alternative 4 would not damage scenic resources within a State Scenic Highway. Light and glare would be generated by Alternative 4 from the at-grade railroad crossing, street lighting, and the introduction of vehicle traffic, which would potentially impact nighttime views from residences in the southern portion of Banta along the road alignment, particularly along Brichetto Road/F Street, 7th Street, 6th Street, and Cozy Court. Alternative 4 would implement similar mitigation measures as the proposed Project (specifically **Mitigation Measures AES-1**) to reduce impacts associated with lighting and glare; however, Alternative 4 would have the potential to impact more residential units when compared to the proposed Project. Although Alternative 4 and the proposed Project would have significant and unavoidable impacts on locally important "close in" scenic vistas and foreground changes in land character and quality, the proposed Project would have a lesser degree of impact when compared to Alternative 4. This is due to the more sensitive receptors that would be impacted under Alternative 4 when compared to the proposed Project.

5.2.2.2 Agriculture and Forestry Resources

Alternative 4 is approximately 96.3 acres in size and is anticipated to result in the permanent conversion of 19.3 acres of Prime Farmland and 14.8 acres of Unique Farmland (a total loss of 34.1 acres of Important Farmland). In order to determine if such a loss is significant, the LESA Model was prepared, which indicated a total score of 56.4. This is considered a significant impact only if the LE and SA subscores are each greater than or equal to 20 points. In this case, the LE and SA subscores were 27.6 and 28.8 points, respectively, indicating that implementation of Alternative 4 would have a significant impact on Important Farmland. Similarly, implementation of the proposed Project would result in the permanent conversion of 19.1 acres of Important Farmland (consisting entirely of Prime Farmland). The LESA Model was also run for the proposed Project, indicating a total score of 58.8 points, with an LE and SA subscore of 31.0 and 27.8 points, respectively. Alternative 4 would convert 32.53 acres of designated agricultural land compared to 27.3 acres that would be converted by the proposed Project. Similar to the proposed Project, Alternative 4 would implement **Mitigation Measure AG-1** to reduce impacts associated with the conversion of agricultural land to road right-of-way and the loss of Important Farmland. Alternative 4 would convert a similar amount of agricultural land and would implement the same mitigation measure as the proposed Project to

reduce impacts to agricultural resources. Based on this, Alternative 4 and the proposed Project would have similar impacts to agricultural resources if either is implemented.

5.2.2.3 Air Quality

Construction activities associated with Alternative 4 would include the use of construction vehicles and equipment that would increase air pollutants associated with burning fossil fuel and dust on a short-term basis (a 17- to 24-month period). During the 24-month construction period, excavation, grading, paving, and construction of the new road and associated drainage basins and intersection controls would occur. Blowing dust from on-site construction activities is a cause of increased PM_{10} and $PM_{2.5}$ concentrations. The construction activities discussed above would have the potential to contribute to the SJVAPCD's existing California nonattainment status for particulate air quality, contributing to a slight increase to PM_{10} and $PM_{2.5}$. Implementation of **Mitigation Measures AIR-1** and **AIR-2** would reduce impacts to nearby sensitive receptors and would result in compliance with the SJVAPCD's regulations for construction emissions (NO_2 and PM_{10} emissions) and fugitive dust.

Once operational, implementation of Alternative 4 would not increase emissions of TACs. Alternative 4 would add a roadway to serve the existing projected traffic in the vicinity, and would divert the majority of traffic from existing Grant Line Road to the new route. Impacts would be less than significant with incorporation of **Mitigation Measures AIR-1** and **AIR-2.** As such, Alternative 4 would have similar impacts associated with air quality emissions during construction and operation when compared to the proposed Project.

5.2.2.4 Biological Resources

While Alternative 4 is located in the same general area as the proposed Project, each would have different impacts on biological resources. Alternative 4 follows the same alignment as the proposed Project along the western half but then curves northeast to re-join the current Grant Line Road alignment at the north end of Bird Road, while the proposed Project curves southeast to join 11th Street at the south end of Bird Road.

Implementation of Alternative 4 would remove 78.79 acres of row and field crops and 0.31 acre of drainage ditch habitat, compared to the 19.67 acres of row and field crops and no acres of drainage ditch habitat removed by the proposed Project. Both are also located within the jurisdiction of the SJMSCP and would need to be consistent with standards in species and habitat protection. Alternative 4 and the proposed Project would both be required to implement **Mitigation Measures BIO-1** and **BIO-2,** which would reduce impacts to biological resources and would be consistent with the SJMSCP. Implementation of these mitigation measures would reduce impacts to biological resources to less than significant under both Alternative 4 and the proposed Project. As such, Alternative 4 would have greater impacts to biological resources than the proposed Project.

5.2.2.5 Cultural and Tribal Cultural Resources

The Alternative 4 area includes 23 built environment resources 50 years or older. During the field reviews, conducted on April 8, 2016, and May 17, 2016, it was determined that six of these resources were (1) heavily modified to the point their integrity was compromised, (2) too far from the Alternative 4 activities to be potentially impacted, or (3) screened visually from the design elements of Alternative 4. Consequently, these six resources were eliminated from further study. Seventeen remaining built environment cultural resources (14 buildings and 4 linear features) within the study area of Alternative 4 required evaluation for listing in the California Register of Historical Resources (CRHR) to determine if they meet the definition of a historical resource as defined by CEQA. None of the 17 built environment resources are eligible for listing in the CRHR, and none are considered historical resources or unique archaeological resources for the purposes of CEQA.

Research was conducted to determine if historical or Native American sensitive sites were located within the Archaeological Study Area or surrounding area for Alternative 4. No historical resources were identified within or adjacent to the Alternative 4 site; however, should undiscovered historical resources be found during construction of Alternative 4, **Mitigation Measures CULT-1** and **CULT-2** would be implemented (similar to the proposed Project) to reduce potential impacts to historical resources.

The eastern portion of the Alternative 4 Archeological Study Area is located on a landform that contains high sensitivity for the presence of subsurface archaeological deposits. Because the isolated artifacts identified during the field survey was located in this high-density area and may likely be associated with a buried archaeological site, implementation of **Mitigation Measures CULT-3** and **CULT-4** (as described in the Initial Study as presented in **Appendix B**) would be implemented to reduce impacts to undiscovered resources. The proposed Project is not located on a landform that contains high sensitivity; as such, these mitigation measures would not apply.

No paleontological resources or unique geologic features are known to exist within or near Alternative 4. The area where Alternative 4 is located is underlain by Holocene to later Pleistocene Alluvial Fan Deposits which are considered to have no paleontological sensitivity from the surface to a depth of 20 feet and high sensitivity below that mark. Ground disturbance for Alternative 4 would only extend to a depth of 15 feet; however, should undiscovered paleontological resources be uncovered during construction, Alternative 4 would implement **Mitigation Measure CULT-5** (similar to the proposed Project) to reduce impacts to undiscovered paleontological resources.

Alternative 4 is not located in an area where human remains are known to exist. However, during construction, if human remains are discovered, Alternative 4 would implement **Mitigation Measure CULT-6** (similar to the proposed Project) to reduce impacts to undiscovered humans remains.

Native American consultation was conducted for both Alternative 4 and the proposed Project. Tribes that were contacted did not indicate that sensitive tribal artifacts are known to exist in the area.

Since Alternative 4 is located on a known landform that contains high sensitivity for the presence of subsurface archaeological deposits and the proposed Project does not; Alternative 4 could potentially have greater cultural resource impacts when compared to the proposed Project.

5.2.2.6 Geology and Soils

Alternative 4 would be located in the same geological area as the proposed Project and, therefore, would be exposed to similar geological and soil conditions. Similar to the proposed Project, Alternative 4 would require implementation of **Mitigation Measures HYDRO-1, HYDRO-2,** and **GEO-1** to reduce impacts associated with soil erosion and expansive soils. Alternative 4 would also implement similar design features as the proposed Project to reduce impacts associated with seismic events. As such, geological and soil impacts would be the same with either implementation of Alternative 4 or the proposed Project.

5.2.2.7 Greenhouse Gas Emissions

Alternative 4 would be similar to the proposed Project as they are anticipated to generate the same amount of GHG emissions during construction and operation. During construction, both Alternative 4 and the proposed Project would result in a total generation of approximately 1,840 metric tons of carbon dioxide (CO_2) of GHG emissions. Both Alternative 4 and the proposed Project would include the development of a new roadway that would divert the majority of traffic from existing Grant Line Road between Banta Road and Bird Road. Once operational, the new roadway would not generate any new vehicle trips that would contribute to an increase in GHG emissions. Therefore, neither Alternative 4 nor the proposed Project would contribute to a long-term increase in GHG emissions. As such, Alternative 4 would generate the same amount of GHG emissions as the proposed Project.

5.2.2.8 Hazards and Hazardous Materials

During construction of Alternative 4, construction equipment would be used that would require the use of fuels and other common liquids that have hazardous properties. Similar to the proposed Project, Alternative 4 would require a Spill Prevention Countermeasure Plan to ensure hazardous materials are not released (or, if released, are contained quickly) in the construction area. As both would be developed in active agricultural land, there is potential for ground contamination resulting from historical storage, use, and transportation of pesticides. A construction management plan would be implemented as part of **Mitigation Measure HAZ-2** to ensure that potential pesticide-contaminated soil would not impact the surrounding area or construction workers. Finally, similar to the proposed Project, hazardous materials sites are not located within or near the boundary of Alternative 4. As such, impacts associated with hazards and hazardous materials would be similar if Alternative 4 or the proposed Project is implemented.

5.2.2.9 Hydrology and Water Quality

During construction, Alternative 4 has the potential to cause temporary water quality impacts due to grading activities and removal of existing vegetation, which can cause increased erosion. Storm water runoff from the proposed Project may transport pollutants to the agricultural ditches if BMPs are not properly implemented. Generally, as the Disturbed Soils Area increases, the potential for temporary water quality impacts also increases. Long-term water quality impacts are usually due to changes in storm water drainage. Alternative 4 would result in construction of a new four-lane arterial around the community of Banta, thus causing a permanent increase in impervious surfaces of approximately 25 acres of new or replaced impervious surface. As such, Alternative 4 has the potential to impact long-term quality due to a permanent increase in runoff and pollutant loading from the road surface. **Mitigation Measures HYDRO-1** and **HYDRO-2** require that BMPs and storm

water control measures be implemented to control storm water generated by the proposed Project. Storm water control measures may include development of drainage ditches, vegetated bioswales, or other storm water control and treatment measures. Drainage patterns in the area of Alternative 4 could be changed due to the increase in impervious surfaces when compared to existing conditions. **Mitigation Measures HYDRO-3** and **HYDRO-4** would ensure that storm water generated by Alternative 4 is adequately captured and retained such that a substantial increase in surface runoff leaving the site is not anticipated. Overall, Alternative 4 would have similar impacts to hydrology and water quality as the proposed Project.

5.2.2.10 Land Use and Planning

The Alternative 4 alignment and proposed Project would be located in the same area and on the same land designated with the same general plan land uses and zoning. Both the proposed Project and Alternative 4 would require a Zoning Amendment to change the land from the current zoning to County right-of-way. Neither Alternative 4 nor the proposed Project would divide an established community, as the roadway would bypass the community of Banta to the south. Alternative 4 and the proposed Project are located within the jurisdiction of the SJMSCP. Implementation of **Mitigation Measures BIO-1** and **BIO-2** would ensure that Alternative 4 and the proposed Project are compliant with the SJMSCP. Alternative 4 would require the acquisition of more private parcels than the proposed Project; as such, the proposed Project would have less of an impact to land use and planning when compared to Alternative 4.

5.2.2.11 Mineral Resources

Both Alternative 4 and the proposed Project would be located in an area that is not designated for mineral resources per the 2035 San Joaquin County General Plan. No impacts to mineral resources would occur due to implementation of Alternative 4 or the proposed Project. As such, Alternative 4 would have the same level of impact on mineral resources as the proposed Project.

5.2.2.12 Noise

Implementation of Alternative 4 would result in construction noise that would potentially impact more sensitive receptors than the proposed Project. Similar to the proposed Project, Alternative 4 would implement **Mitigation Measure NOI-1** to reduce noise impacts from construction at nearby sensitive receptors.

5.2.2.13 Population and Housing

Similar to the proposed Project, Alternative 4 would construct a new Grant Line Road that would bypass the community of Banta. Implementation of Alternative 4 would not induce or reduce population growth in the community of Banta and unincorporated areas of San Joaquin County, as it is a roadway project. Alternative 4 would require partial acquisition of parcels but would not require the removal of any residential units. The County would work with parcel owners regarding full-parcel acquisition if the affected resident requested such action. As such, Alternative 4 would have similar impacts to population and housing as the proposed Project.

5.2.2.14 Public Services

Alternative 4, similar to the proposed Project, would develop a road to bypass the community of Banta. Alternative 4 would not generate population growth that would cause an increased need for public services in the area (law enforcement, firefighting services, library services, schools, parks, etc.) or the addition of buildings housing public services. Alternative 4 and the proposed Project would include the preparation of a traffic management plan to ensure that law enforcement and fire service personnel continue to have routes to the area in the event of emergencies. Once completed, the new bypass under the Alternative 4 design or the proposed Project would provide improved traffic flows and would not hinder emergency escape routes. As such, Alternative 4 would have similar impacts to public services as the proposed Project.

5.2.2.15 Recreation

Similar to the proposed Project, implementation of Alternative 4 would not result in a population increase in the community of Banta or within unincorporated San Joaquin County and, therefore, would not increase the uses of nearby recreational facilities. Alternative 4 includes the development of a new road and would not include the development of recreation areas (parks, trails, or recreational facilities). As such, Alternative 4 would be similar to the proposed Project, and no impacts would occur to recreational resources.

5.2.2.16 Transportation/Traffic

Alternative 4 would develop a new road that would bypass the community of Banta to reduce traffic congestion in the area and promote safer travel along the local roadway system. Under Existing plus Alternative 4 conditions, roadway segments and intersections in the study area of Alternative 4 would operate at acceptable levels of service. These intersections would operate at acceptable levels of service under this scenario since existing traffic volumes are over 50 percent lower compared to the Cumulative Year 2035 with Alternative 4 conditions.

Comparatively, since the proposed Project would not increase traffic volumes on Grant Line Road or Kasson Road it would not deteriorate the existing LOS on Grant Line Road or Kasson Road to below San Joaquin County LOS standards. The proposed Project would create four new intersections along the new roadway. These intersections are also anticipated to operate at acceptable service levels under Existing plus Project conditions since existing traffic volumes are over 50 percent lower Cumulative Year 2035 conditions. As such, Alternative 4 and the proposed Project would generate similar LOS at intersections under Existing plus Project scenarios.

Under Cumulative Year 2035 plus Alternative 4 conditions, all of the roadway segments are anticipated to operate at LOS A, which is also true for the proposed Project. Additionally, the new Grant Line Road segment would also operate at LOS A under Year 2035 plus Alternative 4 conditions.

Fourteen intersections were analyzed under Year 2035 plus Alternative 4 conditions to determine their LOS. All of the study intersections west of 11th Street are anticipated to operate overall at acceptable LOS B or better conditions. The intersection of 11th Street/Grant Line Road would operate at LOS D and F conditions during AM and PM peak hours, respectively. This intersection is

the only failing intersection under the Year 2035 plus Alternative 4 scenario. Comparatively, under the proposed Project, conditions at all of the study intersections on Grant Line Road and Kasson Road are anticipated to operate overall at acceptable LOS C or better conditions with the exception of the two-lane roundabout at the New Roadway/11th Street intersection. **Table AD: Year 2035 Intersection LOS Comparison** shows the intersections that were studied for Alternative 4 design compared to that of the proposed Project. As shown, both Alternative 4 and the proposed Project would have intersections that operate below LOS requirements (see the highlighted cells below in **Table AD**). Please refer to Chapter 6.1 Cumulative Impacts of this Final EIR for a cumulative impact (Year 2035) discussion.

Table AD: Year 2035 Intersection LOS Comparison

Intersections	Alternative 4 LOS		Proposed Project LOS	
	AM	PM	AM	PM
1. Banta Road/Grant Line	A	A	A	A
2. 6th Street/Grant Line	A	A	A	A
3. 7th Street/Grant Line	A	A	A	A
4. G Street/Grant Line	A	A	A	A
5. Bird Road/Grant Line	A	A	A	A
6. Berry Avenue/Grant Line	A	B	A	A
7. Stoneridge Drive/Grant Line	N/A	N/A	A	A
8. 11th Street/Grant Line	D	F	B	C
9. I-5 SB Ramps/Kasson Road	A	A	A	A
10. I-5 NB Ramps/Kasson Road	A	A	A	B
11. New Roadway/11th Street (roundabout)	N/A	N/A	E	F
12. New Roadway/Bird Road	N/A	N/A	A	A
13. New Roadway/7th Street Extension	A	B	A	B
14. New Roadway/Banta Road	A	A	N/A	N/A
15. New Road/F Street	A	A	N/A	N/A
16. New Road/Grant Line	A	A	N/A	N/A

Source: San Joaquin County, Revised Draft Traffic Operations Report for the Grant Line Road and Kasson Road Corridor Plan, December 2015, Table 10.
San Joaquin County, Final Traffic Operations Report for the Grant Line Road and Kasson Road Corridor Plan, November 2017, Table 10.
Notes: LOS = level of service
N/A = intersection is not applicable
Shaded cell = Shows the failing intersections of Alternative 4 and the proposed Project.

The Year 2035 analysis is based on build-out of the County General Plan and assumes the development of an approximately 396-acre parcel that would be occupied by light industrial and commercial uses southeast of the project area. The exact timing of the development of this parcel is unknown, and it is conceivable that some or all of the development could occur after 2035 (further out than is analyzed for Alternative 4 and the proposed Project). However, since the County General Plan indicates that the 396-acre parcel is to be developed by 2035, the Year 2035 plus proposed Project and Year 2035 plus Alternative 4 analysis takes into consideration full build-out of the 396-acre parcel by 2035 when analyzing impacts to nearby intersections.

As shown above in **Table AD**, the 11th Street/Grant Line Road intersection under Alternative 4A is anticipated to operate at below acceptable LOS standards under the Year 2035 plus Alternative 4

conditions. This failure is mainly due to the amount of future traffic that will be generated by the full build-out of the 396-acre parcel by 2035 as well as future traffic that the intersection will receive from the Interstate 5 corridor coming from Kasson Road. Under the Year 2035 plus proposed Project conditions, the New Roadway/11th Street (roundabout) intersection is anticipated to operate at below acceptable LOS conditions (as shown above in **Table AD**). Similar to Alternative 4A, the failure of this intersection under the proposed Project is mainly caused by the contribution of traffic that the 396-acre parcel will generate when built-out by 2035. It would be anticipated that the developer of the 396-acre parcel would be required to contribute its fair share to improving both of these intersections and other nearby intersections; however, the timing of such fair share contributions is unknown at this time and cannot be accounted for to improve the LOS conditions at the failing intersections under Alternative 4 and the proposed Project. As such, both of the intersections are anticipated to operate under unacceptable LOS conditions by 2035 due to anticipated build-out of the 396-acre parcel and the amount of traffic the parcel will generate.

Based on the discussion above, Alternative 4 would have similar traffic impacts when compared to the proposed Project.

5.2.2.17 Utilities/Service Systems

Similar to the proposed Project, implementation of Alternative 4 would not result in any new residences or businesses, and would therefore not impact wastewater treatment requirements, delivery, or facilities. No new on-site sewage systems would be required. Any amount of wastewater generated by construction workers would be hauled and treated off site. No impacts would occur to wastewater treatment requirements, nor would new water, wastewater facilities, or sewage systems need to be constructed nor expanded. Water for dust control operations during Alternative 4 construction would be brought in from off site. No further water supplies would be required to serve Alternative 4, and operation would not require water service. Alternative 4 is not expected to generate substantial amounts of solid waste during construction. Nearby landfills have sufficient capacity for solid waste generated during construction. Both Alternative 4 and the proposed Project would comply with all federal, State, and local statutes and regulations related to solid waste. In summary, Alternative 4 would have the same impacts to utilities/service systems as the proposed Project.

5.3 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

The following section describes alternatives (Alternative 1, Alternative 2, and Alternative 3) to the proposed Project that were considered but rejected from further consideration for the reason(s) provided. **Figure 10: Alternative 1 Alignment, Figure 11: Alternative 2 Alignment,** and **Figure 12: Alternative 3 Alignment** show the design and alignments of Alternative 1, Alternative 2, and Alternative 3, respectively, that were rejected from further consideration.

GRANT LINE CORRIDOR - ALTERNATIVE 1

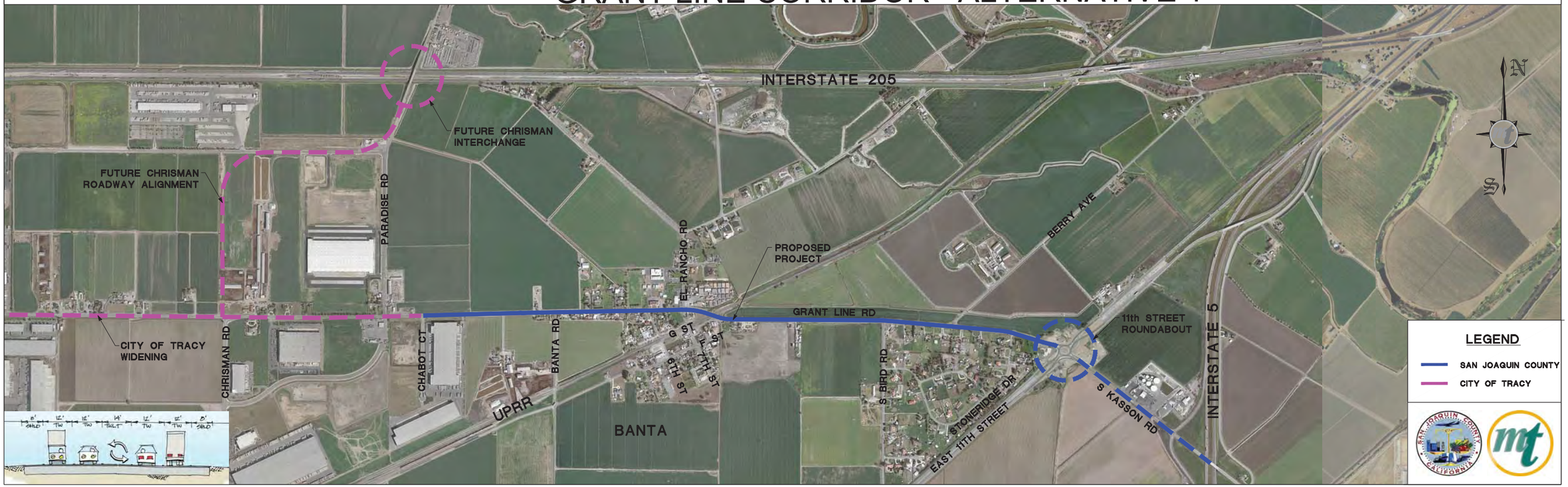

Figure 10

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 1 Alignment

Source: Mark Thomas 2015
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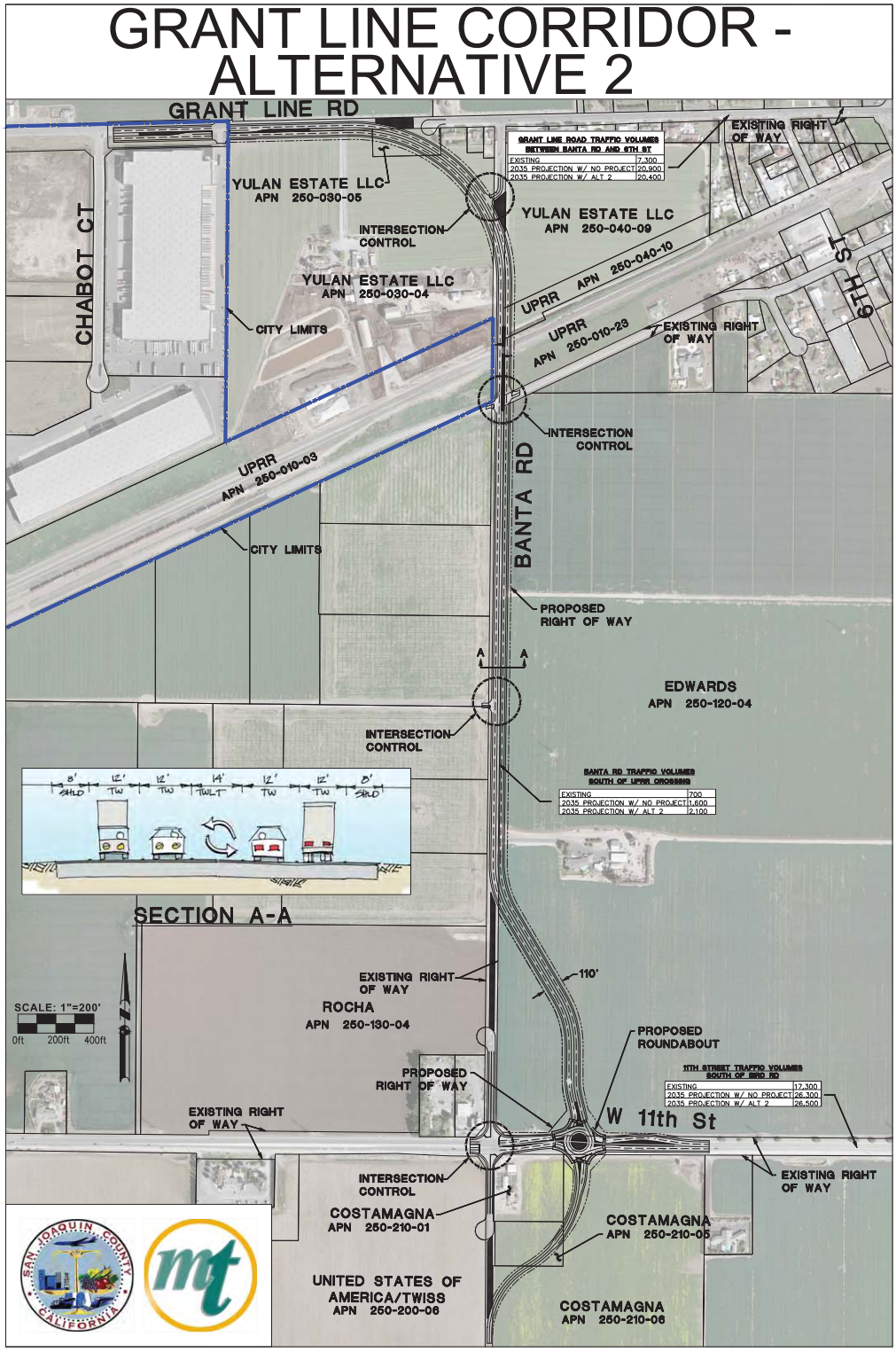

Figure 11

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 2 Alignment

Source: Mark Thomas 2015
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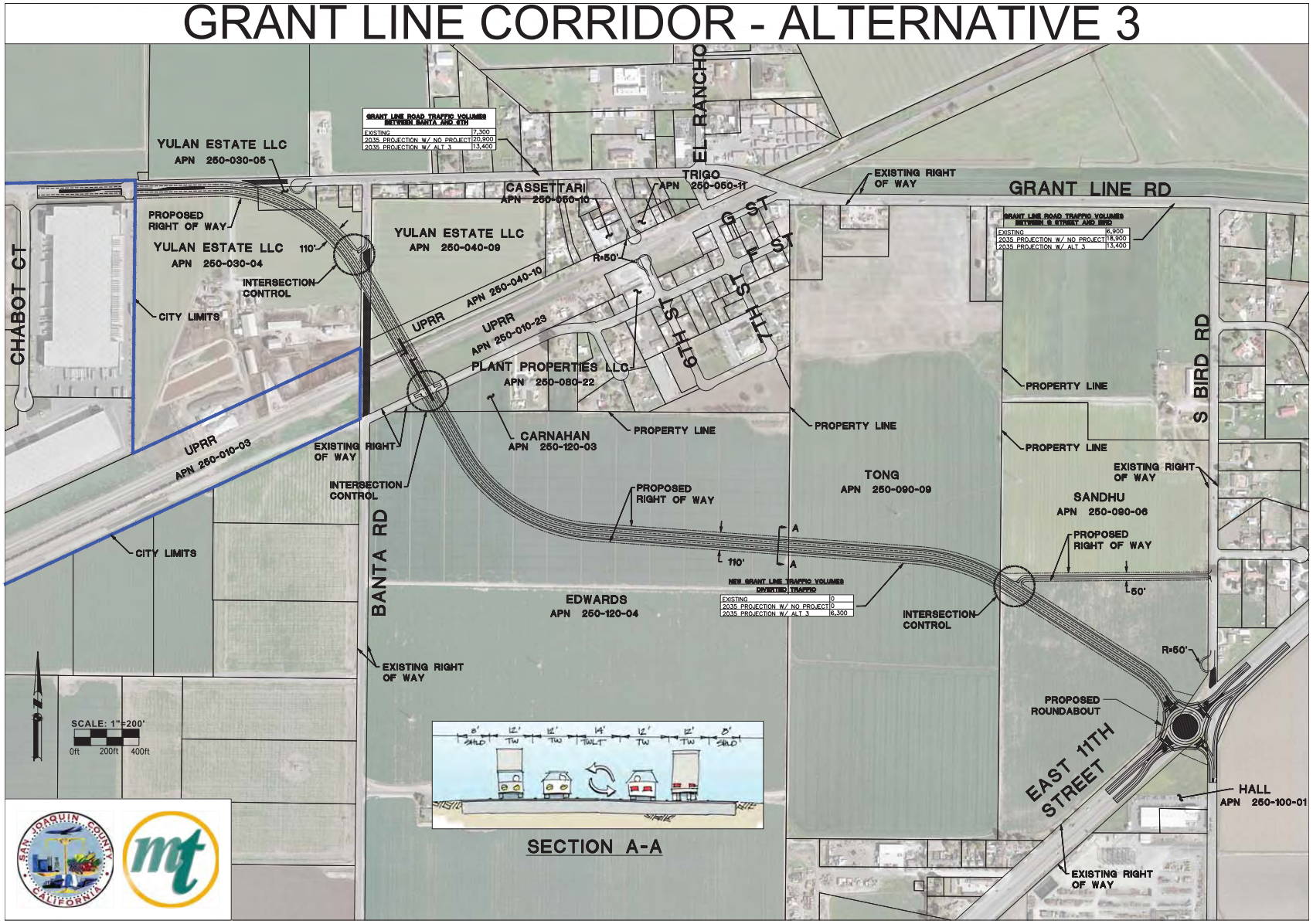

Figure 12

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 3 Alignment

Source: Mark Thomas 2015
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5.3.1 Alternative 1

The Alternative 1 design proposed to widen the existing roadway on Grant Line Road within the community of Banta. This alternative would have required the acquisition of right-of-way from adjacent parcels along the entire segment of Grant Line Road within the Project boundary.

As such, due to the number of parcels that would be impacted and the cost associated with right-of-way acquisition, this alternative was deemed infeasible and was not further considered for this Project.

5.3.2 Alternative 2

The Alternative 2 design proposed to shift Grant Line Road south, connecting to existing Banta Road toward 11th Street. Under Alternative 2, Banta Road would be widened and connected to 11th Street via a new two-lane roundabout. This Alternative did not meet the Project's purpose and need as it did not solve congestion issues on Grant Line Road. This alternative was deemed infeasible and was not further considered for this Project as it increased VMT over other alternatives.

5.3.3 Alternative 3

The Alternative 3 design is similar to the proposed Project but includes differences in the location of the alignment. Alternative 3 proposed to realign Grant Line Road in a southerly direction toward 11th Street in a similar manner as the proposed Project. The County, along with the Project engineer, received input from community involvement that required refinement of this alignment. Additionally, this alternative required a significantly larger amount of right-of-way from several parcels compared to the other alternatives analyzed. For these reasons, this alternative was deemed infeasible and was not further considered for this Project.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that the EIR identify the environmentally superior alternative. The No Project Alternative would eliminate most of the significant impacts associated with the proposed Project. The alternative would not result in ground-disturbing activities or construction of a new roadway. In addition, the No Project Alternative would avoid the Project's significant aesthetic impacts. Ultimately, the No Project Alternative would not be the environmentally superior alternative, as implementation would degrade the LOS to surrounding roadway segments and intersections when compared to the proposed Project. Furthermore, the No Project Alternative would not meet the primary objectives of the proposed Project. As a result, the No Project Alternative would not improve safety on the local circulation system, nor would it alleviate congestion on local roadways or within the community of Banta.

The Alternative 4 design would meet the Project objectives; however, implementation of the Alternative 4 design would impact more residents in the community of Banta when compared to the proposed Project. The detailed comparison between Alternative 4 and the proposed Project is discussed above in Section 5.2.2.

Per the analysis of this Final EIR, the design implemented under the proposed Project would be the environmentally superior alternative. This design would reduce most of the significant environmental impacts associated with construction of the proposed Project through mitigation measures outlined in this Final EIR and Initial Study (**Appendix B**). Although significant and unavoidable impacts have been identified, the severity of the impacts is less because fewer impacts occur when compared to the Alternative 4 design. The proposed Project design is also the only available design to meet the objectives. As such, the proposed Project is considered to be the environmentally superior alternative.

6.0 CEQA REQUIRED ASSESSMENT CONCLUSIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed Project: cumulative impacts, effects found not to be significant, growth-inducing impacts, unavoidable significant effects, and significant irreversible changes.

6.1 CUMULATIVE IMPACTS

CEQA defines cumulative impacts as "two or more individual effects, which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed Project alone, or together with other projects. The *CEQA Guidelines* state:

> "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State of California 2010)."

Therefore, cumulative impact analysis is a two-step process. First, it must be determined that the combined impact of the Project and other projects is significant, and second, it must be determined that the Project's incremental effect is cumulatively considerable (*CEQA Guidelines*, CCR Section 15130[a][2]).

If the Project is not expected to contribute to a cumulative effect on a resource, then that resource is not included in the sections below. The resources not included below include cultural resources, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, utilities and service systems, and mandatory findings of significance.

6.1.1 Methodology

When evaluating cumulative impacts, CEQA requires the use of (1) a list of past, present, and probable future projects, including projects outside the control of the lead agency; (2) a summary of projections in an adopted planning document; or (3) some reasonable combination of the two approaches. This analysis is based on a summary of projections as presented in the 2035 San Joaquin County General Plan. For each resource area discussed below, the geographic scope is detailed within the discussion.

6.1.2 Cumulative Effects of the Proposed Project

This section provides a cumulative analysis on the resource topics that have been included in this Final EIR.

6.1.2.1 Aesthetics

The study area for cumulative aesthetic impacts encompasses the Project site, the community of Banta, and nearby unincorporated San Joaquin County land. The proposed Project is located on flat terrain, and includes agricultural and urbanized areas associated with the community of Banta. The most significant visual resources in the Project vicinity are distant views of the Diablo Range and Sierra Nevada Mountains and "close-in" views of agricultural land that are important view sheds for local residents. Over the past century, the visual character of most of the study areas has been transformed from open lands with prairie, marshes, and woodland areas to a primarily agricultural region with open fields and orchards, along with urbanized areas. Under the cumulative condition, the agricultural character of the study area is anticipated to continue to change with the development of land uses as anticipated by the 2035 San Joaquin County General Plan, resulting in a potentially significant cumulative impact to visual resources within the study area.

Development of the proposed Project coupled with the build-out of other land uses within the cumulative aesthetic study area would result in construction activities that would create temporary visual changes to the existing landscape from vegetation removal, establishment of construction staging areas, and construction lighting. These construction activities would be temporary, and specifically for the proposed Project, would occur over a short amount of time when combined cumulatively with other projects. As such, the Project's incremental contribution to construction impacts on visual resources would not be cumulatively considerable.

Once operational, the proposed Project would result in changes to the existing landscape on a local and confined basis. Foreground views of existing agricultural land would be changed to views of a new roadway which would result in a degradation of views for a limited number of sensitive receptors within the Project boundary. Although the cumulative impacts of continued urban development (e.g., conversion of agricultural land to other uses) within the study area to visual resources may be significant, the proposed Project would result in degradation of views for a limited number of sensitive receptors; therefore, the Project, in itself, would not cumulatively contribute to the degradation of scenic resources within the cumulative study area for aesthetics. As such, the proposed Project's cumulative contribution to the degradation of visual resources would not be considerable.

6.1.2.2 Air Quality

The ARB divides California geographically into air basins for the purpose of managing the air resource of the State on a regional basis. The proposed Project as well as land within the County is located in the SJVAB; therefore, consistent with guidance from the San Joaquin Valley Air Pollution Control District, the study area for cumulative air quality impacts from criteria pollutants (which are regional in nature) is the SJVAB. Due to the existing and projected air quality issues in the SJVAB, build out of land uses under the 2035 San Joaquin County General Plan could contribute to cumulatively considerable short-term construction and long-term operational emissions, resulting in significant and unavoidable cumulative air quality impacts. Even with implementation of policies and regulations set forth in the 2035 General Plan, build out of land uses within the County would cumulatively result in significant and unavoidable impacts.

Air quality construction emissions associated with Project implementation would be below the SJVAPCD significance thresholds for regional criteria pollutants, including O_3 precursors NO_X and volatile organic compounds, and CO. However, construction activities associated with the proposed Project have the potential to contribute to the SJVAPCD's existing California nonattainment status for particulate air quality, contributing to a slight increase to PM_{10} and $PM_{2.5}$. Together with build out of land uses within the study area, these impacts would be cumulatively significant under CEQA. However, with implementation of **Mitigation Measures AQ-1** and **AQ-2,** the Project would reduce PM_{10} and $PM_{2.5}$ contributions. Therefore, consistent with the SJVAPCD Guidance for cumulative impact analysis, the Project's construction contribution to cumulative particulate emissions after mitigation would not be cumulatively considerable under CEQA.

Once operational, additional vehicle trips would not be generated by the proposed Project, nor would the proposed Project result in a significant increase in VMT. Therefore, operational activities associated with the proposed Project would not cumulatively contribute to an existing or projected air quality violation.

6.1.2.3 Agriculture and Forestry Resources

The cumulative impact study area for agricultural lands includes all of San Joaquin County, as farmland data typically describe resources at the county level. The cumulative impact analysis for agriculture is based on the build-out of land uses within a 10-mile radius of the proposed Project. According to FMMP data, in 2012, San Joaquin County had an Important Farmland inventory of 612,736 acres, which consisted of 382,115 acres of Prime Farmland; 82,160 acres of Farmland of Statewide Importance; 72,055 acres of Unique Farmland; and 76,406 acres of Farmland of Local Importance (Department of Conservation 2015b). San Joaquin County, as of January 1, 2013, had approximately 515,388 acres of land enrolled under the Land Conservation Act program (455,425 acres under Williamson Act contract and 59,963 acres under FSZ provisions).

Construction impacts of the proposed Project, in combination with the planned build out of land in the cumulative study area, may result in the temporary conversion of farmland to construction-related uses if staging activities are located on farmland, and would result in significant cumulative impacts under CEQA on land protected under the Williamson Act. For the proposed Project, the land temporarily used for construction would be restored and returned to agricultural use after construction is completed. As such, cumulative impacts from construction activities to agricultural lands and Williamson Act lands would not be cumulatively considerable under CEQA.

Operation of the proposed Project would result in the permanent loss of 19.1 acres of Prime Farmland and permanent conversion of 27.2 acres of agricultural land to urbanized land. This loss and conversion, when coupled with build out of the surrounding land uses, would cumulatively contribute to the loss of agricultural resources in the study area and in San Joaquin County. The proposed Project would not convert Williamson Act contracted land; therefore, the proposed Project would not cumulatively contribute to the loss of Williamson Act contracted land within San Joaquin County or the study area. The proposed Project would implement **Mitigation Measure AG-1,** which would require a 1:1 replacement ratio for Important Farmland or land designated as agricultural uses, whichever acreage is bigger. As the proposed Project would implement this

mitigation measure, the incremental impacts from Project operation to agricultural lands and Williamson Act lands would not be cumulatively considerable under CEQA.

6.1.2.4 Biological Resources

The study area for cumulative impacts to biological resources encompasses land within 10 miles of the Project site and within the jurisdiction of the SJMSCP. Existing development trends affecting biological resources are expected to continue and potentially further degrade some natural systems due to build out of land uses within the study area. In addition, developments associated within land use build out in the study area would degrade habitat through pollution, noise, and dust; would threaten species with mortality from vehicle strikes and habitat fragmentation; and would degrade or remove jurisdictional waters.

Construction of the proposed Project, coupled with build out of land uses within the cumulative study area, may have the potential to result in the following:

- The loss of special-status plant and wildlife species within the SJMSCP at temporary construction sites such as laydown and staging areas.

- The temporary destruction or degradation of special-status plant communities; impediment of the implementation of recovery plans; temporary placement of fill or increase in erosion, siltation, and runoff in jurisdictional waters (e.g., seasonal wetlands); and removal of modification of protected trees. Cumulative impacts to jurisdictional wetlands and waters may be caused by the combined construction of numerous projects simultaneously.

- The placement of wildlife movement barriers or increased lighting, noise, and activity within and near the construction staging areas, which would interrupt wildlife movement corridors.

Construction of the proposed Project in combination with built-out land uses in the study area could result in temporary habitat loss that would be cumulatively significant under CEQA. The proposed Project is located in the SJMSCP and would be required to be consistent with standards for biological resource protection as described in the plan. The proposed Project would be located on land that is currently under agricultural production or is occupied by urbanized uses; as such, the proposed Project is not anticipated to impact riparian habitats, sensitive natural communities, or federally protected wetlands. As the proposed Project is within the SJMSCP, implementation of **Mitigation Measures BIO-1** and **BIO-2** would be required to be consistent with the conservation of biological resources within the plan area. Implementation of these measures would mean that the incremental impacts of proposed Project construction to biological resources would not be cumulatively considerable under CEQA.

Operation of the proposed Project, in combination with built-out land uses in the study area, could result in permanent habitat loss (including the loss of special-status plant and wildlife species); permanent placement of fill, increasing erosion, siltation, and runoff in jurisdictional waters; habitat fragmentation (including placement of wildlife movement barriers within the cumulative Project area); introduction of invasive species; and harassment due to increased noise, lighting, and human disturbance similar to those discussed above (under construction). Along with other projects in the

area, particularly the growth of unincorporated San Joaquin County land as reflected in the 2035 General Plan, these impacts would be cumulatively significant under CEQA. The proposed Project would adopt **Mitigation Measures BIO-1** and **BIO-2**. With implementation of these mitigation measures, the incremental operations impacts of the proposed Project to biological resources would not be cumulatively considerable under CEQA.

6.1.2.5 Noise and Vibration

The study area for cumulative noise impacts includes the Project site and the surrounding vicinity, which share the same ambient noise environment. Concentrations of residences and other potential noise-sensitive receptors exist in the community of Banta. Outside of this urban area, land use is mostly agricultural, with scattered sensitive receptors. Existing daytime/nighttime noise levels in the area ranged from 56.9 to 64.7 dBA L_{dn}.

A cumulative construction noise impact could occur if the proposed Project, in combination with other projects potentially constructed at the same time as the proposed Project, would cause ambient noise levels at nearby sensitive receptors to exceed the County's noise standards or cause a substantial temporary increase in ambient noise levels in the Project vicinity. Given that the proposed Project is anticipated to be constructed in the near future, prior to the build out of the 2035 General Plan, it is reasonable to assume that noise generated from the construction of other cumulative projects would be minimal. Further, due to the localized nature of noise and the fact that noise levels are reduced with distance from the noise source, cumulative projects would need to be constructed in the immediate vicinity of each other to result in a significant impact under cumulative construction noise conditions. The 2035 General Plan does not identify substantial land development within the immediate vicinity of the Project site that would affect sensitive receptors in the Project vicinity. Therefore, it is anticipated that no significant impact under cumulative construction noise conditions would occur.

A cumulative noise impact could occur if proposed Project operation, in combination with other past, present, and reasonably foreseeable future projects, would cause ambient noise levels at nearby sensitive receptors to exceed the County's noise standards or cause a substantial permanent increase in ambient noise levels in the Project vicinity. The cumulative noise environment is limited to traffic noise generated by the build out of the 2035 General Plan, as there are no substantial noise-generating developments proposed in the Project vicinity. As discussed in Section 4.8.3, 2035 plus Project conditions would result in both an exceedance of County noise standards and a substantial permanent increase in ambient noise levels at several sensitive receptors along the proposed roadway. This would be a significant impact under the cumulative noise condition. As the proposed Project would develop this new roadway, leading to the significant cumulative noise impact at these sensitive receptors, the Project would have a cumulatively considerable contribution toward this cumulative noise impact. The proposed Project would adopt **Mitigation Measure NOI-3**, which includes the construction of noise barriers at the property lines of the affected sensitive receptors (receptors SR-1, SR-4, and SR-5). With implementation of these measures, the proposed Project's incremental contribution toward this cumulative noise impact would be less than cumulatively considerable.

6.1.2.6 Transportation and Circulation

The study area for cumulative transportation and circulation impacts consists of 10 study intersections and 2 study roadway segments within San Joaquin County. The cumulative study area for transportation and circulation impacts is the same as the study area under existing conditions and is described in more detail in Section 4.9.1. As land in the area is built out consistent with the General Plan, each development would generate traffic that could degrade the LOS for roadway segments and intersections in the study area. When all of these developments are built out in accordance with the 2035 General Plan, there would be a significant impact to the cumulative condition. Without mitigation measures implemented by each of the individual projects as they are built out, cumulative impacts for transportation and circulation would be potentially significant.

A cumulative construction traffic impact could occur if the proposed Project, in combination with other projects potentially constructed at the same time as the proposed Project, would cause an intersection or roadway segment to operate below acceptable conditions. The proposed Project is not anticipated to generate a substantial amount of construction traffic. Given that the proposed Project is anticipated to be constructed in the near future, prior to the build out of the General Plan, it is reasonable to assume that traffic generated from the construction of other cumulative projects would be minimal. Therefore, it is anticipated that no significant impact under cumulative construction traffic conditions would occur.

A cumulative impact to the circulation system could occur if proposed Project operation, in combination with other past, present, and reasonably foreseeable future projects, would cause a conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or would cause a conflict with the SJCOG RCMP. In order to determine whether an impact would occur in the cumulative condition, Fehr & Peers utilized the City of Tracy travel demand model to develop traffic forecasts for the study area. This model includes detailed roadway network and land uses within Tracy as well as on Grant Line Road and cross-streets in the San Joaquin County. This model considers the following key roadway and land use assumptions in the Project area:

- I-205 is widened from a six-lane facility to an eight-lane facility by 2035
- A new interchange is provided at I-205/Chrisman Road by 2035
- Full build out of the City of Tracy Northeast Industrial Area

County staff provided the following information to include in the traffic forecasts:

- Approximately 396 acres of agricultural land use to be rezoned light industrial/commercial (located in the southeast quadrant of the 11th Street/Grant Line Road intersection)

- Approximately 107 acres of agricultural land use to be rezoned light industrial/commercial (located in the northeast quadrant of the Kasson Road/I-5 interchange)

- Approximately 115 acres of agricultural land use to be rezoned rural service/low-density residential (located just east of G Street on the south side of Grant Line Road)

Under the 2035 No Build scenario, intersection traffic volumes are expected to increase from existing conditions by approximately 158 percent (7.2 percent per year) during the a.m. peak hour and 153 percent (6.9 percent per year) during the p.m. peak hour. ADT volumes on Grant Line Road west of 11th Street are expected to increase from existing conditions by about 180 percent (8.2 percent per year). Under the proposed Project, the ADT volumes on existing Grant Line Road would drop by about 90 percent as the roadway would primarily be used by local residents. It is anticipated that regional traffic including heavy trucks would shift to the new roadway under the proposed Project.

Roadway Segment Analysis

Table AE: Year 2035 Roadway Segment Level of Service presents the year 2035 daily volume roadway segment analysis. As shown, Grant Line Road would operate at LOS F as a two-lane roadway under 2035 No Build conditions and would improve to LOS A under 2035 Plus Project conditions as regional traffic and trucks divert to the new roadway. The new roadway under the proposed Project would operate at LOS A as a four-lane facility. Therefore, with implementation of the proposed Project, the cumulative condition would improve and there would be no significant impact to roadway segments under cumulative traffic conditions.

Table AE: Year 2035 Roadway Segment Level of Service

Location	Alternative	Facility Type	Daily Volume	Level of Service
Grant Line Road just east of Banta Road	No Build	Two-lanes *with no* turning lanes	20,900	F
	Project	Two-lanes *with no* turning lanes	1,900	A
Grant Line Road just west of Bird Road	No Build	Two-lanes *with no* turning lanes	18,900	F
	Project	Two-lanes *with no* turning lanes	2,000	A
Kasson Road just east of 11th Street	No Build	Four-lanes *with* turning lanes[1]	18,500	A
	Project	Four-lanes *with* turning lanes[1]	18,500	A
Kasson Road just east of I-5/ Kasson Road interchange	No Build	Two-lanes *with no* turning lanes	5,700	A
	Project	Two-lanes *with no* turning lanes	5,700	A
New Roadway	Project	Four-lanes *with* turning lanes	19,000	A

Source: Fehr & Peers (2017).

[1] Assumes that proposed developments on the east side of 11th Street would widen roadway to four lanes with or without the proposed Project.

I = Interstate

Intersection Queue Lengths. Fehr & Peers conducted 2035 peak-hour queuing analysis at each of the study intersections under 2035 No Build and 2035 Plus Project conditions. Detailed results of the queuing analysis can be found in **Appendix F**. As shown in **Appendix F**, the proposed Project would accommodate the 95th percentile queue lengths. Therefore, no significant impact would occur under cumulative traffic conditions.

Intersection Analysis. Table AF: Year 2035 Intersection Operation Analysis presents the average delay in seconds and LOS under Year 2035 No Build and Year 2035 plus Project conditions.

Table AF: Year 2035 Intersection Operations Analysis

Intersection	Control	2035 No Build		2035 Plus Project	
		AM	PM	AM	PM
1. Banta Road/Grant Line Road	Side-Street Stop	75/F (>120/F)	112/F (>120/F)	2/A (2/A)	2/A (2/A)
2. 6th Street/Grant Line Road	Side-Street Stop	91/F (>120/F)	80/F (>120/F)	2/A (4/A)	2/A (4/A)
3. 7th Street/Grant Line Road	Signal	>120/F[1]	>120/F[1]	6/A	5/A
4. G Street/Grant Line Road	Side-Street Stop	11/B (52/F)	>120/F (>120/F)	1/A (4/A)	2/A (4/A)
5. Bird Road/Grant Line Road	Side-Street Stop	5/A (19/C)	56/F (>120/F)	2/A (4/A)	2/A (5/A)
6. Berry Avenue/Grant Line Road	Side-Street Stop	4/A (23/C)	33/D (>120/F)	2/A (3/A)	2/A (4/A)
7. Stoneridge Drive/Grant Line Road	Side-Street Stop	2/A (19/C)	8/A (79/F)	2/A (4/A)	1/A (4/A)
8. 11th Street/Grant Line Road	Two-Lane Roundabout	24/C	22/C	10/B	16/C
9. I-5 SB Ramps/Kasson Road	Side-Street Stop	7/A (16/C)	5/A (15/B)	6/A (12/B)	5/A (11/B)
10. I-5 NB Ramps/Kasson Road	Side-Street Stop	5/A (15/C)	9/A (29/D)	5/A (11/B)	11/B (24/C)
11. New Roadway/11th Street	Two-Lane Roundabout	-	-	43/E	113/F
12. New Roadway/Bird Road	Signal	-	-	5/A	6/A
13. New Roadway/7th Street Extension	Side-Street Stop	-	-	7/A	11/B
14. New Roadway/Banta Road	None ("Free" Movements)	-	-	N/A	N/A

Source: Fehr & Peers (2017).
Notes: For intersections controlled by a traffic signal or roundabout, the overall intersection delay/LOS is presented. For side-street stop intersections, the overall intersection delay/LOS is presented, as well as the worst side-street movement delay/LOS in parenthesis. Delay is in seconds.
[1] Includes EB through delay at 6th Street and WB through delay at G Street
LOS= Level of service; N/A = not applicable; SB = southbound; EB = eastbound; NB = northbound; WB = westbound.
Grey Highlight – Shows the failing intersection under the Year 2035 Plus Project Conditions.

As shown in **Table AF**, traffic operations at the intersections west of 11th Street are anticipated to deteriorate by 2035 under No Build conditions. Many of the locations are projected to operate overall at unacceptable LOS F conditions, and those intersections that do not operate at LOS F are projected to have side-street movements experiencing very high delays and operating at LOS F. The projected growth in traffic on Grant Line Road is expected to result in very few gaps in the eastbound and westbound through traffic streams to allow side-street traffic to turn onto Grant Line Road.

Build Conditions. The Year 2035 traffic forecasts assumes build-out of the County General Plan, which includes a 396-acre parcel located southeast of the proposed Project. This parcel is currently under agricultural production and will be developed with industrial/commercial uses per the County General Plan. Since this parcel is part of the County General Plan, it is assumed that it will be built-out and operational by 2035 (which is the forecasted year of the General Plan).

Under Year 2035 plus Project conditions, all of the study intersections on existing Grant Line Road and Kasson Road are anticipated to operate overall at acceptable LOS C or better conditions, eliminating the cumulative impact seen under the Year 2035 No Build conditions and resulting in a beneficial impact at these intersections. With the exception of the two-lane roundabout on the New Roadway, the new intersections under the proposed Project are anticipated to operate at acceptable LOS B or better conditions. Under the Year 2035 plus Project conditions, the New Roadway/11th Street (roundabout) intersection is anticipated to operate at LOS E and LOS F during the AM and PM peak hours, respectively. The main reason this intersection fails under this condition is due to the anticipated build-out of the 396-acre parcel to the southeast of the project area. Development of this parcel will generate enough traffic that will be dispersed into the New Roadway/11th Street (roundabout) intersection resulting in the intersection operating at LOS conditions that are below acceptable standards. Once the 396-acre parcel is developed, it is anticipated that the County would require the developer of this parcel to contribute its fair share of improving this intersection and other nearby intersections; however, the timing of this fair share improvement contribution is not known and the extent of such improvements is not known. As such, this is a significant impact under the cumulative condition.

Fehr & Peers conducted a sensitivity analysis for the New Roadway/11th Street under the Year 2035 plus Project, assuming that the development of the 396-acre parcel does not occur by 2035. As described in **Appendix F**, traffic forecasts at the New Roadway/11th Street intersection would be about 34 percent lower in the AM and PM peak hours under this scenario, and this two-lane roundabout intersection would operate at LOS C or better. However, because this 396- acre parcel development is included within the 2035 General Plan, it is considered a “reasonably foreseeable” future project and build-out of this parcel must be considered in this cumulative impact analysis.

There are no feasible mitigation measures that could be included as part of the proposed Project to reduce or eliminate significant cumulative impacts at this intersection. Expansion of the roundabout to accommodate three lanes is not consistent with current design standards and thus cannot be implemented to reduce this cumulative impact. Development of an additional intersection along 11th Street in the vicinity of the 396-acre parcel development could potentially alleviate LOS impacts at the proposed roundabout. However, the County cannot require that a developer construct a new intersection ahead of the property development, and it would not be feasible for the County to develop this intersection until the 396-acre parcel is developed. The County could prepare a Deficiency Plan for this intersection that would eliminate the Project’s conflict with the SJCOG RCMP. However, since there is no feasible mitigation available to reduce this significant cumulative impact, the proposed Project would still conflict with the standards in the 2035 General Plan and result in a significant and unavoidable impact on the cumulative traffic condition, as it would conflict with applicable plans establishing measures of effectiveness of the circulation system. As such, a Deficiency Plan would not reduce the cumulative impacts that would occur at this intersection.

The proposed Project includes the development of the intersection that would experience this cumulative impact. Therefore, as the proposed Project would create this intersection, the Project would have a cumulatively considerable contribution toward this cumulative impact.

6.2 GROWTH-INDUCING IMPACTS

In §15126.2(d) of the *CEQA Guidelines*, there is a discussion of how the proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. This section summarizes the Project's growth-inducing impacts on the surrounding community. Examples of projects likely to have significant growth-inducing impacts include extensions or expansion of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped. The direct and indirect growth-inducing impacts of the proposed Project are discussed below.

6.2.1 Direct Growth-Inducing Impacts

The proposed Project does not include the development of any new residential units and would therefore not directly cause substantial permanent population growth. The proposed Project would generate a maximum of 20 employees per day on site during the 13-month construction period. It is anticipated that the demand for construction workers can be met through the local and regional labor force. However, even if the construction worker demand is not completely met through the local and regional population, this would result in only a temporary population increase and not in substantial permanent growth. As the Project includes development of a new roadway corridor, Project operation would not require employment. Therefore, the proposed Project would not directly result in permanent population growth.

6.2.2 Indirect Growth-Inducing Impacts

The proposed Project includes the development of a new Grant Line Road that would bypass the existing Grant Line Road located within the community of Banta. The objectives of the proposed Project are to alleviate congestion in Banta and provide safe circulation on the roadways near the Project. The Project is located in an established community that consists of residential, industrial, commercial, and agricultural uses. Most of the land within the Project area that is not occupied by urbanized uses is currently under agricultural production. According to County staff (and as accounted for in the 2035 San Joaquin County General Plan existing conditions setting), approximately 503 acres of existing agricultural land are forecast to be rezoned to light industrial/commercial uses and approximately 115 acres of agricultural are forecast to be rezoned to rural service/low-density residential. Both of these areas are outside of the proposed Project site and are anticipated to be developed whether or not the Project is implemented. The proposed Project in itself would not facilitate the build out or rezoning of these unincorporated areas; however, the proposed Project would help in alleviating future traffic conditions through the community of Banta. As such, no open-space-to-developed-land conversion within or outside of the Project site would be induced by the Project.

Implementation of the proposed Project would help alleviate existing congestion in the area but would not indirectly induce growth in the community of Banta or unincorporated San Joaquin County. The reconfiguration and new roadway are needed to accommodate current and future vehicle counts along the existing roadway configuration. The Project was considered in the 2035 San Joaquin County General Plan and other transportation plans of the County to accommodate known

growth that would occur. As such, implementation of the proposed Project would not result in indirect growth-inducing impacts.

6.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

An Initial Study was completed for the proposed Project in December 2017. Based on information from County staff, visits to the Project site, and background research and analysis completed for the Initial Study, the proposed Project is not expected to result in significant impacts related to the following topics with implementation of the mitigation measures contained in the Initial Study and **Table A** of this Final EIR.

6.3.1 Cultural Resources

A *Supplemental Cultural Resources Study and Eligibility Evaluations* report (Cultural Resources Study) was prepared for the proposed Project in November 2017. LSA prepared this report as an addendum to the original cultural resources study prepared by Vallaire and Andreazzi (2016). The original cultural resources study covers a 73.7-acre archaeological study area and a 953.44-acre built environment study area for the proposed Project. Portions of the study areas for the proposed Project overlap those of the original cultural resources study and were therefore previously addressed by Vallaire and Andreazzi (2016). These overlapping areas are addressed in the supplemental Cultural Resources Study because they may contain cultural resources that may be subject to impact by the proposed Project alignment connecting Grant Line Road to 11th Street, west of SR-33, between Kasson Road and Lovely Road. In order to comply with the requirements of CEQA, the County conducted this additional cultural resource identification for resources potentially impacted by the implementation of the proposed Project.

The Cultural Resources Study was prepared to identify cultural resources that meet the definition of historical or unique archaeological resources under CEQA and that may be indirectly impacted by implementation of the proposed Project; identify human remains that may be impacted by implementation of the proposed Project; and recommend mitigation for avoiding or minimizing such impacts should they occur. Background research, outreach to interested parties, and a field survey were conducted in preparation of the supplemental study.

The background research, interested party outreach, and field survey conducted for the study identified two built environment cultural resources in the Project area: a residence at 23262 South Bird Road in Tracy, California (Assessor's Parcel Number [APN] 239 090-05) and the Pacific Gas and Electric Company (PG&E) Tesla-Kasson transmission line. The residence, built in 1942, does not appear eligible for inclusion in the CRHR. The building does not qualify as a "historical resource" for the purposes of CEQA, as defined by Public Resources Code §21084.1. The PG&E Tesla-Kasson transmission line bisects a portion of the Project area. Although a transmission system was constructed in this alignment by 1942, the steel towers associated with this line were likely constructed in 1965 when the 115-kilovolt lines were first connected to the Stanislaus-Newark Circuits (California Department of Parks and Recreation 2017), and none of the towers is present within the supplemental study areas. The line passes high over the Project area and would not be impacted by the Project. Therefore, no additional analysis of this resource was warranted for purposes of the Cultural Resources Study. Neither the building at 23262 South Bird Road nor PG&E's

Tesla-Kasson transmission line qualify as a "historical resource" for the purposes of CEQA, as defined by Public Resources Code §21084.1. No additional cultural resources were identified in the Project area in the course of the study that was prepared.

Although the likelihood of encountering cultural resources or human remains during Project implementation is low, **Mitigation Measures CULT-1, CULT-2, CULT-5,** and **CULT-6** would be implemented to ensure the proposed Project would avoid or minimize adverse impacts to any cultural resources or human remains that may be inadvertently discovered during construction.

6.3.2 Geology and Soils

As discussed in the Initial Study, the Project site is bisected by the Quaternary-Pleistocene period (10,000 to 1.6 million years) Vernalis Fault. The Vernalis Fault is a northwest-striking, moderately to steeply west-dipping fault that extends roughly 41 miles between Tracy and Patterson. The Vernalis Fault has the potential to generate an earthquake with a maximum magnitude between 6.25 and 6.75.1. The Great Valley Thrust Fault Segment 7 is located 11 miles southwest of the proposed Project site. The Great Valley Thrust Fault Segment 7 is capable of producing a maximum 6.7 magnitude earthquake. The proposed Project is not located near or within the boundary of an Alquist-Priolo Earthquake Fault Zone. The Project is located in an area earthquake shaking area with a peak ground acceleration of 30 percent.

According to the San Joaquin County 2010 General Plan, the soils in the Project area are not considered to be as susceptible to liquefaction as other parts of San Joaquin County, even though the groundwater is high, because the near-surface soils are predominantly clays or sands with high silt and clay content. According to the San Joaquin County General Plan, the proposed Project site is located in an area of expansive soil. The Project site is located on flat topographical land. No hillsides, slopes, steep topographical areas, cliffs, or mountains are located within the Project boundary, nor are any located near the Project site. The potential for landslides occurring on or adjacent to the Project site is low.

The proposed Project would be designed and constructed per San Joaquin County and Caltrans seismic design standards, which would reduce potential impacts associated with seismic events. Soil erosion could occur during Project construction; however, implementation of **Mitigation Measures HYDRO-1** and **HYDRO-2** (discussed in **Appendix B** and **Table A** of this Final EIR) would reduce such impacts associated with soil erosion. The California Building Code (1808A.6.1 Foundations) requires that structures placed on or within the active zone of expansive soils shall be designed to resist differential volume changes and to prevent structural damage to the supported structure. As the Project is located on expansive soil, **Mitigation Measure GEO-1** (discussed in **Appendix B** and **Table A** of this Final EIR) would be implemented to reduce such impacts.

6.3.3 Greenhouse Gas Emissions

As discussed in the Initial Study, construction activities associated with the proposed Project (excavation, grading, paving, and construction) would produce combustion emissions from various sources. During site preparation, excavation, and grading, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs

such as CO_2, methane, and nitrous oxide. Furthermore, methane is emitted during the fueling of heavy equipment. Exhaust emissions from on-site excavation, grading, paving, and construction activities would vary daily as construction activity levels change. No thresholds have been adopted by the County that are applicable to this Project. According to the RoadMod analysis performed by LSA, GHG emissions during the 24-month construction of the Project would total approximately 1,840 metric tons of CO_2. When averaged over a 30-year project life, emissions would be approximately 61.3 metric tons of CO_2 per year. These emissions would be minimal when considered over the life of the Project and would cease once Project construction is completed. Therefore, Project construction would not significantly contribute to GHG emissions. The proposed Project would include the development of a new roadway that would divert the majority of traffic from existing Grant Line Road between Banta Road and Bird Road. Once operational, the new roadway would not generate any new vehicle trips that would contribute to an increase in GHG emissions. Therefore, the proposed Project would not contribute to a long-term increase in GHG emissions.

6.3.4 Hazards and Hazardous Materials

As discussed in the Initial Study, development of the proposed Project would require the use of construction equipment that may require the use of fuels and other common liquids that have hazardous properties (e.g., fuels, oils, or fluids that are flammable). These liquids would be used in accordance with all applicable laws and regulations, and as described in the Spill Prevention Countermeasure Plan. If used properly, these liquids would not pose a hazard to people, animals, plants, or sensitive areas on or near the Project site (see **Mitigation Measure HAZ-1** discussed in **Appendix B** and **Table A** of this Final EIR). All refueling of construction equipment would occur within designated staging areas. The use of such hazardous materials would be temporary during construction activities, and the proposed Project would not include a permanent use or generate a source of hazardous materials during operational activities. Construction of the Project would require cutting through land that was historically used for agriculture. Trenching and other ground-disturbing activities during Project construction could disturb undocumented soil or groundwater contamination. Adverse impacts could result if construction activities inadvertently disperse contaminated material into the environment. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water. Implementation of **Mitigation Measure HAZ-2** (discussed in **Appendix B** and **Table A** of this Final EIR) would reduce such impacts to less than significant. Finally, there are six hazardous materials sites in the vicinity of the proposed Project; however, the Project site is not located on any of these sites.

6.3.5 Hydrology and Water Quality

The Project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board, which is under the direction of the California State Water Resources Control Board. Under the federal CWA and the California Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board has regulatory responsibility for protecting water quality. During construction, the proposed Project has the potential to cause temporary water quality impacts due to grading activities and removal of existing vegetation, which can cause increased erosion. Storm water runoff from the proposed Project may transport pollutants to the agricultural

ditches if BMPs are not properly implemented. Generally, as the Disturbed Soils Area increases, the potential for temporary water quality impacts also increases. Long-term water quality impacts are usually due to changes in storm water drainage. The proposed Project would result in construction of a new four-lane arterial around the community of Banta, thus causing a permanent increase in impervious surfaces of approximately 20 acres of new or replaced impervious surface. As such, the proposed Project has the potential to impact long-term quality due to a permanent increase in runoff and pollutant loading from the road surface. Implementation of **Mitigation Measures HYDRO-1** and **HYDRO-2** (discussed in **Appendix B** and **Table A** of this Final EIR) would reduce impacts associated with the violation of water quality standards or discharge requirements during Project construction. As the proposed Project would create a new roadway in an agricultural area, an increase in impervious surfaces would occur, which could lead to the alteration of the existing drainage pattern in the area. Implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4** (discussed in **Appendix B** and **Table A** of this Final EIR) would ensure that drainage patterns in the area are consistent with County standards for surface water drainage requirements. As such, impacts to hydrology and water quality would be less than significant.

6.3.6 Land Use and Planning

The proposed Project is located in unincorporated San Joaquin County. Land uses in the Project vicinity are under the jurisdiction of the San Joaquin County General Plan Land Use Element. Land parcels bordering the Project site to the north and south are designated as General Agriculture (AG); Rural Residential; Public (P); Rural Service Commercial; and Limited Industrial (L/I). The proposed Project includes parcels of land that are designated as Agriculture under the San Joaquin County General Plan Land Use Element and zoned as A-2-40 under the San Joaquin County Zoning Code. The proposed Project would be developed across parcels that are designated General Agricultural (AG-40) per the San Joaquin County Zoning Code. This zone was established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Once right-of-way acquisition is completed by the County, an Order Declaring a Public Highway will be signed by the Chairman of the Board and recorded along with the Grant Deed. This action will ensure that the zoning change is completed per County standards and no other zoning change amendments would be required. The San Joaquin County Public Works Department would be required to follow the Order Declaring a Public Highway requirements as set forth by the County. Following the requirements would result in a less than significant impact from implementation of the proposed Project.

The proposed Project is located within the jurisdiction of the SJMSCP, as described above under Section 4.7, Biological Resources. Implementation of **Mitigation Measures BIO-1** and **BIO-2** would ensure that the proposed Project is compliant with the SJMSCP.

6.3.7 Mineral Resources

As discussed in the Initial Study, the proposed Project is not located within a mineral resource zone, nor is one located near the site. As such, implementation of the Project would not cause a significant impact to mineral resources.

6.3.8 Population and Housing

As discussed in the Initial Study, implementation of the proposed Project would not generate population growth or reduce or increase the amount of housing in the area. The Project includes development of a roadway corridor to bypass Banta, a rural community in San Joaquin County. The Project would bypass the downtown corridor of Banta as the existing roadway is experiencing large volumes of both vehicle and traffic due to the growth of Tracy's population and industrial areas. Implementation of the proposed Project would not induce direct population growth to the rural residential/agricultural uses in the surrounding area. Additionally, implementation of the Project would not include the development of housing or removal of existing housing. No impacts to population and housing would occur due to Project implementation.

6.3.9 Public Services

As discussed in the Initial Study, the Project would not include the development of residential units that would generate residents or the demand for public services. Therefore, the Project would not degrade the quality of existing public services in the area. The proposed Project would include a traffic management plan to ensure that residents and through traffic would be able to navigate the Project site during construction should temporary road closures be required. Once completed, the new bypass route around the community of Banta would provide improved traffic flows and would not hinder emergency escape routes. As such, no impacts to public services would occur with implementation of the proposed Project.

6.3.10 Recreation

No new parks or expansion of any existing recreation facilities are proposed as part of the Project. The proposed Project would not involve any residential development or employment-generating land uses and would therefore not result in increased population or an associated need for additional recreational facilities. There would be no impact to recreation associated with the Project.

6.3.11 Tribal Resources

As part of the 2016 Cultural Resources Study prepared for the Project, consultation letters were sent on May 11, 2016, to the Native American contacts listed by Native America Heritage Commission, including the Buena Vista Rancheria, the Ione Band of Miwok Indians, the North Valley Yokuts Tribe, and the Wilton Rancheria. Letters included a summary of the proposed Project and provided maps of the Archaeological Study Area for the Project area. The letters also asked the Native American representatives for information regarding cultural resources within the Archaeological Study Area for the Project area and directed inquiries and consultation requests to the County at the contact information provided within the letter. No responses or requests for consultation were received from the Native American representatives.

LSA conducted additional consultation efforts to identify resources within the Project site as part of the 2017 Supplemental Cultural Resources Study that was prepared. On August 8, 2017, LSA sent letters describing the Project with attached maps to the Native American contacts listed by the Native America Heritage Commission, including the Buena Vista Rancheria, the Ione Band of Miwok

Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, and the Wilton Rancheria.

LSA did not receive any responses to the letters sent on August 8, 2017. Follow-up telephone calls were conducted on September 28, 2017, to gather information regarding tribal resources that may be impacted by implementation of the proposed Project. The following summarizes the results of those calls:

- Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria: LSA called Ms. Pope on September 28, 2017, and left a message on her answering machine. Mr. Mike DeSpain returned the call on her behalf and left a voicemail with LSA the same day. Ms. Rhea Sanchez of LSA returned Mr. DeSpain's phone call on the same day and learned that Mr. DeSpain was unable to locate the original letter. Ms. Sanchez emailed Mr. DeSpain a copy of the original letter and invited consultation again if there are any questions or comments regarding the project. No additional communication ensued.

- Crystal Martinez-Alire, Chairperson, Ione Band of Miwok Indians: LSA called Dr. Martinez-Alire on September 28, 2017, and left a message with Acting Language Coordinator Suzanna Walsh. Ms. Walsh took LSA's message, phone number, and email information to forward to Dr. Martinez-Alire. Ms. Walsh said if LSA heard nothing from Dr. Martinez-Alire, to assume no comment.

- Randy Yonemura, Cultural Committee Chair, Ione Band of Miwok Indians: LSA called Mr. Yonemura on September 28, 2017, and left a message with Acting Language Coordinator Suzanna Walsh. Ms. Walsh took LSA's message, phone number, and email information to forward to Mr. Yonemura. Ms. Walsh said if LSA heard nothing from him, to assume no comment.

- California Valley Miwok Tribe: LSA called the number listed on September 28, 2017, and left a message on an answering machine inviting comments and questions regarding the notification letter sent, along with contact information. No response has been received to date.

- Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe: LSA called on September 28, 2017. There was no answer.

- Lois Martin, Chairperson, Southern Sierra Miwuk Nation: LSA called Ms. Martin on September 28, 2017, and left a message on her answering machine inviting comments and questions regarding the notification letter sent, and contact information. No response has been received to date.

- Raymond Hitchcock, Chairperson, Wilton Rancheria: LSA called Mr. Hitchcock on September 28, 2017, and left a message on his answering machine inviting comments and questions regarding the notification letter sent, along with contact information. No response has been received to date.

As described above under Existing Setting, no resources listed or eligible for listing in CRHR or in a local register of historical resources were identified within the Alternative 3A or 4 sites. Additionally, multiple attempts were made by LSA, acting for the County, to seek input from Native American tribal representatives to request information regarding tribal cultural resources within the sites. Consulted Native American tribes provided no information on tribal cultural resources within the Alternative 3A or 4 areas to LSA, and the tribes made no formal requests for consultation under AB 52; therefore, no significant tribal cultural resources have been identified within the Project area.

Although no tribal cultural resources have been identified within the Project area, the potential for encountering as-yet unidentified buried tribal cultural resources cannot be discounted. Therefore, **Mitigation Measures CULT-1, CULT-2, CULT-3** and **CULT-4** shall be implemented to reduce potential impacts to tribal cultural resources under the Project. With implementation of these mitigation measures impacts would be **less than significant**.

6.3.12 Utilities and Service Systems

The proposed Project would not result in any new residences or businesses. Therefore, the proposed Project would not impact wastewater treatment requirements, delivery, or facilities, and no new on-site sewage systems would be required. Any amount of wastewater generated by construction workers would be hauled and treated off site. No impacts would occur to wastewater treatment requirements, nor would new water, wastewater facilities, or sewage systems need to be constructed or expanded. Water for dust control operations during Project construction would be brought in from off site. No further water supplies would be required to serve the proposed Project, and operation would not require water service. The proposed Project is not expected to generate substantial amounts of solid waste during construction. Nearby landfills serving the Project area have sufficient capacity for solid waste generated during construction, and the Project impacts would be less than significant. The Project would comply with all federal, State, and local statutes and regulations related to solid waste. In summary, no adverse impacts would occur to utilities and service systems by the Project.

6.4 UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

In light of the adverse impacts identified pertaining to aesthetics and visual resources, a Statement of Overriding Considerations would be needed prior to Project approval by the County Board of Supervisors. All other impacts resulting from the proposed Project could be mitigated to a less than significant level (discussed in **Appendix B** and **Table A** of this Final EIR).

6.5 SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed Project would result in significant irreversible changes to the physical environment. The *CEQA Guidelines* discuss three categories of significant irreversible changes that should be considered. Each is discussed below.

6.5.1 Changes in Land Use That Commit Future Generations

The proposed Project would require a change of land use from agricultural land to a County roadway right-of-way. Although the proposed Project would result in such a change in land use, the

proposed Project does not commit future generations to the loss of a substantial amount of agricultural land when compared to the existing inventory in San Joaquin County. The Project itself is a bypass to the existing Grant Line Road through Banta, allowing for relief of existing traffic and improvement to roadway safety. The proposed Project would not include changes to land uses and buildout of land uses near the Project site would be governed by the County General Plan. As such, the proposed Project would not generate a change in land uses that commit future generations.

6.5.2 Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosions of hazardous materials, is anticipated due to implementation of the proposed Project. Construction activities associated with the proposed Project would require the use of certain hazardous materials and the disturbance of existing on-site soils that have historically and presently been under agricultural production and are potentially contaminated with hazardous substances. The proposed Project would comply with federal, State, and local regulations related to use of hazardous materials, and handling and disposal of lead-based paint, asbestos-containing materials, and contaminated soils. As the Project would disturb more than 1 acre of soil, a Storm Water Pollution Prevention Plan and a SPCP would be prepared and implemented in the event of accidental release or exposure to hazardous materials (see **Mitigation Measure HAZ-1** discussed in **Appendix B** and **Table A** of this Final EIR). A construction management plan would be prepared and implemented to prescribe activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observations or smell (see **Mitigation Measure HAZ-2** in **Appendix B**). Thus, the proposed Project would not result in irreversible damage from environmental accidents.

6.5.3 Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, agricultural soil, and lost access to mining reserves. The Project site does not contain mineral resources and therefore would not result in the consumption of this nonrenewable resource. The construction of the proposed Project would require the consumption of fossil fuels, electricity, and natural gas; however, the scale of such consumption for the proposed Project would be typical for construction of a project this size. To the extent feasible, sustainable design elements would be incorporated into the proposed Project to minimize use of nonrenewable resources.

As discussed in Section 4.5, Agriculture and Forestry Resources, of this Final EIR, implementation of the proposed Project would irreversibly convert prime soil used for agricultural production to County-owned road right-of-way. The proposed Project would convert 19.1 acres of Important Farmland (all Prime Farmland) and 27.2 acres of land designated/zoned as agricultural land to nonagricultural land, and would thus commit future generations to the results of this conversion. The irretrievable commitment of this site for these uses would be mitigated at a 1:1-acre ratio where land (soil) of equivalent soil quality and characteristics would be set aside in perpetuity via an agricultural conservation easement. This conservation is further described above under **Mitigation Measure AG-1.**

7.0 REPORT PREPARATION

7.1 REPORT PREPARERS

LSA
201 Creekside Ridge Court, Suite 260
Roseville, CA 95678

Laura Lafler, Principal Planner

Edward Heming, Associate Environmental Planner

Amy Fischer, Principal, Senior Air Quality Specialist

Ali Boule, Environmental Planner

Chris Graham, Environmental Planner

Katie Vallaire, Senior Cultural Resources Manager

Dan Williams, Wildlife Biologist

7.2 REFERENCES

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APPENDIX A

NOTICE OF PREPARATION AND PUBLIC COMMENTS ON NOTICE OF PREPARATION

Notice of Preparation

To: OPR State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044
(Address)

From: San Joaquin County Department of Public Works
1810 East Hazelton Avenue
Stockton, CA 95205
(Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

San Joaquin County Department of Public Works will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Chris Graham (LSA) at the address shown above. We will need the name for a contact person in your agency.

Project Title: Grant Line Road Corridor Project

Project Applicant, if any: San Joaquin County Department of Public Works

Date November 9, 2017

Signature Christopher L. Graham

Title Environmental Planner, LSA

Telephone (916) 772-7450

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Governor's Office of Planning & Research
NOV 08 2017
STATE CLEARINGHOUSE

LSA

BERKELEY
CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: November 9, 2017

TO: Office of Planning and Research State Clearinghouse and Affected Agencies (via Certified Mail); Interested Organizations and Persons (via US Mail)

FROM: San Joaquin County

LEAD AGENCY: San Joaquin County
Department of Public Works
1810 East Hazelton Ave.
Stockton, California 95205

CONTACT: Chris Graham
Environmental Planner, LSA
chris.graham@lsa.net
(916) 772-7450

SUBJECT: Notice of Preparation of an Environmental Impact Report (EIR) in accordance with State California Environmental Quality Act (CEQA) Guidelines Section 15082(a) and Notice of Public Scoping Meeting

1.1 NOTICE OF PREPARATION

San Joaquin County (herein referred to as the "County") is the lead agency for preparation of a Focused Environmental Impact Report (EIR) that addresses the potential impacts of the proposed Grant Line Road Corridor Project (herein referred to as the Project). The EIR will evaluate potential significant environmental effects associated with implementation of the proposed Project. The County will use the EIR when considering approval of the proposed Project. Responsible Agencies, which are public agencies other than the County that also have a role in approving or implementing the Project, will likewise need to consider the EIR prepared by the County when issuing approvals for the implementation of the Project. This Notice of Preparation (NOP) was prepared to provide Responsible Agencies, Trustee Agencies, and other Interested Parties with a description of the proposed Project and to identify potential environmental effects pursuant to State CEQA requirements.

This NOP has been prepared pursuant to the California Environmental Quality Act (CEQA) (14 California Code of Regulations [CCR]) and State CEQA Guidelines Sections 15082(A), 15103, and

201 Creekside Ridge Court, Suite 250, Roseville, California 95678 916.772.7450 www.lsa.net

15375 to inform agencies and the public that the EIR is being prepared and to invite early comments and input on the scope and content of the EIR.

The NOP for the proposed Project is available for the requisite 30-day review period from November 9, 2017 to December 8, 2017. The documents will be available from 8 a.m. to 12 p.m. and 1p.m. to 5 p.m., Monday through Friday, at the San Joaquin County Public Works Department located at 1810 East Hazelton Avenue, Stockton, California, 95205, and online at the San Joaquin Public Works Department's website, https://www.sjgov.org/pubworks/.

1.2 PUBLIC REVIEW AND COMMENT PERIOD

In accordance with CEQA, comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. At a minimum, responses to this NOP should focus on:

- the potentially significant environmental effects that the proposed Project may have on the physical environment that should be addressed in the EIR;
- ways in which those effects might be minimized; and
- potential alternatives to the proposed Project that should be addressed in the EIR.

Written comments or questions concerning the EIR for the proposed Project should include your name, the name of your agency or organization (if applicable), and contact information, and should be directed to the environmental project manager at the following address:

Chris Graham, Environmental Planner, LSA, chris.graham@lsa.net, (916) 772-7450

1.3 PROJECT DESCRIPTION

The Grant Line Road/Kasson Road corridor is experiencing large volumes of both vehicle and truck traffic due to the growth of Tracy's population and industrial area in the northeastern part of the City. The community of Banta is located near the middle of the corridor and is at the epicenter of an increase in traffic flows and accidents. Banta is a rural community consisting of residential housing, an elementary school, commercial buildings, and a fire station. West of Banta, the City of Tracy has widened Grant Line Road to a 6-lane thoroughfare. Grant Line Road is a two-lane road east of the City of Tracy's boundary near Chabot Court extending to the intersection with West 11th Street.

The San Joaquin County Department of Public Works (County) is developing a comprehensive corridor plan that addresses traffic operations for both the near-term and the long-term.

During project development, four alternative roadway alignments were evaluated that address the project goals. The County of San Joaquin selected Alternative 3A and Alternative 4 for detailed environmental review and for traffic studies.

Alternative 4 would construct a 4-lane arterial that begins at Chabot Court and continues south-easterly starting at Banta Road to bypass the community of Banta on the south side, continuing

north-easterly to connect back to the existing Grant Line Road alignment near its intersection with West 11th Street. Between South Bird Road and West 11th Street, the new road would be constructed along the north side of the existing Grant Line Road, allowing the existing two-lane road to continue to serve local traffic as a frontage road in the Stoneridge neighborhood. Likewise, Grant Line Road between Banta Road and South Bird Road will remain as a two-lane road to serve local traffic.

Alternative 3A would also construct a 4-lane arterial that begins at Chabot Court and continues south-easterly starting at Banta Road to bypass the community of Banta on the south side. Grant Line would then turn south towards the intersection of 11th Street and South Bird Road, where it would connect to 11th Street via a two lane roundabout. To facilitate access for the community north of 11th street and east of Bird Street, a new roadway would also connect Bird Road to Grant Line Road. Additionally, South Bird Road would dead end just north of 11th Street.

In both Build Alternatives, Grant Line Road will have two travel lanes in each direction, each twelve feet wide, with a fourteen foot-wide median. The median will be either landscaped or will accommodate twelve foot-wide left-turn lanes near intersections with local roadways.

The existing at-grade railroad crossings at Banta Road and 6th Street will be closed and a new at-grade railroad crossing at the new 4-lane Grant Line Road will be constructed.

Standard right-of-way width will be 110 feet for Grant Line Road and existing roads such as Banta, Berry and Bird all have sixty feet existing right-of-way that will need to be maintained. Additional right-of-way would be needed to accommodate outside turn lanes at intersections and for drainage basin locations. Other local roads will have a right-of way of either fifty feet or sixty feet.

1.4 SCOPE OF THE EIR

The EIR will contain full analysis of both the construction (short-term) and operational (long-term) impacts of the Project on the following environmental resource areas: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, noise, and transportation and circulation. Below is a brief summary of potential effects to be discussed in detail in the EIR:

- **Aesthetics** – The EIR will analyze the proposed Project's impacts on visual resources, including scenic vistas and scenic resources. The EIR will also analyze the Project's aesthetic impacts to the existing visual character and quality of the area and impacts associated with light and glare, which could affect day or nighttime views in the area.
- **Agriculture and Forestry Resources** – The EIR will analyze agricultural impacts associated with the Project, including impacts on designated Important Farmland, Williamson Act contracts, existing agricultural land, and forest land.
- **Air Quality** – The EIR will analyze local and regional air quality impacts that would occur as a result of the Project, during both construction and operation. The EIR will also analyze whether the Project will expose sensitive receptors to substantial pollutant concentrations or create objectionable odor affecting a substantial number of people.

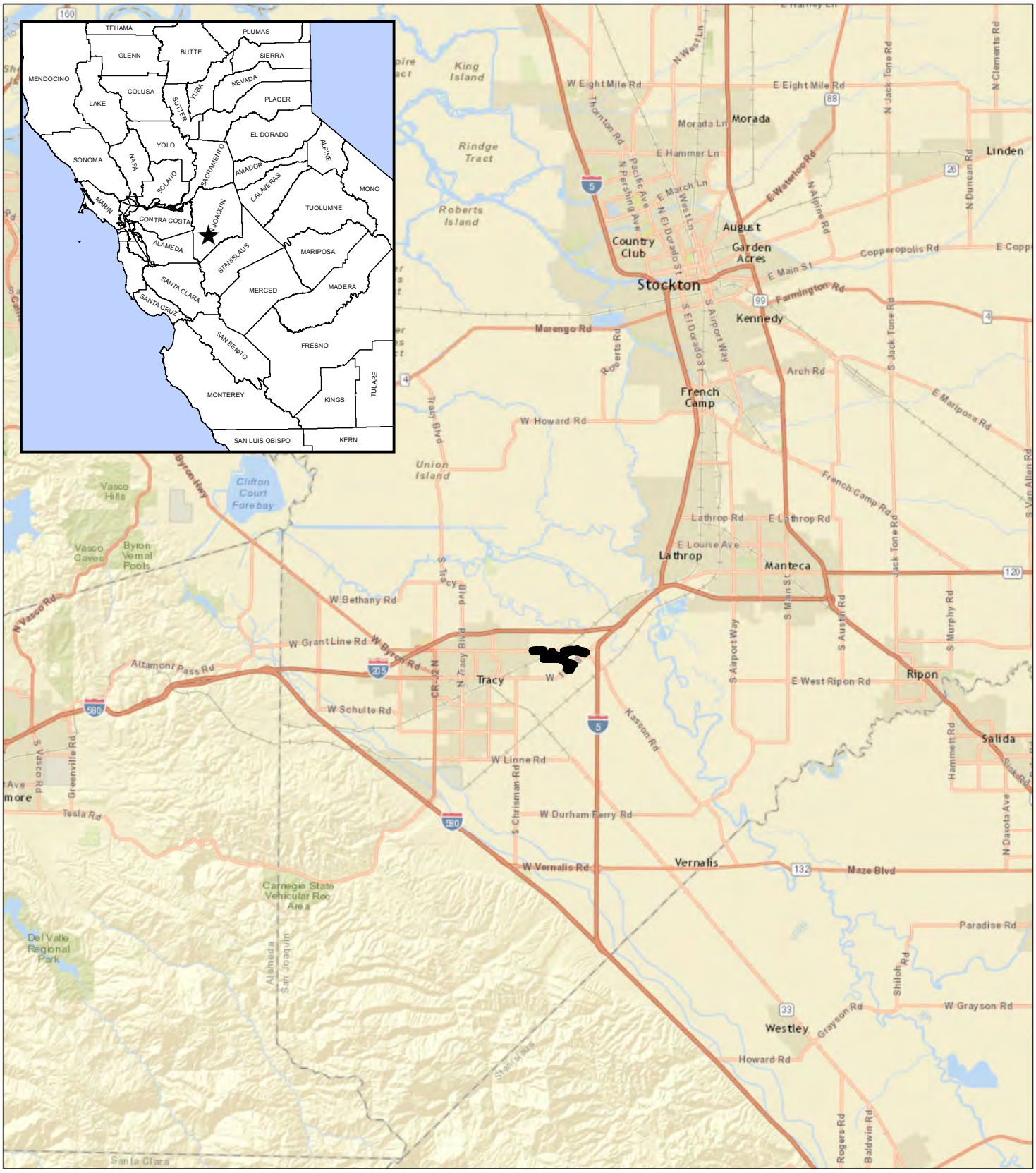
- **Biological Resources** – The EIR will analyze the Project's impacts on special status species, sensitive natural communities, and federally protected wetlands. The EIR will also analyze whether the Project would interfere with wildlife migration, conflict with local policies protecting biological resources, or conflict with an adopted conservation plan.
- **Noise** – The EIR will assess the noise impacts associated with the proposed Project, during both construction and operation, and analyze whether the proposed Project would result in noise levels that exceed the County standards or result in a substantial temporary or permanent increase in ambient noise levels in the Project vicinity. The EIR will also analyze the potential for impacts associated with ground borne vibration and the potential for noise impacts associated with nearby public airports or private airstrips.
- **Transportation and Circulation** – The EIR will analyze the Project's impacts on transportation and circulation. The EIR will analyze whether the Project would conflict with any applicable transportation plans and/or regulations, including those for public transit, bicycle, and pedestrian facilities. The EIR will also analyze whether the Project would result in a change in air traffic patterns, increase hazards due to a design feature or incompatible uses, or result in inadequate emergency access.

The EIR will also examine a reasonable range of alternatives to the Project, including the CEQA-required No Project Alternative, the previously studied Alternative 4, and Alternative 3A, in order to explore all possibilities for avoiding or substantially reducing any potentially significant effects of the Project.

Lastly, the EIR will evaluate the CEQA required assessment conclusions including: Cumulative Impacts, Growth Inducing Impacts, Effects found not to be Significant, Unavoidable Significant Environmental Impacts, and Significant Irreversible Changes.

1.5 ATTACHED FIGURES

- Figure 1: Regional Location
- Figure 2: Project Vicinity on Topographic Base
- Figure 3: Project Area – Alternative 4 Project Design
- Figure 4: Project Area – Alternative 3A Project Design



LSA

LEGEND

Project Location

FIGURE 1

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MILES

SOURCE: ESRI Street Map (2017)

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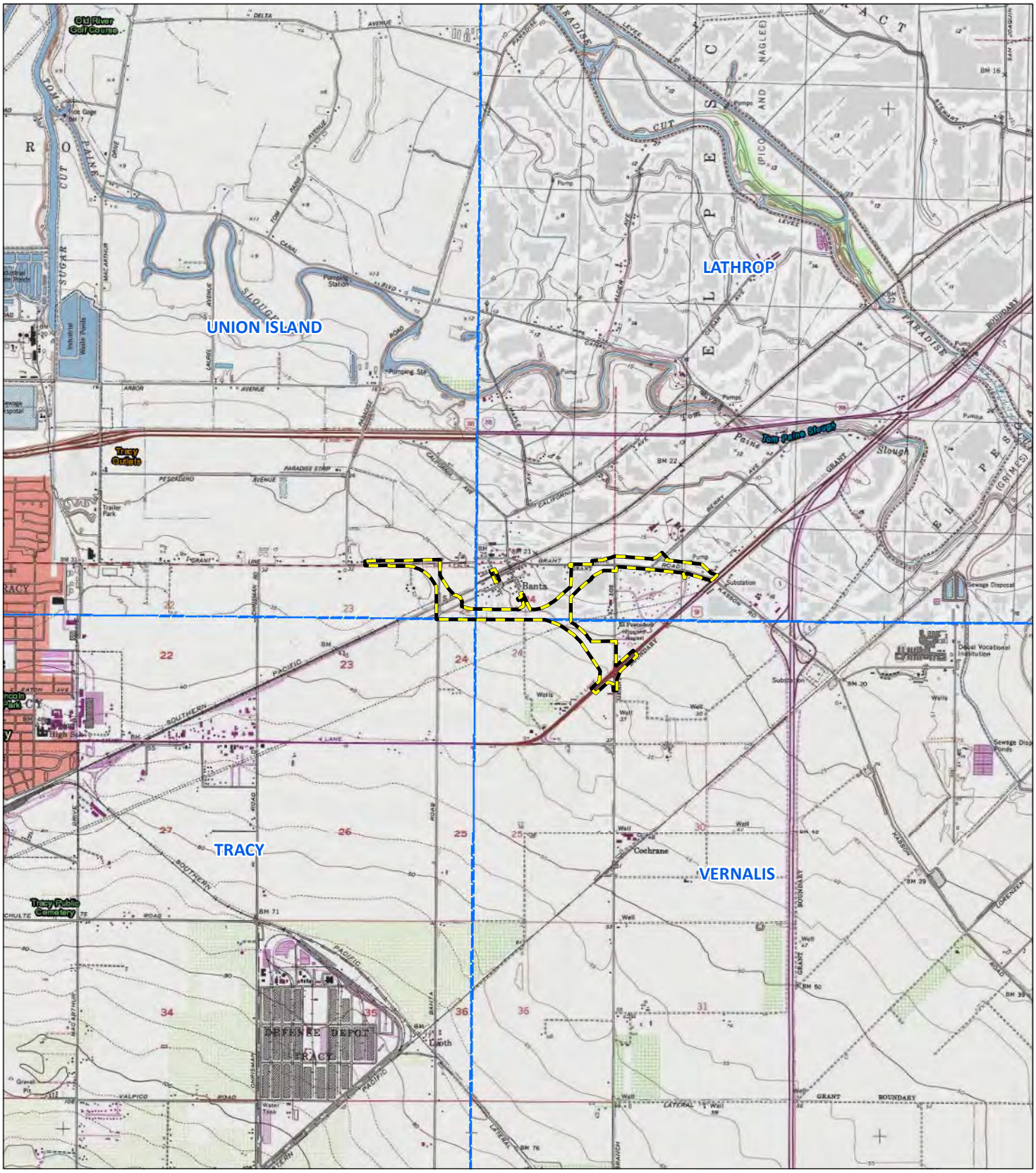
Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Regional Location



LSA

LEGEND

- Study Area
- USGS 7.5-Minute Quadrangle

N

0 2000 4000

FEET

FIGURE 2

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Project Vicinity

SOURCE: USGS 7.5-Minute Quadrangles (Lathrop, Tracy, Union Island, and Vernalis)

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LSA

LEGEND

- Study Area
- Design
- Pavement Removal
- Proposed Right-of-Way

0 350 700
FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (07/2017)

I:\MKT1704\GIS\Reports\EIR\Alternative 3A.mxd (10/26/2017)

FIGURE 3

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 3A

LSA

LEGEND

Study Area

Project Design

0 350 700

FEET

SOURCE: Basemap - NAIP (06/2016); Design - Mark Thomas (06/2016)

I:\MKT1704\GIS\Reports\EIR\Alternative 4.mxd (10/26/2017)

FIGURE 4

Grant Line Road Corridor Project
San Joaquin County, California
LSA Project No. MKT1704

Alternative 4

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202 • P 209.235.0600 • F 209.235.0438 • www.sjcog.org

San Joaquin County Airport Land Use Commission/Congestion Management Agency

Katherine Miller
CHAIR
Robert Rickman
VICE CHAIR
Andrew T. Chesley
EXECUTIVE DIRECTOR
Member Agencies
CITIES OF ESCALON, LATHROP, LODI, MANTECA, RIPON, STOCKTON, TRACY, AND THE COUNTY OF SAN JOAQUIN

November 15, 2017

Chris Graham
LSA
201 Creekside Ridge Court #250
Roseville, CA 95678

Re: NOP EIR Grant Line Road

Dear Chris Graham,

The San Joaquin Council of Governments (SJCOG), acting as the Airport Land Use Commission (ALUC) and Congestion Management Agency (CMA), has reviewed a Notice of Preparation of an EIR for altering Grant Line Road between City of Tracy limits and Eleventh Street in Unincorporated San Joaquin County, CA.

CONGESTION MANAGEMENT AGENCY'S REVIEW

SJCOG adopted the 2016 Update to the Regional Congestion Management Program (RCMP) (http://www.sjcog-rcmp.org/_literature_231152/2016_RCMP_Update_Adopted_Report) on March 24, 2016). Chapter 6 of the RCMP describes the updated Land Use Analysis Program, including Tier 1 and Tier 2 review/analysis requirements, analysis methods, impact significance criteria, and mitigation.

SJCOG recommends the applicant review the following documents as project is required to show consistency with all applicable regional transportation planning documents, such as:

- Regional Transportation Demand Management Plan
- Park-and-Ride Master Plan
- Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan
- Regional Smart Growth Transit Oriented Development Plan
- Regional Transit Systems Plan
- Regional Transportation Impact Fee Program
- 2014 Regional Transportation Plan/Sustainable Communities Strategy
- Interregional STAA Study for I-5 and SR-99
- Regional Congestion Management Program

SJCOG staff is available to assist with project specific guidance and narrowing the scope of the relevant regional plans that need to be included. Additionally, SJCOG has completed updating the RCMP including traffic count data of all the segments and intersections on the CMP network. SJCOG would be pleased to provide this data to the City and its consultants to assist in the traffic analysis for this project.

AIRPORT LAND USE COMMISION'S REVIEW

This project is not located within any airport influence area; thus, no further review is required at this time.

SJCOG would like to provide standards and project design conditions that comply with the Airport Land Use Compatibility Plan as a reference guide.

1. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:
    a. Glare or distracting lights which could be mistaken for airport lights. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs).
    b. Sources of dust, steam, or smoke which may impair pilot visibility.
    c. Sources of electrical interference with aircraft communications or navigation. No transmissions which would interfere with aircraft radio communications or navigational signals are permitted.
    d. Occupied structures must be soundproofed to reduce interior noise to 45 decibel(dB) according to State guidelines.
    e. Within the airport's influence area, ALUC review is required for any proposed object taller than 100 feet above ground level (AGL).

2. Regardless of location within San Joaquin County, ALUC review is required in addition to Federal Aviation Administration (FAA) notification in accordance with Code of Federal Regulations, Part 77, (https://oeaaa.faa.gov/oeaaa/external/portal.jsp) for any proposal for construction or alteration under the following conditions:

    a. If requested by the FAA.
    b. Any construction or alteration that is more than 200 ft. AGL at its site.
    c. Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
        i. 100 to 1 for a horizontal distance of 20,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway more than 3,200 ft.
        ii. 50 to 1 for a horizontal distance of 10,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway no more than 3,200 ft.
        iii. 25 to 1 for a horizontal distance of 5,000 ft. of the nearest take off and landing area of a public use heliport
    d. Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
    e. Any construction or alteration located on a public use airport or heliport regardless of height or location.

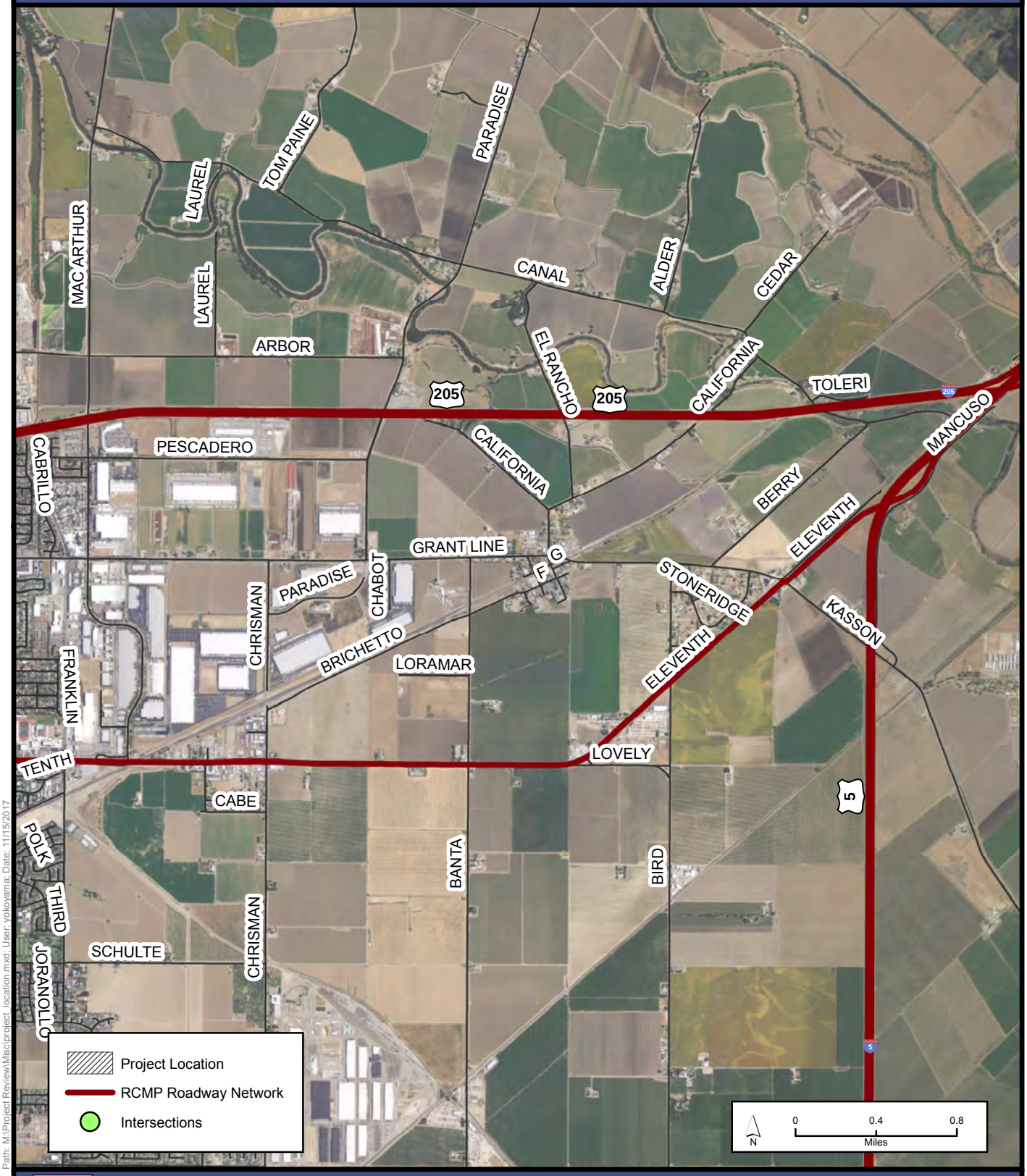
Thank you again for the opportunity to comment. Please contact CMA and ALUC staff Travis Yokoyama (209-235-0451 or yokoyama@sjcog.org) if you have any questions or comments.

Sincerely,

Travis Yokoyama

ATTACHMENT A – Exhibit of Project Site Location in relation to RCMP Network

NOP EIR Grant Line Road
Unincorported San Joaquin County



Path: M:\Project Review\Misc\project_location.mxd; User: yokoyama; Date: 11/15/2017

REGIONAL CONGESTION MANAGEMENT PROGRAM

Chris Graham

From: jowens114@aol.com
Sent: Friday, November 24, 2017 10:22 PM
To: Chris Graham
Subject: Grant Line Road Corridor Project

Hello Chris,

I just left a voice message for you.

I a property owner on Grant Line Road, Banta. I was just reviewing the LSA Memorandum dated November 9, 2017.

1.3 states incorrectly there is a fire station in Banta. There is no longer a fire station in Banta. A residential home is now in the fire station building on Grant Line Road.The fire station was closed and relocated years ago to the other end of Grant Line Road, in the City of Tracy limits, near MacArthur Blvd.

Questions for you:

1. When will the Public Scoping Meeting be held and where? (Notice mentioned in the Subject line).
2. How will Banta residents be alerted of this meeting?

Regards,
Joann Rocha Owens
415.706.8583

Chris Graham

From: Chris Graham
Sent: Monday, November 27, 2017 7:50 AM
To: jowens114@aol.com
Cc: Edward Heming; Chris Graham
Subject: RE: Grant Line Road Corridor Project

Good Morning Ms. Owens

Thank you for contacting me via voice mail and email regarding the Grant Line Corridor Road Project. The following provides answers to the questions that you had:

1. Regarding the "fire station in Banta" we will be sure to identify the new location of Fire Station 92 (within the City of Tracy) in the focused EIR.
2. A Public Meeting will be held during the 45-day Public Review of the focused EIR. The Public Review of the focused EIR is anticipated/estimated to begin either towards the end of the year (2017) or early 2018.
3. A Public Notice will be sent out to interested parties (residents, businesses, etc.) and will be published in local newspapers indicating the commencement of the Public Review of the focused EIR. The Public Notice will provide the dates of the review period and the date/time/location of the Public Meeting on the Project.

Thank you again for your inquiry in the Project.

Regards,

Chris Graham | Environmental Planner
LSA | 201 Creekside Ridge Court, Suite 250
Roseville, CA 95678
916-772-7450 Tel
916-772-7451 Fax
916-772-7455 Ex. 149 Direct

From: jowens114@aol.com [mailto:jowens114@aol.com]
Sent: Friday, November 24, 2017 10:22 PM
To: Chris Graham
Subject: Grant Line Road Corridor Project

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Questions for you:

1. When will the Public Scoping Meeting be held and where? (Notice mentioned in the Subject line).
2. How will Banta residents be alerted of this meeting?

Regards,
Joann Rocha Owens
415.706.8583

STATE OF CALIFORNIA EDMUND G. BROWN JR. *Governor*

PUBLIC UTILITIES COMMISSION
180 PROMENADE CIRCLE, SUITE 115
SACRAMENTO, CA 95834

November 27, 2017

Chris Graham
Environmental Planner, LSA
chris.graham@lsa.net
(916) 772-7450

Dear Mr. Graham,

San Joaquin County, Grant Line Road Corridor Project - NOP

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway- rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings in California. The Commission's Rail Crossings and Engineering Branch (RCEB) has received the Notice of Preparation (NOP*)* of an Environmental Impact Report for the proposed County of San Joaquin (County) Grant Line Road Corridor Project.

In the NOP, the County proposes a new 4-lane arterial roadway in the vicinity of the Community of Banta. The new road would cross at-grade over active Union Pacific Railroad Company (UPRR) rail tracks. Commission General Order (GO) 75-D, Section 2 states:

"POLICY ON REDUCING NUMBER OF AT-GRADE CROSSINGS
As part of its mission to reduce hazards associated with at-grade crossings, and in support of the national goal of the Federal Railroad Administration (FRA), the Commission's policy is to reduce the number of at-grade crossings on freight or passenger railroad mainlines in California."

The Commission's policy does not differentiate between highway-rail and pedestrian-rail crossings. The Commission's policy is to 'reduce' the number of all at-grade crossings.

RCEB's primary concern is safety, and recommends the County seriously pursue grade-separating the proposed Grant Line Road crossing. In Commission Rules of Practice and Procedure, Section 3.7 (c), applications to construct a new at-grade crossing must contain the following:

(1) a statement showing the public need to be served by the proposed crossing;
(2) a statement showing why a separation of grades is not practicable; and
(3) a statement showing the signs, signals, or other crossing warning devises which applicant recommends be provided at the proposed crossing.

As part of the project, the County also proposes to close the 6th Street crossing (CPUC #001TTL-85.46, DOT# 753050H) in Banta. At this crossing location, 6th Street is a two-lane road with a most current listed ADT of less than 100 cars per day. This crossing closure would do little to mitigate the impact of adding a four lane arterial roadway and the proportional increase in vehicle traffic it will bring over the UPRR tracks.

Working with RCEB staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers. The County would then need to file a formal application with the Commission and request authority, under Public Utilities Code Sections 1201-1205, to construct the new crossing. If uncontested, the Commission approval proceeding may take up to one and one-half (1 ½) years to complete.

If you have any questions in this matter, please contact me at (916) 928-2515 or david.stewart@cpuc.ca.gov.

David Stewart

Utilities Engineer
Rail Crossings and Engineering Branch
Safety and Enforcement Division

C: State Clearinghouse

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

1 December 2017

Chris Graham
San Joaquin County
1810 East Hazelton Avenue
Stockton, CA 95205

CERTIFIED MAIL
91 7199 9991 7036 6996 5153

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, GRANT LINE ROAD CORRIDOR PROJECT, SCH# 2017112022, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 9 November 2017 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation of the Draft Environmental Impact Report* for the Grant Line Road Corridor Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]
The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Caltrans Phase I MS4 Permit, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit
Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance (i.e., discharge of dredge or fill material) of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements (WDRs)

Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

Land Disposal of Dredge Material

If the project will involve dredging, Water Quality Certification for the dredging activity and Waste Discharge Requirements for the land disposal may be needed.

Local Agency Oversite

Pursuant to the State Water Board's Onsite Wastewater Treatment Systems Policy (OWTS Policy), the regulation of septic tank and leach field systems may be regulated under the local agency's management program in lieu of WDRs. A county environmental health department may permit septic tank and leach field systems designed for less than 10,000 gpd. For more information on septic system regulations, visit the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/owts/sb_owts_policy.pdf

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the

Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

November 30, 2017

Chris Graham
San Joaquin County
1810 East Hazelton Avenue
Stockton, CA 95205

RE: SCH#2017112022, Grant Line Road Corridor Project, San Joaquin County

Dear Mr. Graham:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.

b. The lead agency contact information.
c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources

Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

cc: State Clearinghouse

BUILDING AMERICA®

December 15, 2017

Via Electronic Mail
E-Mail: Chris.graham@lsa.net

Chris Graham
Environmental Planner
LSA
916-772-7450

Re: Union Pacific Railroad Company's Comments to the Notice of Preparation of an Environmental Impact Report (EIR) for the Proposed Grant Line Road Corridor Project

Dear Mr. Graham:

Union Pacific Railroad Company ("UP") appreciates this opportunity to comment on the November 9, 2017 Notice of Preparation ("NOP") of an Environmental Impact Report ("EIR") for the Grant Line Road Corridor Project ("proposed Project' or "Project"), for which San Joaquin County ("County") is the lead agency. Thank you for the extension of time for UP to submit its comments.

UP's Tracy Railyard is located immediately west of the existing Banta Road and 6th Street at-grade crossing and only a few hundred feet from the Project's new proposed at-grade railroad crossing location where the new four-lane Grant Line Road is anticipated. UP has an interest in the Project alternatives, transportation impacts, and mitigation measures analyzed in the Project's EIR specific to the Banta Road railroad crossing. Closure of an existing crossing and opening of a new at-grade crossing where currently no large road exists will significantly impact rail operations, public safety, and traffic functionality.

UP appreciates the County's objective to alleviate the large volumes of vehicle and truck traffic along the Grant Line Road/Kasson Road corridor and increase public safety, and is supportive of the proposed Project as a whole. However, the County's proposed Build Alternatives overlook material environmental and safety consequences that will result from the Project's anticipated railroad crossing plans.

For reasons discussed more fully below, the Project's proposed closure of the existing Banta Road and 6th Street at-grade railroad crossing and construction of a new at-grade railroad crossing at the new expanded Grant Line Road is both infeasible and

UNION PACIFIC RAILROAD COMPANY
LAW DEPARTMENT
10031 Foothills Boulevard, Suite 200
Roseville, CA 95747

David M. Pickett
Senior General Attorney

P (916) 789-6218
F (916) 789-6227
dmpicket@up.com

hazardous. Grade separation must be provided at the new intersection. Therefore, UP opposes the two Build Alternatives (Alternative 3A and Alternative 4) identified in the NOP to the extent that they impact or potentially impact UP rail infrastructure and operations, absent revising the Project design to provide a grade separation at the new four-lane Grant Line Road and UP railroad tracks. UP also asks the County to explicitly acknowledge that the Project will adhere to UP's operational and design standards specific to highway-rail grade separation and crossing safety.

I. UP owns and operates critical rail lines within the Project area that will be significantly affected by the proposed Project. Environmental analysis of all potential rail construction and operational impacts as a result of the proposed Project is necessary under CEQA.

UP owns and operates a common carrier railroad network in the western half of the United States, including rail lines that connect the San Francisco Bay Area, Sacramento, Los Angeles, and other points throughout the state and beyond. UP is the largest rail carrier in California in terms of both mileage and train operations. UP's rail network is vital to the economic health of California and the nation as a whole. Its rail service to customers along the I-5 and Tracy corridor is crucial to the future success and growth of the Central Valley's economy.

UP met with County representatives several years ago and expressed concerns with the Project's anticipated new at-grade crossing at Grant Line Road. The existing Banta Road at-grade rail crossing directly east of UP's rail yard experiences a vehicle volume of less than 1,000[1] average daily traffic ("ADT"[2]). In both Project Alternatives identified in the NOP, the existing at-grade railroad crossing at Banta Road will be closed and a new at-grade railroad crossing at the new four-lane Grant Line Road will be constructed in order to create a more direct route to the industrial area of Tracy and Interstate 5. Grant Line Road currently experiences approximately 10,700 ADT and it is estimated that nearly 21,000-27,000 vehicles will use the road by the year 2035.[3] Moreover, it is anticipated that the Project will redirect approximately 18,000

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[1] United States Department of Transportation, Federal Railroad Administration, U.S. DOT Crossing Inventory Form, DOT Crossing Inventory Number 753051P, June 5, 2017.

[2] Average Daily Traffic ("ADT") is a measurement of a roadway's average daily traffic over a 24-hour time period.

[3] United States Department of Transportation, Federal Railroad Administration, U.S. DOT Crossing Inventory Form, DOT Crossing Inventory Number 753048G, May 1, 2017. *See also* Michael Langley, *County Plans Four-Lane Bypass Around Banta*, GOLDEN STATE NEWSPAPERS: TRACY PRESS NEWS. February 19, 2016. *Available at* http://www.goldenstatenewspapers.com/tracy_press/news/county-plans-four-lane-bypass-around-banta/article_7541a544-d6a6-11e5-9814-bfe4bea8dec0.html.

ADT over the new alignment. Notwithstanding these projections, and the fact that the Project proposes a new rail crossing at a location where no major road currently exists, no grade separation has been proposed.

In addition to the significant number of vehicles expected to use the new at-grade crossing at Grant Line Road, the County must also consider the probability that the crossing will experience blockages due to rail operations. Ordinary operations at the Tracy Railyard already routinely block the Banta Road/6th Street crossing. Traffic at that lightly-used crossing is able to accommodate by taking other nearby routes. However, traffic on a major arterial route with multiple lanes will not have that flexibility. Although UP cannot foresee how often or for how long Grant Line Road may be blocked, the County must assume that blockages will occur because of routine and necessary rail operations. Avoiding those conflicts is a further compelling reason to grade-separate any new access.

The County should also understand that railroad operations will not be able to change to avoid traffic conflicts at a new crossing at Grant Line Road. Unlike road infrastructure, railroads are fixed systems that cannot easily accommodate detours or obstructions. Each component of the rail network is critical to the overall fluidity and velocity of rail operations. Disruptions in one location can cause a cascading series of delays that can impact operations and communities throughout the network. Any disruption of these operations can slow the processing of freight, which can result in increased truck queuing time and congestion on area streets, increased idling emissions for trucks and locomotives, intensified use of alternative routes with increased noise and emission impacts, and increased congestion along the alternative routes.

The California Environmental Quality Act ("CEQA")[4] requires that project review must encompass all components of the activity being approved, including reasonably foreseeable consequences of the proposed approval and components that are an integral part of the project. CEQA Guidelines § 15378[5]; *see, e.g., Bozung v. Local Agency Formation Comm'n*, 13 Cal. 3d 263, 279– 81, 289 (1975); *Laurel Heights Improvement Ass'n v. Regents of the Univ. of Cal.*, 47 Cal. 3d 376, 395– 398 (1988) (*Laurel Heights I*); *No Oil, Inc. v. City of Los Angeles*, 196 Cal. App. 3d 223, 237 (1987). Therefore, environmental analysis of all potential rail construction and operational impacts as a result of the proposed Project should be included in the Project's EIR.

[4] Cal. Pub. Res. Code §§ 21000 *et seq.*
[5] The CEQA Guidelines are codified at California Code of Regulations Title 14 § 15000 et seq.

II. The closure or addition of rail crossings is subject to the approval of the California Public Utilities Commission and should be considered in light of policies to reduce the number of at-grade crossings to enhance rail safety. UP asks the County to adhere to UP's highway-rail grade separation and crossing safety standards and require grade separation at the new rail crossing proposed at Grant Line Road.

The safety of rail crossings is a subject of statewide concern and falls under the jurisdiction of the California Public Utilities Commission ("CPUC").[6] The CPUC must approve any new crossings (at-grade or grade separated) or modification of existing rail crossings. The CPUC's policy on eliminating at-grade crossings is stated in its General Order 75-B, § 2: "As part of its mission to reduce hazards associated with at-grade crossings, and in support of the national goal of the Federal Railroad Administration (FRA), the Commission's policy is to reduce the number of at-grade crossings on freight or passenger railroad mainlines in California." Any applicant requesting a new at-grade crossing must satisfy specific and rigorous findings to overcome a strong presumption by the CPUC that all new crossings should be grade-separated.[7]

In addition to the CPUC's highway-rail crossing jurisdictional authority and safety and maintenance oversight, the United States Department of Transportation has a goal of reducing the number of at-grade crossings through consolidation, grade separation, elimination, and restriction on the number of new crossings constructed. In line with this goal, UP, other railroads, the FRA, and most states encourage communities to carefully consider all alternatives, including grade separations, as opposed to the creation of new at-grade rail crossings.

UP endorses the federal initiative to reduce the number of at-grade crossings and has developed comprehensive operational and rail standards specific to highway-rail grade separation and crossing safety.[8] As part of these standards, UP asks for multiple public grade crossings to be closed as a condition of creating a new crossing.

---

[6] *Northwestern Pac. R.R. Co. v. Superior Court*, (1949) 34 Cal.2d 454, 458, and *City of San Mateo v. Railroad Com.* (1937) 9 Cal.2d 1, 9-10. *See also*: "Under [Cal. Pub. Util. Code §§] 1201 and 1202 authorization is required for the creation of any grade crossing of a railroad and any public road or street. The Commission has exclusive power to prescribe terms of installation, use, and protection of crossings; to relocate or abolish crossings by physical closing; to require a separation of grades, and to apportion costs between railroads, the state, and political subdivisions [footnote omitted]." (Roderick B. Cassidy, *Public Utility Regulation in California*, Commentary to the Public Utilities Code, 1954, p. 15).

[7] *See* California Public Utilities Commission Rules of Practice and Procedure Rule 3.7(c)(2); Cal. Pub. Util. Code § 1201(c); *see also In re Exposition Metro Line Const. Auth.*, Interim Opinion, Application 06-12-005, at 17, Decision 07-12-028 (Dec. 2008); *In re City of San Diego*, 2003 WL 23104223, at *5 (Cal. PUC Dec. 4, 2003, Decision 03-12-018).

[8] *See* https://www.up.com/real_estate/roadxing/industry/new_conversion/index.htm.

Specifically, proposals for establishing a new public crossing should identify three or more crossing closures for each new crossing opened unless there are contrary engineering or rail operation considerations. For the sake of safety, every reasonable effort should be made to provide access without creating new grade crossings. In addition, as a matter of operational efficiency, some locations will not be approved for crossings because of railroad engineering and operational considerations. UP asks the County to explicitly recognize and acknowledge these standards as they relate to the proposal to close an existing rail crossing and add a new one.

Thank you for the opportunity to express our views. Please forward these comments to appropriate representatives at the County before any further action is taken with respect to proposed Project.

Sincerely,

DAVID M. PICKETT

DMP/jlg

MEMORANDUM

TO: Chris Graham

FROM: Robert Harris

SUBJECT: Comments on NOP

DATE: December 15, 2017

This memorandum is in response to the Notice of Preparation for the Focused Environmental Impact Report to be prepared by your organization for the Grant Line Road Corridor Project in the Banta area of San Joaquin County.

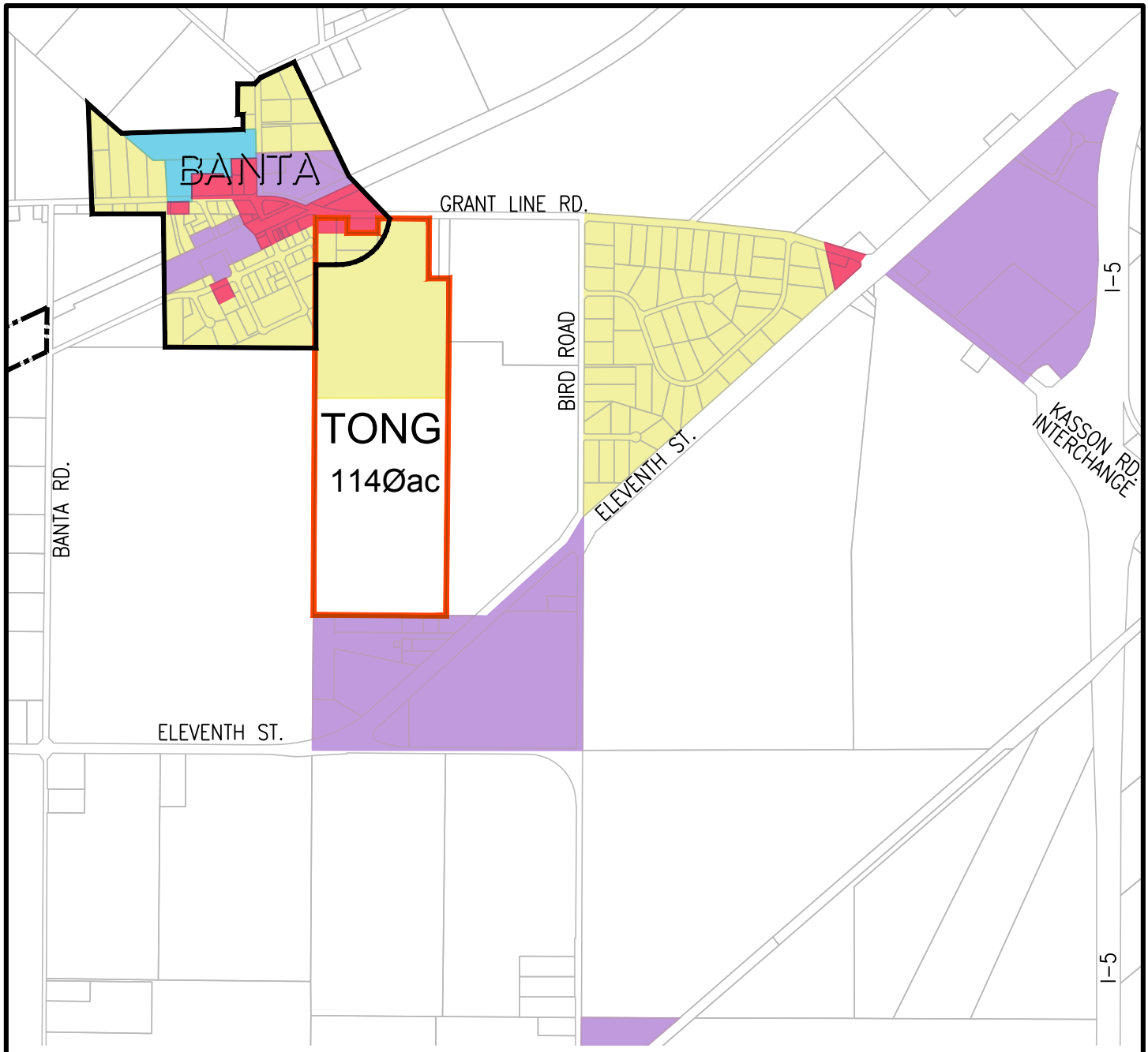
I represent James Tong owner of an 110.84 acre parcel located immediately east of the community of Banta which would be severely impacted by the two alternatives described in the NOP. Both alternatives show the realigned Grant Line Rd cutting across the full width of Mr. Tong's property; Alternative 3A to the southeast and Alternative 4 to the northeast. The northern approximately 47 acres of the Tong parcel are designated Rural/Residential (R/R) on the San Joaquin County General Plan. This portion of the property is currently being rezoned to Rural Residential for the purpose of filing a major subdivision map on it. The subdivision could contain as many as 40 single family lots.

We have done preliminary lotting studies on the 47 acres to try and determine how Mr. Tong's subdivision would be impacted by the two alternatives. Both Alternative 3A and 4 would result in a major four-lane highway (two lanes each way) running completely across the southern part of the R/R portion of Mr. Tongs property. This would be a highly intrusive feature which would completely change the nature of the residential community which he proposes for the property. It would mean that the southern about one quarter of the community would be separated from the rest of the subdivision by an 110 ft wide major County highway carrying over 20,000 ADT per day. This would be excessively disruptive to the silvan community Mr. Tong hopes to develop on the site.

To reduce the Project's negative impacts to Mr. Tong's property we ask that the EIR examine a modification to Alternative 3A. That modification would move Grant Line Rd approximately 440 feet to the south so the northern edge of its ROW would be immediately adjacent to the southern boundary of the R/R portion of the Tong parcel. We realize this modification would result in the separation of the northern portion of the Edwards' property from its southern remainder but that was the case in the original Alternative 3 which would have severed even more of that property from its southern remainder. For some reason Alternative 3 was not deemed to be desirable, so Alternatives 3A and 4 were chosen for study in the EIR. It should be noted that those two alternatives favor Mr. Edwards property to the detriment of Mr. Tong's.

In conclusion Mr. Tong objects to Alternatives 3A and 4 and asks that the modification described above be studied in the upcoming EIR. Additionally he feels that Alternative 3 is superior to Alternatives 3A and 4. Of those two alternatives he favors Alternative 3A over Alternative 4.

Thank you very much for your consideration of this matter.



LEGEND:

- CITY LIMIT LINE
- R/R
- P
- C/RS
- I/L
- A/G (ALL LAND NOT COLORED)

TONG PROPERTY LAND USE TABLE	
R/R	50 ac
C/RS	0.5-1.0 ac
A/G	63 ac
TOTAL	114 ac

Proposed Land Use Designations for the Tong Property

San Joaquin County General Plan Update

N.T.S.

04-08-2013 3:52pm Lisa Vilhauer P:\16154\PLANNING\2012\ARCHIVE\LOCATIONMAPS-20130408LV.DWG

REFERENCES: parcels

From:	rjhassociates@comcast.net
To:	Chris Graham
Cc:	Tong, Jim
Subject:	Re: Grant Line Road Corridor Project NOP
Date:	Friday, December 15, 2017 3:11:37 PM
Attachments:	LocationMaps-Tong-20130408.pdf nop comment memo.odt

---

Mr. Graham:

The attached memorandum constitutes our comments on the NOP for the EIR for the Grant Line Road Corridor Project. Mr. Tong has great concern about the two alternatives in the NOP and asks that a third alternative, as described in the memo, be studied in the EIR.

Also attached is a map which shows the location of the Tong property and its relation to the community of Banta. The 114 acre lot shown on the map is the 110.84 acre parcel mentioned in the memo plus two additional parcels Mr. Tong owns immediately adjacent. The 47 acre R/R portion of the 110.84 acre parcel is the area in yellow on his property.

If you have any questions, please don't hesitate to contact me. I appreciate your flexibility in allowing to comment on the NOP after the close of the comment period.

Bob Harris

From: "Chris Graham" <Chris.Graham@lsa.net>
To: RJHassociates@comcast.net
Cc: "Chris Graham" <Chris.Graham@lsa.net>, "Edward Heming" <Edward.Heming@lsa.net>
Sent: Friday, December 8, 2017 2:25:28 PM
Subject: Grant Line Road Corridor Project NOP

Good Afternoon Mr. Harris – Thank you for your call regarding the Grant Line Road Corridor Project. It was a pleasure speaking with you on the telephone. Per our conversation I have attached the NOP for the Grant Line Road Corridor Project that was made public commencing on November 9, 2017. Per our conversation, if you do have any comments on the NOP, we will accept them **via email** up to Friday November 15, 2017.

I have checked the stakeholders list and have requested that your client Mr. James Tong be added to our list so he is informed of future meetings for the Project.

Thank you

Chris Graham | Environmental Planner
LSA | 201 Creekside Ridge Court, Suite 250
Roseville, CA 95678
916-772-7450 Tel

916-772-7451 Fax
916-772-7455 Ex. 149 Direct

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APPENDIX B

INITIAL STUDY

DRAFT

CEQA INITIAL STUDY

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

LSA

December 2017

DRAFT

CEQA INITIAL STUDY

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

Submitted to:

San Joaquin County
Department of Public Works
1810 East Hazelton Avenue
Stockton, California 95205

Prepared by:

LSA
201 Creekside Ridge Court, Suite 250
Roseville, California 95678
(916) 772-7450

Project No. MKT1704

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1.0 INTRODUCTION

The County of San Joaquin (County) proposes to construct a four-lane arterial to bypass the community of Banta (project). The preferred alternative (Alternative 3A) begins at the eastern Tracy city limits, continuing southeasterly to bypass the community of Banta, and subsequently connecting to 11th Street. The project is in the San Joaquin Valley south of the existing Grant Line Road corridor in the southwestern portion of San Joaquin County. The Area of Potential Effect (APE) defines the boundary of the Project site and is 75.7 acres.

ENVIRONMENTAL REVIEW

The Grant Line Road Corridor Project proposed by the County constitutes a "project" in accordance with the California Environmental Quality Act (CEQA). Prior to approval of the project, the County must provide an environmental review in accordance with CEQA to assess the potential impacts of the project, including mitigation where necessary.

This Initial Study (IS) has been prepared as the environmental documentation in anticipation of determining that some potentially significant impacts from implementation of the project cannot be mitigated to less than significant levels. Accordingly, an Environmental Impact Report (EIR) is being prepared to provide environmental review and clearance for the project. The information included in this document is intended to clarify the areas of potential environmental concern and discuss the project's potential impacts on the environment.

Summary Information

1. **Project Title:** Grant Line Road Corridor Project

2. **Lead Agency Name and Address:**
   San Joaquin County Public Works Department
   1810 East Hazelton Avenue
   Stockton, California 95205

3. **Contact Person and Phone Number:**
   Jeffrey Levers
   Engineer
   San Joaquin County Public Works Department
   (209) 953-7631

4. **Project Location:** The alternative sites are located in the southwestern portion of San Joaquin County. The preferred alternative (Alternative 3A) begins at the intersection of Grant Line Road and Chabot Court, continues east, swinging south of the community of Banta, and terminates at the 11th Street/Bird Road intersection. The Alternative 3A boundary totals 75.7 acres.

5. **Project Sponsor's Name and Address:** San Joaquin County Public Works Department
   1810 East Hazelton Avenue, Stockton, California 95205

6. **General Plan Designation:** General Agriculture (A/G); Rural Residential (RR); Rural Service Commercial (C/RS); and Industrial/Limited (I/L) within the County, and Industrial within the City of Tracy.

7. **Zoning:** General Agriculture (AG-40); Rural Residential (R-R); Rural Service Commercial (C-RS); and Warehouse Industrial (I-W) within the County, and Northeast Industrial Areas Specific Plan (NEI) within the Tracy city limits.

8. **Description of Project:**

Alternative 3A

Alternative 3A is a 1.65-mile-long corridor south of the community of Banta in the southwestern portion of San Joaquin County. The Alternative 3A site begins at the intersection of Grant Line Road and Chabot Court, continues east, swinging south of the community of Banta, and terminates at the 11th Street/Bird Road intersection. The Alternative 3A boundary totals 75.7 acres in size.

The Grant Line Road corridor is experiencing large volumes of both vehicle and truck traffic due to the growth of Tracy's population and industrial area in the city's northeastern portion. The community of Banta, located near the middle of the corridor, has become the epicenter of an increase in traffic flows and accidents. Banta is a rural community consisting of residential housing, an elementary school, and commercial buildings. West of Banta, Tracy has widened Grant Line Road to a six-lane thoroughfare. Grant Line Road is a two-lane road east of Tracy's boundary near Chabot Court, extending to the intersection with West 11th Street.

The San Joaquin County Department of Public Works is developing a comprehensive corridor plan that addresses traffic operations for both the near-term and the long-term.

The objectives of the Alternative 3A project are as follows:

- To alleviate congestion
- To improve safety

The County evaluated four alternative roadway alignments that address the Grant Line Corridor Project goals. The County has selected Alternative 3A as the preferred alternative. The following discusses the details of the build alternative proposed for Alternative 3A.

Under Alternative 3A, Grant Line Road would be aligned in a southerly direction toward 11th Street and Bird Road, where it would connect via a two-lane roundabout. To facilitate access for the community north of 11th Street and east of Bird Street, a new roadway would connect Bird Road to Grant Line Road. Additionally, South Bird Street north of 11th Street would dead end just before 11th Street. Grant Line Road would have two travel lanes in each direction, each 12 feet wide, with a 14-foot-wide median. The median either would be landscaped or would accommodate 12 foot-wide left-turn lanes near intersections with local roadways.

Alternative 4

The Alternative 4 design is a 2.4-mile-long corridor along Grant Line Road in San Joaquin County's southwestern portion. The Alternative 4 site begins at Tracy's eastern boundary, continues east through the unincorporated community of Banta, under the Interstate 5 overcrossing, and terminates just to the west of Mancuso Road. The boundary of Alternative 4 is 96.33 acres in size. Alternative 4 is located along Grant Line Road traveling east from the Tracy city limits in San Joaquin County in the rural community of Banta. According to the City of Tracy General Plan, land uses at Alternative 4's western terminus are industrial. According to the San Joaquin County General Plan, the land surrounding Alternative 4 is designated for limited industrial, medium density residential, rural residential and public space. Uses on the surrounding land include active agricultural fields and outbuildings; rural, low, and medium-density residential units; industrial and retail commercial space; and county owned roadway right-of-way.

Alternative 4 would construct a 4-lane arterial that would begin at Chabot Court and would continue southeasterly starting at Banta Road to bypass the community of Banta to the south, continuing northeasterly to reconnect to the existing Grant Line Road alignment near its intersection with 11th Street. Between Bird Road and 11th Street, the new road would be constructed along the north side of the existing Grant Line Road, allowing the existing two-lane road to continue to serve local traffic as a frontage road in the Stoneridge neighborhood. Likewise, Grant Line Road between Banta Road and Bird Road would remain as a two-lane road to serve local traffic.

Grant Line Road would have two travel lanes in each direction, each 12 feet wide, with a 14-foot-wide median. The median either would be landscaped or would accommodate 12-foot-wide left-turn lanes near intersections with local roadways.

The existing at-grade railroad crossings at Banta Road and 6th Street would be closed and a new at-grade railroad crossing at the new four-lane Grant Line Road would be constructed.

The standard right-of-way width would be 110 feet for Grant Line Road and existing roads such as Banta, Berry, and Bird all with 60 feet existing right-of-way would need to be maintained. Additional right-of-way would be needed to accommodate outside turn lanes at intersections and for drainage basin locations. Other local roads would have a right-of way of either 50 feet or 60 feet.

9. **Surrounding Land Uses and Setting:** The preferred alternative is located south of existing Grant Line Road moving east from the Tracy city limits in San Joaquin County in the rural community of Banta. According to the City of Tracy General Plan, land uses at the western terminus of Alternative 3A are industrial. According to the San Joaquin General Plan, the land surrounding Alternative 3A is designated for limited industrial, general agriculture, agriculture-urban reserve, rural residential and rural service commercial. Uses on the surrounding land include active agricultural fields and outbuildings, rural, low, and medium-density residential units, industrial and retail commercial space, and county-owned roadway right-of-way.

10. Environmental Factors Potentially Affected: This project would affect the environmental factors checked below, involving at least one impact that is "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

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

11. Determination: On the basis of this initial evaluation:

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

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

☐ I find that the 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 project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report (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 project, nothing further is required.

Signature	Date
Printed Name For	

2.0 ENVIRONMENTAL EVALUATION

I. AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the Project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

Discussion

a) Have a substantial adverse effect on a scenic vista?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially affect "close in" scenic vistas for residential units along the proposed roadway. This threshold will be discussed in the Draft EIR for the project.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to affect scenic resources within a State scenic highway; however, this threshold will be discussed in the Draft EIR for the project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially degrade the existing visual character or quality of the site and its surroundings. This threshold will be discussed in the Draft EIR for the project.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant. Both Alternative 3A and Alternative 4 could result in a new source of light or glare, potentially adversely affecting day or nighttime views in the area. This threshold will be discussed in the Draft EIR for the project.

II. AGRICULTURE AND FORESTRY RESOURCES

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

Discussion

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 a non-agricultural use?

Potentially Significant. Both Alternative 3A and Alternative 4 would convert Important Farmland to non-agricultural use, which could represent a potentially significant impact. This threshold will be discussed in the Draft EIR for the project.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially affect land currently zoned for agricultural use. This threshold will be discussed in the Draft EIR for the project.

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))?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to affect forest land. However, this threshold will be discussed in the Draft EIR for the project.

d) Result in the loss of forestland or conversion of forestland to non-forestland uses?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to affect forest land. However, this threshold will be discussed in the Draft EIR for the project.

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 forestland to non-forestland use?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially affect farmland. This threshold will be discussed in the Draft EIR for the project.

III. AIR QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially conflict with or obstruct implementation of an applicable air quality plan. This threshold will be discussed in the Draft EIR for the project.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially violate air quality standards or contribute substantially to an existing or project air quality violation. This threshold will be discussed in the Draft EIR for the project.

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially increase criteria pollutants in the San Joaquin Valley. This threshold will be discussed in the Draft EIR for the project.

d) Expose sensitive receptors to substantial pollutant concentrations

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially expose sensitive receptors to substantial pollutant concentrations. This threshold will be discussed in the Draft EIR for the project.

e) Create objectionable odors affecting a substantial number of people?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to create objectionable odors. However, this threshold will be discussed in the Draft EIR for the project.

IV. BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	☒	☐	☐	☐

Discussion

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?

Potentially Significant. Both Alternative 3A and Alternative 4 have the potential to substantially adversely affect special-status species. This threshold will be discussed in the Draft EIR for the project.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to adversely affect riparian habitats or other sensitive natural communities. However, this threshold will be discussed in the Draft EIR for the project.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to have a substantial adverse effect on federally protected wetlands. However, this threshold will be discussed in the Draft EIR for the project.

d) Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to substantially affect the movement of wildlife or wildlife corridors. However, this threshold will be discussed in the Draft EIR for the project.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to conflict with local policies or ordinances protecting biological resources. However, this threshold will be discussed in the Draft EIR for the project.

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?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to conflict with the provisions of the San Joaquin County Multi-Species Habitat Conservation Plan, which is the only approved habitat conservation plan within the project area. However, this threshold will be discussed in the Draft EIR for the project.

V. CULTURAL RESOURCES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Environmental Setting

Cultural Resources

The Cultural Resources Study and Eligibility Evaluations Document prepared in May 2016 (2016 Cultural Resources Study) and the Supplemental Cultural Resources Study and Eligibility Evaluations Document prepared in October 2017 (2017 Supplemental Study) for the Grant Line Road Corridor Project contribute to the information in this section (LSA 2016; LSA 2017). The 2016 Cultural Resources Study and 2017 Supplemental Study consisted of archival and background research, field surveys on April 8, 2016, and September 27, 2017, consultation with potentially interested parties, and an archaeological sensitivity assessment.

The project area was delineated into an Archaeological Study Area and a Built Environment Study Area to analyze the project's potential direct and indirect impacts to archaeological and built environment resources. The Archaeological Study Area and the Supplemental Archaeological Study Area comprise all areas within the project footprint of Alternative 4 as well as the additional areas within the project footprint of Alternative 3A, including water retention basins, proposed ground-disturbing activities, proposed right-of-way acquisition, proposed road widening, and temporary construction easements and staging areas. The Built Environment Study Area comprises all parcels within or adjacent to the project footprint.

Records Search. The first Central California Information Center (CCIC) records search (CCIC File#:99042L) was conducted on August 1, 2014, and a subsequent records search (CCIC File#: 965L) was conducted on March 1, 2016.

The CCIC did not identify any previously recorded archaeological or historic-period resources within the APE for either alternative; however, two historic-period linear features (P-39-000002/CA-SJO-

328H; and P-39-004373/Grant Line Road/Lincoln Highway) were found as continuations of previously recorded linear resources within the APE. Both linear resources were previously recorded in other parts of San Joaquin County. These resources are described below.

- *Southern Pacific Railroad (P-39-000002*): Three different segments of the Southern Pacific Railroad Line have been evaluated as part of three different studies that date from 2001 to 2010. None of the segments fall within the project area or a 0.5-mile search radius. Each of the three different segments evaluated within San Joaquin County were determined ineligible for the National Register of Historic Places and California Register of Historical Resources (CRHR). A fourth study recorded archeological components along a segment of the tracks, but did not evaluate the segment.

- *Grant Line Road, Lincoln Highway (P-39-004373):* A segment of Grant Line Road was evaluated in 2003. The recorded segment does not fall within the project area or search radius. The road segment was determined eligible for the CRHR under Criterion 1 for its role as part of the Lincoln Highway, one of the first transcontinental highways.

The record searches did not identify any previously recorded archaeological cultural resources within the 0.5-mile search radius. Two previously recorded historic-period built environment cultural resources, (P-39-00072/Ender Ranch; P-39-005104), were identified within the 0.5-mile search radius. A description of these resources is presented below.

- *Ender Ranch (P-39-000072*): A historic-period ranch complex, known as Ender Ranch, is located at 6811 and 6821 Grant Line Road, Tracy. As of 1996, three residences, a barn, two sheds, and a series of additional ancillary buildings were scattered throughout the property. Ender Ranch was built at an unknown date, between 1879 and 1950. Ender Ranch was determined to not be eligible for the CRHR.

- *Valley/Banta School (P-39-005104*): Originally located on Banta Road and founded in 1878, the Valley School was reconstructed as a one-room wooden schoolhouse in 1901 and moved to 7th Street near F Street. Although no longer used as a school, this building was still used by the community after a new schoolhouse was constructed in 1925 along Grant Line Road and renamed Banta School. In 1970, this school was replaced by a large building located at the back of the school lot at 22345 South El Rancho Road. This schoolhouse was evaluated and found to be eligible for the CRHR under Criterion 1 for its role in the community development of Banta.

The CCIC records search identified three previous studies that have been conducted within portions of the APE (Baker and Smith 1989, Foster 1996, and ASI 1998; see below). The studies are described below.

Baker, Suzanne and Michael Smith

1989 *Archaeological Reconnaissance of a Portion of the 115 kV Tesla-Tracy Transmission Line, San Joaquin County, California*. Archaeological/Historical Consultants. Oakland, California.

This report describes the review of cultural resource records and literature, an examination of maps, and a field visit to identify any archeological sites within the study area. The

purpose of this study was to provide preliminary information about cultural resources within the area which would be affected by the project, and to provide recommendations for compliance with CEQA. No prehistoric or historic archaeological sites were discovered during the reconnaissance survey; however, this report acknowledges that subsurface cultural materials may be found during excavation, and recommends that a qualified archaeologist be present to monitor construction activities.

Foster, John W.

1996 *A Cultural Resource Survey of the Northeast Industrial Property, Tracy California*. Foothill Archaeological Services. Fair Oaks, California.

This report documented a review of cultural resource records and literature, an examination of cultural resource maps, and a field visit to identify any buildings, structures and archeological sites within the study area. The purpose of this study was to provide preliminary information about cultural resources within the area which could be possibly affected by industrial development, and to provide recommendations for compliance with CEQA. This report recommends a comprehensive study of those ranches and dairies found in the Tracy area after completing the evaluation of three ranch complexes found to be ineligible for the CRHR, including P-39-000072 /Ender Ranch, a resource found within the 0.5-mile search radius of the APE.

ASI Archaeology and Cultural Resource Management

1998 *Cultural Resources Survey, South County Surface Water Project, San Joaquin County, California, South San Joaquin Irrigation District*. ASI Archaeology and Cultural Resource Management. Stockton, California.

This report provided a review of cultural resources records and literature, an examination of maps, and a reconnaissance level field survey to note any possible historic-era resources. The purpose of this report was to provide preliminary information about the cultural resource sensitivity of various proposed pipeline routes, and to provide recommendations for compliance with CEQA. The report recommended an intensive level survey of the area with evaluations of affected properties.

Historical Society Consultation. On March 3, 2016, letters describing the Alternative 4 site with maps depicting the original Archaeological Study Area were sent to the San Joaquin County Historical Society & Museum, the Tracy Historical Museum, and the Tracy Area Genealogical Society requesting information or concerns regarding historical resources within the original Archaeological Study Area. Subsequently, on March 24, 2016, follow-up telephone calls were placed to each historical organization. No responses were received from any of the three organizations. Additionally, on April 4, 2016, a consultation letter was sent to the Lincoln Highway Association along with a follow-up phone call. Telephone calls were placed on July 25 and 26, 2016, to David Stuart of the San Joaquin County Historical Society & Museum. No response to the inquiry was received from the Lincoln Highway Association; however, the Lincoln Highway Association did contact the County about posting signs along the historical route.

On July 26, 2017, LSA sent letters describing Alternative 3A with maps depicting the supplemental Archaeological and Built Environment Study Areas to the San Joaquin County Historical Society &

Museum, the Tracy Historical Museum, and the Tracy Area Genealogical Society asking for information or concerns regarding cultural resources within the study area. On August 15, 2017, LSA sent follow-up emails to confirm receipt of the letters and to ask for any further information. No responses have been received to date.

Native American Consultation. Consultation with the Native American Heritage Commission (NAHC) initially took place on March 24, 2016 and the results indicated that a records search of the Sacred Lands File (SLF) did not identify resources within one-half mile of the previously proposed project site. Names of Native Americans who might have information or concerns about culturally sensitive sites within the APE were also requested and on May 11, 2016, letters were sent to four representatives of local Native American tribes. No responses were received.

On July 25, 2017, LSA sent a summary of the project with maps depicting the Supplemental Archaeological and Architectural Study Areas to the NAHC in Sacramento asking it to review the SLF in an effort to identify Native American cultural resources that the project might affect. LSA also requested the names of Native American representatives who might have information or concerns about cultural resources within the supplemental Study Area. The NAHC replied in a letter dated July 31, 2017, stating that the NAHC SLF record search resulted in negative findings. A list of Native American contacts was also provided. On August 8, 2017, LSA sent letters describing the project with attached maps to the Native American contacts listed by the NAHC, including the Buena Vista Rancheria, the Ione Band of Miwok Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, and the Wilton Rancheria. No responses were received. LSA conducted follow-up telephone calls on September 28, 2017. Section XVII, *Tribal Cultural Resources*, provides a summary of those calls.

Field Survey. A field survey initially conducted on April 8, 2016, identified one archaeological resource, an isolated projectile point located within the Alternative 4 alignment.

The projectile point was found on a slightly raised agricultural row within an orchard and may have been removed from its original context. No other observable features, artifacts, midden deposits, or archaeological resources were identified nearby; however, it may have been exposed during recent heavy rains and it may be associated with a subsurface archaeological deposit. The isolated artifact does not appear to be individually eligible for inclusion in the CRHR and is therefore not a historical resource or a unique archaeological resource for the purposes of CEQA.

Although the isolated projectile point identified during the survey does not qualify individually as a historical resource or a unique archaeological resource for purposes of CEQA, there is always the possibility that archaeological features or other deposits that were not identified during this study would be encountered during project construction in the vicinity of this resource. This hypothetical scenario could involve features or deposits that qualify as historical resources or unique archaeological resources under CEQA, in which case their disturbance or destruction could result in a significant impact. The projectile point is also located on a landform that has very high sensitivity for subsurface archaeological deposits. For these reasons, a preconstruction meeting and archaeological construction monitoring at the location of the isolated artifact is recommended.

The isolate described above is located outside of the APE for Alternative 3A. No other archaeological resources were identified during the 2016 field survey.

LSA conducted a subsequent field survey on September 27, 2017, which included those areas for Alternative 3A that were not previously covered by the 2016 field survey. No cultural resources were observed during the 2017 field survey.

Archaeological Sensitivity

Alternative 3A. The Built Environment Study Area for Alternative 3A includes 11 built environment resources that are 50 years or older. Nine of these resources are located in the original Architectural Study Area and were evaluated within the 2016 Cultural Resources Study; these resources were found not to be historical resources for the purposes of CEQA (described in detail below under *Alternative 4*).

LSA determined that one of the resources, the Tesla-Kasson transmission line, is outside of the vertical area of direct impact for the project and no significant indirect or direct impacts are anticipated from implementation of the project. Therefore, no further consideration or study of this resource is warranted at this time.

One resource was identified within the Built Environment Study Area for Alternative 3A that was not surveyed in the 2016 Cultural Resources Study. Archival research and evaluation were conducted for the 2017 Supplemental Study to determine whether or not this resource meets the definition of a historical resource as defined by CEQA. LSA concluded in the 2017 Supplemental Study that this resource does not appear eligible for inclusion in the California Register and is not a historical resource as defined by CEQA. No further analysis or consideration of this resource is warranted for the purposes of the project. Table A provides a summary of the 11 resources and their eligibility status.

Table A: Cultural Resources Identified in Alternative 3A Study Area

Identifier	APN	Description	CRHR Eligibility Status
23262 South Bird Road	23909005	1942 residence	Not eligible
Tesla-Kasson transmission line	N/A	Segment of pre-1952 transmission line	N/A[1]
P-39-004373 Lincoln Highway	N/A	Segment of circa 1914 historic road, transcontinental highway	Not eligible
Banta Road	N/A	Segment of circa 1914 historic road	Not eligible
P-39-000002/CA-SJO-328H	25001003, 25001023	Segment of circa 1869 former Southern Pacific Railroad	Not eligible
6599 West Grant Line Road	21317027	1920s–1950s residences and ancillary buildings	Not eligible
6200 West Grant Line Road	25003004	1910 residence with multiple ancillary buildings	Not eligible
6016 West Grant Line Road	25004001	1948 residence with garage	Not eligible
6010 West Grant Line Road	25004002	1948 residence with garage	Not eligible
6001 West Grant Line Road	21317023	1925 Craftsman style house and shed	Not eligible
5982 West Grant Line Road	25004003	1939 residence with ancillary buildings	Not eligible

[1] This resource was not evaluated because it is outside the vertical extent of project disturbance and no impacts are anticipated.
APN = Assessor's Parcel Number CRHR = California Register of Historical Resources N/A = not applicable

Alternative 4. The Alternative 4 Study Area includes 23 built environment resources 50 years old or older. During the field reviews, conducted on April 8, 2016, and May 17, 2016, it was determined that six of these resources were either heavily modified to a point where their integrity was compromised, too far from the project activities to be potentially impacted, or were screened visually from the project's proposed design elements. Consequently, these six resources, presented in Table B, were eliminated from further study.

Table B: Built Environment Resources Over 50 Years Old, Not Evaluated in this Study

Identifier	APN	Description	Reason Not Evaluated
23544 South Banta Road	25012004	1963 residence with ancillary buildings, large agricultural field	The property is 2,111 feet from proposed road change. No vibration or noise impacts expected. Proposed road change minimal.
22550 South Sixth St	25005011	Circa 1960 duplex	Proposed road changes will be screened from view by a high fence and mature trees. No vibration or noise impacts expected.
5491 West F Street	25008022	Gas station (pre-1952)	Approximately 150 feet from proposed road change. No vibration or noise impacts expected. Proposed road change minimal.
5451 West F Street	25006001	1940 residence	Approximately 150 feet from proposed road change. No vibration or noise impacts expected. Screened by mature trees and fence.
22730 South Seventh St	25007003	1966 residence	All buildings located on the property have been significantly altered and therefore qualify for exemption.
22865 South Bird Road	25009005	1982 residence	The property is 1,039 feet from proposed road change. No vibration or noise impacts expected. Proposed road change minimal.

APN = Assessor's Parcel Number

Seventeen remaining built environment cultural resources (13 buildings and 4 linear features) within the Study Area required evaluation for listing in the CRHR in order to determine if they meet the definition of a historical resource as defined by CEQA. None of the 17 built environment resources are eligible for listing in the CRHR, and none are considered historical resources or unique archaeological resources for the purposes of CEQA. Table C provides a summary of the 17 resources and their eligibility status.

Table C: Built Environment Cultural Resources Identified in Alternative 4 Study Area

Identifier	APN	Description	CRHR Eligibility Status
P-39-004373 Lincoln Highway	not available	Segment of circa 1914 historic road, transcontinental highway	Not eligible
Banta Road	not available	Segment of circa 1914 historic road	Not eligible
P-39-000002/CA-SJO-328H	25001003, 25001023	Segment of circa 1869 former Southern Pacific Railroad	Not eligible
6599 West Grant Line Road	21317027	1920s–1950s residences and ancillary buildings	Not eligible
3741 West Grant Line Road	21327013	1920 Craftsman style house	Not eligible
3961 West Berry Avenue	21327023	1920 ancillary building and 1930 workshop	Not eligible
3807 West Eleventh Street	23907001	1948 residence and ancillary building	Not eligible
3776 West Grant Line Road	23907002	1951 house with circa 1970s addition	Not eligible
6200 West Grant Line Road	25003004	1910 residence with multiple ancillary buildings	Not eligible
6016 West Grant Line Road	25004001	1948 residence with garage	Not eligible
6010 West Grant Line Road	25004002	1948 residence with garage	Not eligible
6001 West Grant Line Road	21317023	1925 Craftsman style house and shed	Not eligible
5982 West Grant Line Road	25004003	1939 residence with ancillary buildings	Not eligible
5630 West F Street	25008001	1946 residence with garage	Not eligible
4928 West Grant Line Road	25009002	1957 residence with ancillary buildings	Not eligible
4886 West Grant Line Road	25009003	1948 residence with garage	Not eligible
Pescadero Reclamation District canal	21327013, 21327015, 21327023	Pre-1952 (West Side Irrigation District) canal	Not eligible

APN = Assessor's Parcel Number
CRHR = California Register of Historical Resources

Paleontological Resources

Project plans, geologic maps of the project area, and relevant geological and paleontological literature were reviewed to determine which geologic units are present within the project area and whether fossils have been recovered within the project sites or from those or similar geologic units elsewhere in the region. A search for known fossil localities was also conducted through the online collections database of the University of California Museum of Paleontology at the University of California, Berkeley, in order to determine the status and extent of previously recorded paleontological resources within and surrounding the project site.

Paleontological Sensitivity

Geologic mapping by Wagner et al. (1991) and Dibblee (2006) indicates the project site contains Holocene to late Pleistocene (less than 126,000 years ago) Alluvial Fan Deposits, which consist of alluvial gravel, sand, and clay. Although Holocene deposits can contain the remains of plants and animals, generally not enough time has passed for the remains to become fossilized. In addition, the remains are that of modern species and are usually not considered to be scientifically important. However, older, late Pleistocene sediments, which may be encountered at depths of approximately 20 feet or more, have produced a variety of scientifically important fossils elsewhere in the County and the region. These fossils include large and small mammals, reptiles, fish, invertebrates, and plants (Jefferson 1991a, 1991b; Miller 1971). According to the locality search through the University of California Museum of Paleontology online collections database, there are 15 known localities from Pleistocene deposits within the County. These localities have produced 29 fossil specimens, including large and small mammals, such as mastodon (*Mammut*), mammoth (*Mammuthus columbi*), horse (*Equus*), giant ground sloth (*Megalonyx jeffersoni*), camel (*Camelops hesternus*), and pocket gopher (*Thomomys*). Because there is a potential to find these types of fossils in the older sediments within this geologic unit below a depth of 20 feet, these deposits are considered to have no paleontological sensitivity from the surface to a depth of 20 feet and a high sensitivity below that mark.

Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?

Less Than Significant Impact with Mitigation Incorporated. As described above, research was conducted to determine if historical or Native American sensitive sites were located within the Archaeological Study Area or surrounding area for both alternatives. No historical resources were identified within or adjacent to the Alternative 3A or 4 sites. However, should undiscovered historical resources be found during project construction, **Mitigation Measures CULT-1** and **CULT-2** shall be implemented to reduce potential impacts to historical resources.

> **Mitigation Measure CULT-1:** The project proponent shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant precontact and/or historic-period archaeological cultural resources within the project area. The briefing shall discuss and describe the type and nature of archaeological artifacts or features that could be exposed during project ground disturbance, as well as the procedures for temporarily halting activity in the vicinity and protecting the find until notification can occur and it can be assessed.
>
> **Mitigation Measure CULT-2:** Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology contacted to assess the situation, consult with agencies as appropriate (as well as

tribal descendants, if the find is precontact in nature), and make recommendations for the treatment of the discovery. If found to be significant (i.e., eligible for listing in the CRHR), the County shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis of archaeological deposits, further tribal consultation (as warranted), and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigations, a report documenting the methods, findings, and recommendations shall be prepared and submitted to the County for review, and the final report shall be submitted to the CCIC at California State University, Stanislaus. Significant archaeological materials shall be submitted to an appropriate curation facility.

The County shall inform its contractor(s) of the sensitivity of the Study Area for archaeological deposits and shall verify that the following directive has been included in the appropriate contract documents/specifications:

"The subsurface of the construction site may be sensitive for archaeological deposits. If archaeological deposits are encountered during project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any archaeological materials. Prehistoric archaeological deposits can include shellfish remains; bones; flakes of, and tools made from, obsidian, chert, and basalt; and mortars and pestles. Historic-period archaeological deposits can include concentrations of historic glass, cans, ceramics, or other 'trash', as well as structural features including buried wells, foundations, or privies."

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Alternative 3A

Less Than Significant Impact with Mitigation Incorporated. As described above, research and field surveys were conducted to determine if significant archaeological resources were located within the Alternative 3A Archaeological Study Area or adjacent to the project site. No archaeological cultural resources were identified within the Alternative 3A Study Area. However, the potential for encountering buried archaeological cultural resources cannot be discounted. Therefore, **Mitigation Measures CULT-1** and **CULT-2** shall be implemented to reduce potential impacts to archaeological resources under Alternative 3A.

Alternative 4

Less Than Significant Impact with Mitigation Incorporated. The eastern portion of the Alternative 4 Archaeological Study Area is located on a landform that contains high sensitivity for the presence of subsurface archaeological deposits. Because the isolated artifact identified during the field survey was located in this high sensitivity area and may likely be associated with a buried archaeological

site, implementation of **Mitigation Measure CULT-3** and **Mitigation Measure CULT-4**, presented below, would reduce impacts to undiscovered resources to a less than significant level if found during project construction activities of Alternative 4. Compliance would occur by way of a preconstruction meeting and archaeological monitoring of ground-disturbing activities within or adjacent to the location of the isolated artifact identified during the field survey. Should archaeological deposits be encountered, impacts to such resources shall be avoided, or further investigation shall be conducted to offset the loss of scientifically consequential information that would occur if avoidance is not possible.

> **Mitigation Measure CULT-3:** Prior to any ground disturbance, a qualified archaeologist shall conduct a preconstruction meeting to orient the construction crew to the potential for encountering prehistoric archaeological deposits during construction. This instructional meeting shall also include a discussion of the types of artifacts that could be encountered and the steps to take upon discovery to avoid inadvertent impacts to such finds.
>
> **Mitigation Measure CULT-4:** Archaeological monitoring shall be conducted by a qualified archaeologist during any ground-disturbing activities within or adjacent to the location of the isolated artifact identified during the field survey to identify, and avoid impacts to, unanticipated subsurface deposits that may be associated with this resource. If archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected and the archaeologist shall assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Impacts to archaeological deposits shall be avoided by project activities, but if such impacts cannot be avoided, the deposits shall be evaluated for their CRHR eligibility. If the deposit is not CRHR eligible, then no further protection of the finds are necessary. If the deposits are CRHR eligible, they shall be protected from project-related impacts, or such impacts should be mitigated. Mitigation may consist of, but is not necessarily limited to, systematic recovery and analysis of archaeological deposits; recording the resource; preparation of a report of findings; and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach may also be appropriate.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated. No paleontological resources or unique geologic features are known to exist within near the Alternative 3A or 4 sites. As noted, the area is underlain by Holocene to late Pleistocene Alluvial Fan Deposits, which are considered to have no paleontological sensitivity from the surface to a depth of 20 feet and high sensitivity below that mark. However, both alternatives are located in an area previously disturbed by agriculture and other activities, and will have ground disturbance that only extends to a depth of 15 feet. Therefore, the project is unlikely to impact scientifically important paleontological resources. However, should undiscovered paleontological resources be found during project construction, **Mitigation Measure**

CULT-5 shall be implemented to reduce potential impacts to paleontological resources under both Alternative 3A and 4.

> **Mitigation Measure CULT-5 :** If paleontological resources are encountered during project excavation and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be retained to evaluate the find and make recommendations for additional paleontological mitigation, which may include paleontological monitoring; collection of observed resources; preservation, stabilization, and identification of collected resources; curation of resources into a museum repository; and preparation of a final report documenting the monitoring methods and results to be submitted to the museum repository and the County.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact with Mitigation Incorporated. No human remains are known to exist within the Archaeological Study Area or near either site. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the San Joaquin County Coroner has determined whether or not the remains are subject to the coroner's authority. There is no indication that human remains are present within either alternative site. Implementation of **Mitigation Measure CULT-6** would ensure that potential impacts to human remains, should they be discovered during project construction activities, are identified, collected and reinterred under both Alternative 3A and 4.

> **Mitigation Measure CULT-6 Treatment of Previously Unidentified Human Remains**. If human remains are encountered, these remains shall be treated in accordance with California Health and Safety Code Section 7050.5 and the appropriate procedures described under Mitigation Measure 2 for archaeological deposits. The County shall inform its contractor(s) of appropriate procedures for treatment of human remains by including the following directive in contract documents/specifications
>
> "If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods."
>
> Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the

treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the Most Likely Descendant. The report shall be submitted to the County for review, and the final report should be submitted to the CCIC.

Implementation of **Mitigation Measure CULT-6** would ensure that human remains encountered during project activities under either alternative are treated in a manner consistent with State law, and would reduce impacts to human remains to a less than significant level as required by CEQA. Compliance would occur through the respectful coordination with descendant communities to ensure that the traditional and cultural values of said community are incorporated in the decision-making process concerning the disposition of human remains that cannot be avoided. The implementation of these mitigation measures would reduce this potential impact to a less than significant level under both Alternatives 3A and 4.

VI. GEOLOGY AND SOILS

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

Environmental Setting

Information in this section is from the San Joaquin County 2035 General Plan and the 2010 General Plan Background Report (San Joaquin County 2009).

San Joaquin County is located in the San Joaquin Valley portion of California's Central Valley. The valley is an asymmetrical trough with a shallow dipping east limb and steeply dipping west limb. The trough has been filled with sediment and attains a thickness exceeding 30,000 feet in depth in some areas. Geologic formations within the Central Valley consist of sediment deposited in marine,

alluvial, and terrestrial environments. The general geologic features pertaining to the alternative sites are similar to that of the larger San Joaquin Valley. The subsoils at the alternative sites are situated on Alluvium (Q) as described below:

- Alluvium (Q) – Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated.

According to Natural Resources Conservation Service, there is one soil type within the Alternative 3A site, as described below (NRCS 2017):

- **Capay clay, 0- to 2-percent slopes (Soil Number 118)**: This soil is very deep, moderately drained, nearly level, and is located in interfan basins. Permeability is slow in this soil and the available water capacity is high. The shrink-swell potential also is high (subsidence potential). Most areas with this soil are used for irrigated crops or orchards. A few areas are used for residential development.

Soil types located within the Alternative 4 site include Capay clay, 0- to 2-percent slopes as described above, as well as the two additional soil types described below (NRCS 2017):

- **Stomar clay loam, 0- to 2-percent slopes (Soil Number 252):** This soil is very deep, well drained, and nearly level, found on alluvial fans. Permeability is slow in this soil and water capacity is very high. The shrink-swell potential is also high (subsidence potential). Most areas of this soil are used for irrigated crops or orchards. A few areas are used for dry land grain crops or for residential development.

- **Willows clay, partially drained, 0- to 2-percent slopes (Soil Number 274)** – This very deep, poorly drained, nearly level, saline-sodic soil is located in basins. Permeability is very slow in this soil and available water capacity is moderate. The shrink-swell potential is also high (subsidence potential). Most areas of this soil are used for irrigated crops. A few areas are used for residential development. This soil may provide wetland functions and values.

Faults are surface and subsurface fissures that are located in geographically weak areas of the Earth's underlying bedrock, and potential fault zones prone to stress. Faults that are considered active include areas where shifting or deformation has been observed in the past 10,000 years (Holocene period). Potentially active, or Quaternary faults, refers to movement or deformation during the Quaternary period (typically less than 1.6 million years). The alternative sites are each bisected by the Quaternary-Pleistocene period (10,000 to 1.6 million years) Vernalis Fault. The Vernalis Fault is a northwest-striking, moderately to steeply west-dipping fault that extends roughly 41 miles between the cities of Tracy and Patterson. The Vernalis Fault has the potential to generate an earthquake with a maximum magnitude between 6.25 and 6.75 (DWR 2009). The Great Valley Thrust Fault Segment 7 is 11 miles southwest of the alternative sites. The Great Valley Thrust Fault Segment 7 is capable of producing a maximum 6.7 magnitude earthquake.

The Alquist-Priolo Fault Zoning (AP) Act provides policies and criteria to assist cities, counties and State agencies in restricting development on active faults. The AP Act requires the State geologist to delineate regulatory zones that encompass all potentially and recently active traces of named faults

and other such faults, or fault segments that are deemed sufficiently active and well-defined to constitute a potential hazard to structures from surface faulting or fault creep. San Joaquin County has no Alquist-Priolo faults or zones; therefore, neither Alternative 3A nor Alternative 4 is located within or near an Alquist-Priolo Earthquake Fault Zone.

The California Geologic Survey Probabilistic Seismic Hazard Assessment calculates earthquake shaking hazards through historic seismic activity and fault slip rates. Shaking from faults is expressed as the Peak Ground Acceleration (PGA) measured as a percentage (or fraction) of acceleration due to gravity (%g) from ground motion that has a 10 percent probability of being exceeded in 50 years. The alternative sites are located in an area with a PGA of 30 percent (0.3g).

Seismic ground shaking can result in soil compaction and settlement. If the sediments that compact during an earthquake become saturated, they are subject to liquefaction. If liquefaction occurs, soil loses its supporting structure, resulting in a condition where buildings and other constructed facilities could settle into the ground. According to the San Joaquin County 2035 General Plan, the soils in the Tracy area are not considered to be as susceptible to liquefaction as other parts of San Joaquin County even though the groundwater is high, because the near-surface soils are predominantly clays or sands with high silt and clay content. According to San Joaquin County General Plan, neither alternative site is located in an area of expansive soil.

Slope instability (landslides and rockslides) can result in the movement of material down a slope or gradient. Areas at risk from landslides within San Joaquin County are expected to be concentrated along steep topographical slopes. The alternative sites are located on flat topographical land. No hillsides, slopes, steep topographical areas, cliffs or mountains are located within the site boundaries, nor are any located near the alternative sites. The potential for landslides occurring on or adjacent to the alternative sites is low.

Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The alternative sites are not located within or near an Alquist-Priolo Earthquake Fault Zone. No Alquist-Priolo faults or zones are located in San Joaquin County. Neither Alternative 3A nor Alternative 4 would include development on or near an Alquist-Priolo designated fault that would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death. Impacts would be less than significant. No other known active or potentially active faults are in the project vicinity. One buried fault runs from Banta south to the County border. However, there is no known activity along this fault; it is an inferred fault and not well documented. According to the San Joaquin County General Plan, the potential for fault rupture at the alternative sites appears to be low.

ii) Strong seismic ground shaking?

Less Than Significant Impact. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, the depth of the epicenter, the distance from the epicenter, and local geological conditions.

As discussed above, the alternative sites are not located on, adjacent to, or near any active faults. The project area is projected to sustain moderate to low damage from ground shaking and damage from anticipated future earthquakes, according to the California Seismic Safety Commission. Although the sites could be exposed to moderate ground shaking, both the Alternative 3A and Alternative 4 would be designed and constructed consistent with San Joaquin County and California Department of Transportation (Caltrans) seismic design standards. Implementation of either alternative would not expose people or structures to potential adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Soil liquefaction is a phenomenon primarily associated with the saturated soil layers located close to the ground surface. These soils lose strength during ground shaking in seismic events. Due to the loss of strength, the soil acquires "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (minute silt and clay fraction) may also liquefy.

According to the San Joaquin County 2010 General Plan, the soils in the Tracy area are not considered to be as susceptible to liquefaction as other parts of San Joaquin County even though the groundwater is high, because the near-surface soils are predominantly clays or sands with high silt and clay content. Soils on the Alternative 3A site are limited to Capay clay and soils on the Alternative 4 site include Capay Clay, Stomar clay loam, and Willows clay. Therefore, implementation of either alternative would not expose people or structures to potential adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction.

iv) Landslides?

No Impact. Slope instability (landslides and rockslides) can result in the movement of material down a slope or gradient. Areas at risk from landslides within San Joaquin County are expected to be concentrated along steep topographical slopes. Both Alternative sites are located on flat topographical land. No hillsides, slopes, steep topographical areas, cliffs or mountains are located within either alternative boundary, nor are any located near the alternative sites. The potential for landslides occurring on or adjacent to the project sites is low. No impacts associated with landslides are anticipated.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact with Mitigation Incorporated. During times of high winds (more than 15 miles per hour) near the project area, clouds of peat dust can arise. This dust is a health and safety hazard and contributes to the loss of valuable agricultural soils. However, according to the San Joaquin County General Plan, the project area itself is at low risk of wind erosion.

Implementation of **Mitigation Measures HYDRO-1** and **HYDRO-2** involves best management practices (BMP) to reduce the potential impacts associated with soil erosion during construction of either alternative. Therefore, impacts would be less than significant with mitigation incorporated.

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?

Less Than Significant Impact. As discussed above, the alternative sites are located in an area that is topographically flat. No hillsides, cliffs, canyons, or unstable land mass areas are within or near the alternative sites. Landslides are not anticipated under implementation of either alternative.

Neither alternative site is considered susceptible to liquefaction, per the San Joaquin County General Plan. Soils in the Tracy area are not considered to be as susceptible to liquefaction because the near-surface soils are predominantly clays or sands with high silt and clay content. Liquefaction is not anticipated under implementation of either alternative.

Subsidence is the gradual, local settling or sinking of the earth's surface with little or no horizontal movement. Most of the non-seismically induced subsidence in the area occurs in the Sacramento-San Joaquin Delta (Delta) area of San Joaquin County, where subsidence has generally been attributed to the overdrafting of groundwater basins and from peat oxidation of the Delta islands. Seismically induced subsidence is most likely to occur in areas where water tables are deep, the soils are of loose to medium density, and the soil profile includes strata of loose, clean, uniformly graded sand. The soil in the project area is clay. Research from San Joaquin County geographic information system (GIS) data indicate that neither alternative site is in an area where subsidence is known to occur. Thus, subsidence is not anticipated under implementation of either alternative.

Ground collapse (sinkholes) occurs when subsidence of soil, sediment, or rock underlying strata are dissolved by groundwater. A sinkhole may form when upper soil levels collapse into subterranean voids created by the dissolving of limestone or dolostone beneath the soil layer. Once dissolving occurs, the upper level soils become weak and cannot support their own weight or the weight of structures. Neither alternative site is in an area underlain by limestone or dolostone. Alternative 3A and 4 are on Quaternary alluvium and marine deposits (Pliocene to Holocene), which are typically not susceptible to ground collapse (sinkholes). Therefore, neither Alternative 3A nor Alternative 4 is expected to be susceptible to ground collapse.

Alternatives 3A and 4 would not be located on a geologic unit or soil that is unstable, or that would become unstable and potentially result in on- and off-site landslides, lateral spreading, subsidence, liquefaction or collapse. Therefore, impacts would be less than significant

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant with Mitigation Incorporated. Expansion and contraction of volume occur when expansive soils experience alternating cycles of wetting (swelling) and drying (shrinking) and are generally associated with clayey soils. During these cycles, the volume of the soil changes substantially. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during the construction process. In each of the soil types present at the project site, the shrink-swell potential is high. The California Building Code (1808A.6.1 Foundations) requires that structures placed on or within the active zone of expansive soils shall be designed to resist differential volume changes and to prevent structural damage to the supported structure. Implementation of the following mitigation measures would reduce the impact of expansive soils to less than significant under either alternative.

> **Mitigation Measure GEO-1**: Any foundations and structure support for the project shall be designed to prevent uplift of the supported structures.
>
> **Mitigation Measure GEO-2**: Any foundation and structure support for the project shall be designed to resist forces exerted on the foundation due to soil volume changes, or shall be isolated from the expansive soil.

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

No Impact. Neither alternative involves the generation of any wastewater or includes the use of septic tanks or alternative wastewater disposal systems in soils. Both Alternative 3A and Alternative 4 consist of building new roads and intersections and improving existing roads. No impacts would occur.

VII. GREENHOUSE GAS EMISSIONS

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

Affected Environment

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases (GHG) that contribute to global climate change have a broader global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs that contribute to global climate change are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. The potential implications of global climate change include rising sea levels and adverse impacts to water supply, water quality, agriculture, forestry, and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, motor vehicle usage generates much of the GHG production. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county, and subregional level, and other measures to reduce automobile use. Energy conservation measures can contribute to reduction in GHG emissions as well.

The primary existing sources of human-caused GHGs in the project area are emissions from vehicles traveling along Grant Line Road, Kasson Road, and 11th Street, and vehicles on Interstates 5 and 205 east and west of the project sites, respectively. Commercial and residential uses in Tracy and Banta, as well as agricultural activities in the area, are also sources of human-caused GHGs.

The existing Grant Line Road is two lanes wide and has an existing average daily traffic (ADT) volume of approximately 7,300 vehicles just east of Banta Road, and 6,900 vehicles just west of Bird Road, the main segments that would be affected by development of either alternative. Projected no-build traffic conditions in 2035 estimate approximately 20,900 vehicles and 18,900 vehicles on these same segments, respectively. Neither alternative would increase traffic on the main corridor; rather, the majority of current traffic along Grant Line Road between Banta Road and Bird Road would be diverted to the new Grant Line Road developed under Alternative 3A or 4. For Alternative 3A, projected traffic under build conditions in 2035 includes estimated ADTs of 1,900 vehicles on the current Grant Line Road just east of Banta Road and 19,000 vehicles on the new roadway. For

Alternative 4, projected traffic under build conditions in 2035 includes estimated ADTs of 2,900 vehicles on the current Grant Line Road just east of Banta Road and 17,800 vehicles on the new roadway. Under Alternative 3A, the existing Grant Line Road would include cul-de-sacs at either end and would be used for local traffic only. Under Alternative 4, the existing Grant Line Road would remain as a frontage road for use by local traffic only. For analysis purposes, it is assumed traffic would effectively merge and ADT on Grant Line Road approaching Bird Road would average a combined total of 20,900 vehicles.

Discussion

Neither alternative is expected to increase traffic levels above projected 2035 no-build conditions. The following discussion analyzes impacts related to GHG emissions from either alternative.

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

Less-than-Significant Impact. As described below, short-term and long-term GHG emissions associated with project implementation would not significantly contribute to greenhouse gas emissions.

Short-Term GHG Emissions. Excavation, grading, paving, and construction of the either alternative would produce combustion emissions from various sources. During site preparation, excavation and grading, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically operates on fossil-based fuels. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4 and N_2O. Furthermore, the fueling of heavy equipment emits CH_4.

Exhaust emissions from on-site excavation, grading, paving, and construction activities would vary daily as construction activity levels change. No thresholds have been adopted that are applicable to the project. It is assumed that Alternative 3A and Alternative 4 would have the same construction specifications. According to the RoadMod analysis performed by LSA, GHG emissions during the 24-month project construction period would total 1,840 metric tons of CO_2. Over a 30-year project life, emissions would average 61.3 metric tons CO_2 per year. These emissions would be minimal when considered over the life of the project, and would cease once construction is completed; therefore, project construction would not significantly contribute to GHG emissions under either alternative.

Long-Term GHG Emissions. Alternative 3A would include the development of a new roadway that would divert the majority of traffic from the current Grant Line Road alignment between Banta Road and 11th Street. Alternative 4 would divert the majority of traffic from the existing Grant Line Road between Banta Road and Bird Road. Once operational, neither roadway would generate any new vehicle trips that would contribute to an increase in GHG emissions; therefore, neither alternative would contribute to a long-term increase in GHG emissions.

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The following describes the potential for either alternative to conflict with applicable plans, policies, or regulations related to GHG emissions.

Federal Regulations: The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (USEPA) has the authority to regulate CO_2 emissions under the federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the ones described below.

On September 22, 2009, the USEPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement will provide the USEPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, will report at the corporate level. An estimated 85 percent of the total United States GHG emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the USEPA Administrator signed an endangerment finding action under the Clean Air Act, finding that six GHGs (CO_2, CH_4, N_2O, hydrofluorocarbons [HFC], perfluorocarbons [PFC], sulfur hexafluoride [$SF_{6]}$) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change. This USEPA action does not impose any requirements on industry or other entities. However, the endangerment findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below.

On April 1, 2010, the USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model years 2012 through 2016 light-duty vehicles that would reduce GHG emissions and would improve fuel economy. The USEPA has established the first-ever national GHG emissions standards under the Clean Air Act, and the NHTSA has adopted the Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. The USEPA GHG standards require light-duty vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 miles per gallon. The USEPA and the NHTSA also established standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses.

In May 2010, the USEPA sought to tailor existing regulations to accommodate GHG emissions for all stationary sources. However, several states challenged the tailoring rule, and the Supreme Court ruled on June 23, 2014, that the USEPA cannot tailor an existing provision in the Clean Air Act. The Court ruled that the USEPA may establish a de minimis threshold level for GHG (similar to the General Conformity Rule). On August 19, 2015, the USEPA published a rule removing the tailoring provision vacated by the Court. The USEPA announced plans to propose a de minimis threshold for GHG in June 2016.

State Regulations

The California Air Resources Board (ARB) is the lead agency for implementation of climate change regulations in the State. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. The following describes key air-pollution control efforts by the State.

- **Executive Order S-3-05 (2005).**Then-Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. The executive order declared that increased temperatures could reduce snowpack in the Sierra Nevada, could further exacerbate California's air quality problems, and could potentially cause a rise in sea levels. To combat those concerns, the executive order created California's GHG emissions reduction targets, which established the following goals:
    - GHG emissions should be reduced to 2000 levels by 2010;
    - GHG emissions should be reduced to 1990 levels by 2020; and
    - GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency is required to coordinate efforts of various State agencies to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and the State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The California Environmental Protection Agency Secretary leads this Climate Action Team (CAT), made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the Statewide GHG targets that were established in the executive order and further defined under Assembly Bill 32, the "Global Warming Solutions Act of 2006" (AB 32). The first CAT Report to the Governor and the Legislature was released in March 2006, and listed 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The CAT Report to the Governor and Legislature will be updated and issued every two years thereafter; the most recent was released in December 2010.

*Assembly Bill 32 (2006), California Global Warming Solutions Act*California's major initiative for reducing GHG emissions is AB 32, passed by the State Legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The ARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) carbon dioxide equivalent (CO_2e). The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global

climate change. The ARB approved the Scoping Plan on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures (ARB 2008). The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The Scoping Plan, even after ARB approval, remains a recommendation. The measures in the Scoping Plan will not be binding until after they are adopted through the normal rulemaking process. The ARB rulemaking process includes preparation and release of each of the draft measures, public input through workshops, and a public comment period, followed by an ARB hearing and rule adoption.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

In June 2007, the ARB approved a list of 37 early action measures, including 3 discrete early action measures (Low Carbon Fuel Standard, Restrictions on Global Warming Potential Refrigerants, and Landfill CH_4 Capture) (ARB 2007a). Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, the reduction of PFCs from the semiconductor industry, the reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT (ARB 2007b).

The ARB's Climate Change Scoping Plan was adopted in December 2008, which contains the main strategies California will implement to achieve reduction of approximately 169 MMT of CO_2e, or approximately 30 percent from the State's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e)
- The Low-Carbon Fuel Standard (15 MMT CO_2e)
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e)
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e)

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the ARB unanimously approved both ARB's new supplemental assessment and re-approved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The ARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program.

The ARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014, which is currently being implemented. The First Update identifies opportunities to leverage existing and new funds to further drive greenhouse gas emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 greenhouse gas emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" greenhouse gas reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15.

The ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, the ARB is also developing an additional protocol for community emissions). The ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5 MMT CO_2e will be achieved associated with implementation of State Senate Bill 375.

The regulatory plans and policies discussed above are intended to reduce federal, State, and local GHG emissions by targeting the largest emitters of GHGs: the transportation and energy sectors. Both alternatives include the construction of a new roadway to accommodate projected future traffic volumes, to reduce congestion, and to improve safety in the community of Banta. Neither alternative would generate any new vehicle trips during operation or conflict with these transportation reduction measures. In addition, neither alternative proposes any development that would increase energy demand. Alternatives 3A and 4 would not conflict with the State goal of reducing GHG emissions and would not conflict with the AB 32 Scoping Plan or any other plan or policy. Both alternatives would be subject to all applicable permit and planning requirements in

place or adopted by the County. Therefore, neither alternative would conflict with any applicable plan, policy, nor regulation of an agency adopted for the purpose of reducing GHG emissions.

VIII. HAZARDS AND HAZARDOUS MATERIALS

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

Environmental Setting

Hazardous materials include all flammable, reactive, corrosive, or toxic substances that, because of these properties, pose potential harm to the public or environment. Hazardous materials such as agricultural chemicals, natural gas and petroleum, explosives, radioactive materials, and various commercial chemical substances are used, stored, or produced in San Joaquin County.

County of San Joaquin and State law require the reporting of any unauthorized discharge of hazardous waste that may impact environmental and human health. The San Joaquin County Environmental Health Department (SJCEHD) performs inspections of hazardous waste generators on a frequent basis, depending on staff availability and complaint response. Inspection frequency is based on the storage quantities and generated volume of materials on each site. As required by the SJCEHD, generators that produce greater than 5 tons of hazardous waste per year are inspected on an annual basis, while sites that generate less than 5 tons of hazardous waste per year are inspected every three years. The following provides information on the major findings regarding hazardous materials in San Joaquin County.

An extensive regulatory framework for management of hazardous materials exists from the local SJCEHD to the federal level; therefore, a similar framework can be applied to addressing clean-up efforts and coordination between State and federal agencies at other contaminated sites to reduce contamination levels and risk to the public from hazardous materials. The project site and nearby land uses are not located in an area that is included on a list of material sites compiled pursuant to Government Code Section 65962.5. A search of the California Water Resources Control Board GeoTracker website (SWRCB 2017) indicates four hazardous materials sites are located within 1,000 feet of Alternative 3A and an additional three hazardous materials sites are located within 1,000 feet of Alternative 4 (SWRCB 2017). Table D provides the information for the seven hazardous materials sites located in the vicinity of the alternative sites and their current status.

Table D: Hazardous Materials Sites in the Project Area

Site Name	Location (address)	Site Category	Cleanup Status	Potential Contaminants of Concern	Potential Media Affected	Alternative Located Within 1,000 Feet
Petrig Seed Company (T0607700588)	5431 Grant Line Road, Banta	LUST Cleanup Site	Completed – Case Closed as of 4/5/1996	Gasoline	Aquifer used for drinking water supply	Alt 3A and Alt 4
Moore Petroleum (T0607700183)	5491 F Street Banta	LUST Cleanup Site	Completed – Case Closed as of 9/6/2013	Gasoline	Aquifer for drinking water supply	Alt 3A and Alt 4
Petrig Seed Company (SLT5S2123251)	5431 Grant Line Road Banta	Cleanup Program Site	Completed – Case Closed as of 4/5/1996	Metals/Heavy Metals, Petroleum/Fuels /Oils	Other groundwater (uses other than drinking water), soil	Alt 3A and Alt 4
Tracy Rural Fire Station #1 (T0607700213)	22284 7th Street Banta	LUST Cleanup Site	Completed-Case Closed as of 1/16/1998	Benzene	Aquifer used for drinking water supply.	Alt 3A and Alt 4
Chevron Banta Terminal-Valley Pacific Petroleum Services Inc. (T10000003412)	23100 Kasson Road Banta	Cleanup Program Site	Completed – Case Closed as of 11/30/2011	None specified	None specified	Alt 4
Chevron Banta Terminal – Chevron Banta	22888 Kasson Road Banta	Cleanup Program Site	Completed-Case Closed as of 4/27/2012	Diesel/Methyl Tertiary Butyl Ether	Aquifer for drinking water supply.	Alt 4

Site Name	Location (address)	Site Category	Cleanup Status	Potential Contaminants of Concern	Potential Media Affected	Alternative Located Within 1,000 Feet
UST Terminal (T0607758465)				(MTBE)/Tert-Butyl Alcohol (TBA)/ Other Fuel Oxygenates		
Chevron Banta Terminal (T0607700004)	22888 Kasson Road, Banta	Cleanup Program Site	Open – remediation as of 1/27/17	Petroleum – Automotive Gasolines, Petroleum – Diesel Fuels	Other groundwater (uses other than drinking water)	Alt 4
Source: California State Water Resources Control Board, GeoTracker. LUST = leaking underground storage tank						

Based on the California Geologic Survey, Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos Map, ultramafic rocks have not been mapped in San Joaquin County (San Joaquin County 2014). Areas likely to contain asbestos have been identified within the Sierra Nevada foothills and Coastal Ranges including: Alameda, Stanislaus, Calaveras, Tuolumne, and Amador Counties. The likelihood of naturally occurring asbestos present within alluvial deposits in San Joaquin County or at either alternative site is low (San Joaquin County 2014).

The closest school to either alternative is Banta Elementary School located at 22345 El Rancho Road in Banta. Banta Elementary School is approximately 450 feet north of Grant Line Road.

Neither alternative site is within the boundary of an airport land use plan or within 2 miles of a public airport, public-use airport or within the vicinity of a private airstrip. The closest public use airport is Tracy Municipal Airport, 5749 South Tracy Boulevard in Tracy, more than 5 miles south of Alternatives 3A and 4.

San Joaquin County has adopted and implemented an Emergency Operations Plan (EOP) to protect the public and the environment within its jurisdiction. The EOP has been prepared to ensure that the County effectively addresses each of the four phases of emergency management: mitigation, preparedness, response, and recovery. In addition, this plan ensures that an effective combined local, regional, state, and federal response to an emergency takes place by making the common emergency management systems being developed by the Governor's Office of Emergency Services through the Standardized Emergency Management System process an integral part of the San Joaquin County response system. Alternative 3A and 4 are located within the jurisdiction of San Joaquin County's Emergency Operations Plan.

According to the San Joaquin County 2035 General Plan Draft EIR, both alternative sites are in a Fire Threat area designated as Non-Wildland/Non-Urban and Urban Unzoned and are located in a Fire Hazard Local Responsibility Area (San Joaquin County 2014).

Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant with Mitigation Incorporated. Construction of either alternative would involve the use of heavy equipment for grading, hauling, and handling materials. The equipment expected to be used during construction includes mobile cranes, excavators, graders, loaders, backhoes, and bulldozers. This construction equipment may require the use of fuels and other common liquids that have hazardous properties (e.g., fuels, oils; fluids that are flammable). These liquids would be used in accordance with all applicable laws and regulations, and as described in the Spill Prevention Countermeasure Plan, and, if used properly, would not pose a hazard to people, animals, plants or sensitive areas on or near the project sites. All refueling of construction equipment would occur within designated staging areas. The use of such hazardous materials would be temporary during construction activities, and the project would not include a permanent use or generate a source of hazardous materials during operational activities. The following mitigation measure shall be implemented to reduce impacts associated with the use of hazardous materials during construction of either alternative:

> **Mitigation Measure HAZ-1:** The project will disturb more than 1 acre of soil and is subject to a Construction Permit from the State Water Board which requires development of a Storm Water Pollution Prevention Plan and a Spill Prevention Countermeasure (SPCP) Plan. Prior to the commencement of construction activities, the construction contractor shall prepare a SPCP and submit the plan to San Joaquin County Environmental Health Department (SJCEHD). The SPCP shall include information on the nature of all hazardous materials that would be used on-site during the construction period and information regarding proper handling of hazardous materials and clean-up procedures in the event of an accidental release. The SPCP shall be available on the project site through the duration of the construction period. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCP.

Implementation of **Mitigation Measure HAZ-1**, as presented above, would reduce this impact to a less than significant level.

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?

Less Than Significant with Mitigation Incorporated. Both Alternative 3A and 4 would cut through land historically used for agriculture. This means that there is the potential for ground contamination resulting from historical storage, use, and transportation of pesticides.

Trenching and other ground-disturbing activities during construction could disturb undocumented soil or groundwater contamination. Adverse impacts could result if construction activities inadvertently disperse contaminated material into the environment. Potential hazards to human

health include the ignition of flammable liquids or vapors, the inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water.

The implementation of **Mitigation Measure HAZ-2** is recommended to minimize the risk of exposure and/or spread of contaminants. With implementation of Mitigation Measure HAZ-2, the potential effects of encountering unrecorded contamination would be a less than significant impact.

> **Mitigation Measure HAZ-2:** A construction management plan shall be prepared that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The construction management plan shall include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency find, consultation with that agency, and protocols for further action. In such instances, construction activities would cease until it is determined in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant with Mitigation Incorporated. Banta Elementary School is within 0.25 mile of both the Alternative 3A and Alternative 4 boundaries. Temporary impacts during construction would therefore include handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing school. No permanent impacts are anticipated to occur. Implementation of **Mitigation Measures HAZ-1** and **HAZ-2** would ensure this impact is less than significant.

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?

No Impact. Table D lists the known hazardous materials sites in the vicinity of the alternative sites. Neither Alternative 3A nor Alternative 4 is located on any of these sites. No impact would occur.

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 for people residing or working in the project area?

No Impact. Neither alternative site is within the boundary of an airport land use plan or within 2 miles of a public airport or public use airport. No impact would occur.

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. Neither alternative is within the vicinity of a private airstrip. No impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant. Both alternative sites are within the County's EOP jurisdiction. Construction activities that may temporarily restrict vehicular traffic would be required to implement appropriate measures to facilitate the passage of persons and vehicles through or around any required road closures. Compliance with the County's EOP would ensure that impacts related to this issue are less than significant under either alternative.

h) Expose people or structures 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?

Less Than Significant. According to the San Joaquin County 2035 General Plan Draft EIR, both alternative sites are within a Fire Threat area designated as Non-Wildland/Non-Urban and Urban Unzoned, and are within a Fire Hazard Local Responsibility Area (San Joaquin County 2014). Neither Alternative 3A nor Alternative 4 would introduce development to wildland areas, and they are not at high risk for wildland fires. Impacts would be less than significant.

IX. HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☒	☐	☐
e) 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?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☒	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Setting

The information in this section is based on the San Joaquin County 2010 General Plan Background Report and the Grant Line Road Corridor Drainage Memo.

Alternative 3A and 4 are within the jurisdiction of the Central Valley Regional Water Quality Control Board; which is under the direction of the California State Water Resources Control Board. Under the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board has regulatory responsibility for protecting water quality.

Surface Water

The alternative sites are within the Tracy (water) Subbasin. This basin covers 539 square miles and is bounded by the Diablo Range to the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin/Stanislaus County line to the south. The major rivers entering the County from the Sierra Nevada include the San Joaquin, the Mokelumne, the Calaveras, and the Stanislaus. The San Joaquin River originates in Fresno County, crosses southwestern San Joaquin County, and empties through the Delta to Suisun Bay. The other rivers join the San Joaquin at or near the Delta. The Mokelumne River originates in Alpine County, crossing the northern portion of San Joaquin County and forming the County line close to the Delta. The Calaveras River, originating in Calaveras County, crosses central San Joaquin County. The Stanislaus River, originating in Alpine County, forms the southern boundary of San Joaquin County. Several small, generally intermittent streams join these rivers or discharge into the Delta.

Groundwater

Alternatives 3A and 4 are located in the San Joaquin Valley Groundwater Basin–Tracy Subbasin. This basin covers 539 square miles and is bounded by the Diablo Range to the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin/Stanislaus County line to the south. The Tracy Subbasin is adjacent to the Eastern San Joaquin Subbasin on the east, the Delta-Mendota Subbasin on the south, and the Solano Subbasin on the north. The Solano Subbasin is part of the Sacramento Valley Groundwater Basin (DWR 2006).

The Tracy Subbasin is drained by the San Joaquin River and one of its major west side tributaries: Coral Hollow Creek. Water-bearing formations of significance in the Tracy Subbasin consist of the Tulare Formation, Older Alluvium, Flood Basin Deposits, and Younger Alluvium. These formations range in depth from less than 100 feet to about 1,400 feet (DWR 2006).

Areas of poor water quality exist throughout the Tracy Subbasin. Elevated chloride levels occur in several areas including along the western side of the subbasin, in the vicinity of Tracy, and along the San Joaquin River. Elevated nitrate levels occur in the northwestern part of the subbasin and near Tracy. Elevated boron levels occur over a large portion of the subbasin from south of Tracy and extending to the northwest side of the subbasin (DWR 2006).

Specific information on groundwater for the project area was not investigated because neither alternative is expected to substantially affect groundwater resources. No wells would be

constructed, and construction activities would not intercept or alter groundwater recharge, discharge, or flow conditions.

Floodplain

The Federal Emergency Management Agency (FEMA) has designated the Alternative 3A site as follows:

- **Zone X (unshaded).** Zone X indicates areas determined to be outside the 0.2 percent annual chance floodplain.

FEMA has designated the Alternative 4 site as follows:

- **Zone X** (unshaded). See description above.
- **Zone AE.** Zone AE is an area subject to inundation by the 1 percent annual chance flood event determined by detailed methods.

The vertical roadway profile of the 4-lane arterial to bypass the community of Banta would be developed on a slightly higher vertical profile than the existing topography.

Discussion

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant With Mitigation Incorporated. Aquatic resources within the project area are limited to agricultural ditches associated with the row crops and Tom Paine Slough, located about 1 mile north of the alternative sites. These drainage features may serve to convey storm water runoff or collect high groundwater. Neither preconstruction site has a defined discharge point, due to the relatively flat nature of the agricultural land.

During construction, both alternatives have the potential to cause temporary water quality impacts due to grading activities and the removal of existing vegetation, which can cause increased erosion. Storm water runoff from the project may transport pollutants to the agricultural ditches if BMPs are not properly implemented. Generally, as the Disturbed Soils Area increases, the potential for temporary water quality impacts also increases.

Long-term water quality impacts are usually due to changes in storm water drainage. Either alternative would result in the construction of a new four-lane arterial around the community of Banta. For Alternative 3A, this would cause a permanent increase in impervious surfaces of approximately 25 acres of new or replaced impervious surface, while Alternative 4 would cause an increase of 20 acres of new or replaced impervious surface. As such, both alternatives have the potential to impact long-term quality due to a permanent increase in runoff and pollutant loading from the road surface. Mitigation Measure HYDRO-2 requires that BMPs and storm water control measures be implemented to control storm water generated by either alternative. Storm water control measures may include development of drainage ditches, vegetated bioswales, or other storm water control and treatment measures.

The following mitigation measures would be implemented during construction and operational activities of the Alternative 3A or Alternative 4.

> **Mitigation Measure HYDRO-1:** Construction site temporary BMPs and any subsequent permit requirements as they relate to construction activities for the project shall be prepared and implemented. This documentation shall include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the commencement of construction and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. These temporary BMPs shall be installed prior to any construction operations and shall be in place for the duration of the contract. The removal of these BMPs along with site cleanup shall be the final construction operation procedures.
>
> **Mitigation Measure HYDRO-2:** To control stormwater and sedimentation during the construction and operational periods of the project, BMPs outlined in any authorizations or permits issued under the authority of the CWA shall be implemented. Stormwater control measures shall be designed to accommodate stormwater generated by the project. If such BMPs are ineffective, the San Joaquin County (Public Works) shall remedy the situation immediately, in consultation with the regulatory and resource agencies.

With implementation of **Mitigation Measures HYDRO-1** and **HYDRO-2** impacts to water quality during construction and operation would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact. During construction activity, minimal amounts of water may be required for dust control activities. Water required during construction activities would be transported to the site by water trucks and stored in these trucks or tanks at the construction staging area. Groundwater usage for construction would be short-term and minor; supplies would not be substantially depleted nor would interference of groundwater recharge occur due to water usage during construction. Once operational, neither alternative would require the use of water. No groundwater impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact with Mitigation Incorporated. The topography in the project area is generally flat, with overland drainage flowing from south to north. Construction of the new four-lane arterial around the community of Banta would create approximately 25 acres of new or

replaced impervious surface under Alternative 3A and 20 acres of new or replaced impervious surface under Alternative 4. With implementation of **Mitigation Measure HYDRO-3** and **HYDRO-4**, impacts to the drainage pattern from construction of a new four-lane arterial would be less than significant.

> **Mitigation Measure HYDRO-3:** Detention basins shall be incorporated into project design such that post-construction conditions replicate the natural drainage patterns of the site. Since the project will create new impervious surfaces, the basins will mitigate for increased runoff.
>
> **Mitigation Measure HYDRO-4:** Roadside ditches will be provided adjacent to the new roadway to convey drainage from the roadway to bioretention areas and detention basins and culvert pipes will be used to carry stormwater under roads where needed.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact With Mitigation Incorporated. Alternative 3A is in an area of low risk for flooding, as it is out of the 0.2-percent annual chance floodplain, while Alternative 4 is located in an area of low to moderate risk for flooding. Although the development of the new roadway would alter the existing drainage pattern of either site through the construction of additional impervious surfaces, Mitigation Measures HYDRO-3 and HYDRO-4 would ensure that storm water generated by either alternative is adequately captured and retained such that a substantial increase in surface runoff leaving the site is not anticipated. Impacts would be less than significant with implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4**.

e) 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?

Less Than Significant Impact with Mitigation Incorporated. Both Alternative 3A and Alternative 4 would increase the area of impervious surfaces; however, design features would be implemented to provide an adequate storm water drainage system within the site that would be able to accommodate such an increase. Impacts would be less than significant with implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4**.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact with Mitigation Incorporated. As discussed above under Section IX (a) and (c), **Mitigation Measures HYDRO-1** through **HYDRO-4** would be implemented to control storm water generated by either alternative during construction and operation. Implementation of these measures would ensure that on-site storm water is properly retained and treated prior to leaving the site, reducing any water quality impacts associated with the project to less than significant levels.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Alternative 3A

No Impact. Alternative 3A is located in Zone X on FEMA Panels 06077C0615F, 06077C0595F, and 06077C0755F dated October 16, 2009. Zone X is not an area within a 100-year flood hazard. Further, Alternative A does not include the development of residential units. Thus, no impact would occur.

Alternative 4

No Impact. Alternative 4 is located in both Zone AE and X on FEMA Panel 06077C0615F dated October 16, 2009, and Zone X on FEMA Panel 06077C0595F dated October 16, 2009. Zone X is not an area with a 100-year flood hazard. Zone AE is an area subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. In Zone AE, mandatory flood insurance purchase requirements and floodplain management standards apply. However, Alternative 4 does not include the development of residential units. Thus, no impact would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Alternative 3A

No Impact. As discussed above under Section IX (g), Alternative 3A is not located within a 100-year flood hazard area. Therefore, no impact would occur.

Alternative 4

Less Than Significant Impact With Mitigation Incorporated. According to FEMA, the west portion of Alternative 4 is located in Flood Zone X, an area of low risk. The east end of Alternative 4 is in a "high risk" area with the FEMA designation Flood Zone AE, defined as an area that would be inundated by 100-year storm. The new four-lane arterial would have a slightly higher vertical profile than the existing topography. The majority of the new four-lane arterial would be constructed in Flood Zone X, outside the 100-year flood hazard area. While a portion of the new four-lane arterial would be constructed in Flood Zone AE, implementation of **Mitigation Measures HYDRO-3** and **HYDRO-4** would provide for a storm water drainage system that would reduce the impact to less than significant.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?

Less Than Significant Impact. The closest lakes to the alternative sites are Lake McClure and San Luis Reservoir, 80 miles and 65 miles to the east and southeast, respectively. While the alternative sites are located in areas that could potentially be subject to flooding in the unlikely event of dam failure, neither Alternative 3A nor Alternative 4 would increase the number of people or structures exposed to this risk as the existing Grant Line Road is located within this area as well. Therefore, project implementation would not expose additional people or structures to significant injury or loss of life as a result of a levee or dam failure. Impacts would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. A seiche is a large wave that occurs on a body of water (typically a lake or reservoir) due to a seismic event or large landslide event that can cause flooding. The alternative sites are not near a reservoir or lake and therefore would not be prone to damage from a seiche. A tsunami is a large wave that occurs in the ocean, typically caused by a seismic event, which can inundate coastal areas with floodwaters. The alternative sites are not located near the coast, and, therefore, would not be subject to flooding caused by a tsunami. A mudflow typically occurs in hilly or mountainous terrain when large amounts of rain have fallen and the soil is inundated with water. The alternative sites are located in the San Joaquin Valley in an area that is topographically flat and void of hills and mountains. The alternatives would not be subject to the effects of a mudflow. No impacts would occur.

X. LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐

Environmental Setting

Alternative 3A begins at Tracy's eastern boundary and terminates at 11th Street. Alternative 4 begins at Tracy's eastern boundary and terminates just to the west of Mancuso Road. The existing Grant Line Road/Kasson Road bisects Banta and runs just north of the Stoneridge Community. The majority of the land north and south of the existing Grant Line Road/Kasson Road is under agricultural production.

Both alternatives are located in unincorporated San Joaquin County. Land uses in the project vicinity are under the jurisdiction of the San Joaquin County General Plan Land Use Plan. Land parcels surrounding the alternatives to the north and south are designated as Agriculture/General (A/G); Agriculture-Urban Reserve (A-UR); Rural Residential (R/R); Rural Service Commercial (C/RS); and, Limited Industrial (I/L). The following describes each of the land use designations identified above.

- **General Agriculture (A/G):** This designation provides for large-scale agricultural production and associated processing, sales, and support uses. The General Agriculture Designation generally applies to areas outside areas planned for urban development where soils are capable of producing a wide variety of crops and/or support grazing. Typical building types include low-intensity structures associated with farming and agricultural processing and sales. Residential density is a maximum of 0.05 dwelling units per acre.

- **Agriculture-Urban Reserve (A/UR):** This designation provides a reserve for urban development, but is not necessary to accommodate development projected during the planning period of the General Plan (i.e., 2035). The Agriculture-Urban Reserve designation generally applies to areas currently undeveloped or used for agricultural production that are in the logical path of development around an Urban Community or City Fringe Area. This designation may be applied to areas adjacent to cities and in City Fringe Areas if: (1) the area identified is designated for urban development in a city general plan, and (2) the County determines that the area

represents a reasonable expansion of a city. Residential density is a maximum of 0.05 dwelling units per acre.

- **Rural Residential (R/R):** This designation provides for lower density residential development in areas that have been developed or subdivided within predominantly agricultural and open space areas. Aside from areas already designated Rural Residential at the time of the General Plan's adoption, the Rural Residential designation may only be applied in Rural Communities where full urban services are not available or expected, and to areas in Urban Communities where rural residential densities already exist. Typical building types include large-lot single family development in a rural setting. The maximum density is 1 dwelling unit per acre.

- **Rural Service Commercial (C/RS):** This designation provides for a mix of retail and service uses that are typically needed by residents in rural areas and surrounding agricultural operations/employees. The Rural Service Commercial designation is only allowed in Rural Communities. Developments in Rural Service Commercial designated areas may include a mix of uses, recognizing that the separation of uses is not practical in a rural setting. Developments should be located on a County-defined Collector or higher classification roadway and may include pedestrian and bicycle facilities. Typical building types include one- to two-story commercial structures.

- **Limited Industrial (I/L):** This designation provides for a range of industrial employment-generating uses, including production, assembly, warehousing, and distribution, that are conducted entirely within enclosed buildings and have screened outdoor storage areas. The Limited Industrial designation is confined to areas served by, or planned to be served by, a public water, wastewater, and drainage system. Developments must be located on a County-defined Minor Arterial or higher classification roadway. Typical building types include industrial structures limited to 100 feet in height.

Alternatives 3A and 4 are located in the jurisdiction of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

Discussion

a) Physically divide an established community?

Alternative 3A

No Impact. The existing Grant Line Road corridor bisects Banta, and serves as the primary road through the community. Alternative 3A, which would provide relief from increased traffic volume through the town, would circumvent the residential communities of Banta, and Stoneridge to the south. This roadway design would prevent the division of Banta from increasing traffic. Alternative 3A would not divide the established community nor create a physical barrier through or between the Banta and Stoneridge communities. There would be no impact dividing either Banta or Stoneridge.

Alternative 4

Less Than Significant Impact. The existing Grant Line Road bisects Banta, and serves as the primary road through the community. Alternative 4, which would provide relief from increased traffic volume through the town, would circumvent the town center to the south. This roadway design would reduce traffic along the existing roadway through Banta and limit it to local traffic. Alternative 4 would not divide the established community of Banta as it would be located just south of the town. The existing Grant Line Road runs along the north boundary of the rural community of Stoneridge. Alternative 4 would follow the same route, widening the road but not encroaching on the community itself. Although Alternative 4 would develop the new roadway between the communities of Banta and Stoneridge and change access between the two communities, it would not divide the communities themselves. Therefore, impacts would be less than significant.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. Both Alternatives include parcels of land that are designated as Agriculture under the San Joaquin County General Plan Land Use Element and are zoned as General Agricultural (AG-40) under the San Joaquin County Zoning Code. Both alternatives would be developed across parcels that are designated AG-40 per the San Joaquin County Zoning Code. This zone was established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Project implementation would require a Zoning Amendment for the parcels the new roadway would cross. The Zoning Amendment would allow San Joaquin County to rezone the area from AG-40 to County Right-of-Way. The County's Public Works Department would be required to follow the County Zoning Amendment requirements. Following the Zoning Amendment requirements would result in a less than significant impact under Alternative 3A or Alternative 4.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less Than Significant Impact with Mitigation. Neither Alternative 3A nor Alternative 4 is anticipated to conflict with the provisions of the San Joaquin County Multi-Species Habitat Conservation Plan, which is the only approved habitat conservation plan within the project area. However, this threshold will be discussed in the Draft EIR for the project under the Biological Resources Section. Implementation of **Mitigation Measures BIO-1** and **BIO-**2, as presented in the EIR, would ensure that both alternatives do no conflict with the San Joaquin County Multi-Species Habitat Conservation Plan.

XI. MINERAL RESOURCES

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

Environmental Setting

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock, but excluding geothermal resources, natural gas, and petroleum. Rock, sand, gravel, and earth are also considered minerals by the California Department of Conservation when extracted by surface mining operations. According to the San Joaquin County 2035 General Plan Draft EIR, neither alternative site is located in a mineral resource zone (MRZ) (San Joaquin County 2014).

Discussion

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?

No Impact. Neither alternative site is located within an MRZ or in the vicinity of an MRZ. Therefore, neither Alternative 3A nor Alternative 4 would result in loss of availability of a known mineral resource that would be of value. No impact would occur.

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?

No Impact. As discussed above, neither alternative site is located in an area of locally important mineral resource recovery sites. Implementation of Alternative 3A or Alternative 4 would not result in the loss of such locally important mineral resources. No impact would occur.

XII. NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☒	☐	☐	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☒	☐	☐	☐

Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially generate noise in excess of County standards. This threshold will be discussed in the Draft EIR for the project.

b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially generate excessive ground borne vibration or ground borne noise levels. This threshold will be discussed in the Draft EIR for the project.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially result in substantial permanent increases in ambient noise levels in the project vicinity. This threshold will be discussed in the Draft EIR for the project.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially result in substantial temporary increases in ambient noise levels in the project vicinity. This threshold will be discussed in the Draft EIR for the project.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to expose people residing or working near a public airport to excessive noise levels; however, this threshold will be discussed in the Draft EIR for the project.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to expose people residing or working near a private airstrip to excessive noise levels; however, this threshold will be discussed in the Draft EIR for the project.

XIII. POPULATION AND HOUSING

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

Environmental Setting

Alternative 3A is located along a 1.65-mile-long corridor south of Grant Line Road in San Joaquin County. Alternative 3A begins at the intersection of Grant Line Road and Chabot Court, continues east, swinging south of Banta, and terminates at the 11th Street/Bird Road intersection. Alternative 4 is a 2.4-mile-long corridor along Grant Line Road/Kasson Road in the southwestern portion of San Joaquin County. Alternative 4 begins at Tracy's eastern boundary, continues east through the unincorporated community of Banta, under the Interstate 5 overcrossing, and terminates just to the west of Mancuso Road.

In 1869, permanent settlement of the Tracy area began following the construction of the Central Pacific Railroad between San Joaquin County and the San Francisco Bay area through the Altamont Pass. In 1878, a second rail line was constructed to the north, connecting the county with Martinez. In 1887, a third line was extended south from the junction of these two railways, connecting the San Francisco Bay Area to Los Angeles. In 1882, Southern Pacific established the "Town of Tracy" around the junction of the three railways. The town's strategic location led to early prosperity, and Tracy quickly became an important commercial and service center. The city incorporated in 1910. According to the United States Census Bureau, Tracy had a population of 56,929 residents in 2000 and a population of 82,922 residents in 2010, representing a 45.6 percent increase in population over a 10-year period (United States Census Bureau 2010). In 2000, Tracy had a total of 18,087 housing units, and in 2010 had a total of 25,963 housing units, representing a 43.5 percent increase in housing units over a 10-year period (United States Census Bureau 2010).

Banta, originally the location of a Gold Rush stage stop, is a small unincorporated agricultural community located 4 miles east of downtown Tracy. Before the establishment of Tracy, Banta was the chief town on the west side of the San Joaquin River. The town's founder, Henry Banta, envisioned the community would become a major shipping hub for cattle, sheep, hay, and grain.

Banta donated half of his original town site to the Central Pacific Railroad, thinking the company's new Antioch line would bisect the Transcontinental Railroad on his property. When the Antioch line was located elsewhere, Banta sold the town. The town survived as a small trade and supply center, with its population remaining virtually the same between the 1880s and the 1980s.

Irrigation, first brought to the area in the 1920s, helped realize the agricultural potential of the Banta area. Following the formation of the Banta-Carbona Irrigation District, land around Banta was subdivided into 40- to 100-acre tracts and was sold to small "truck farm" operations. The town remains the center of a large dairy, fruit, vegetable, and vineyard growing area, but has long been surpassed by Tracy as the leading population center west of the river.

Stoneridge consists of a large rural subdivision surrounded by commercial agriculture. The 94-acre rural community is 4 miles east of central Tracy, on a triangular tract bounded by Grant Line Road, Bird Road, and 11th Street.

Discussion

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Grant Line Road corridor is experiencing large volumes of both vehicle and truck traffic due to the growth of Tracy's population and industrial area in the northeastern part of the city. Banta is near the middle of the corridor and is at the epicenter of an increase in traffic flows and accidents. Banta is a rural community consisting of residential housing, an elementary school, and commercial buildings. Implementation of Alternative 3A or Alternative 4 would not induce direct population growth to the rural residential/agricultural uses in the surrounding area. Therefore, neither Alternative 3A nor Alternative 4 would directly or indirectly induce population growth. No impacts would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. Rural residential units in the Banta and Stoneridge communities are adjacent to both alternative sites. Implementation of either alternative would not require the acquisition of these residential units and therefore would not result in the displacement of people residing in these residential units or require the construction of replacement housing elsewhere to accommodate the relocation of residents. Both alternatives would require the acquisition of more than half the acreage of one parcel, Assessor's Parcel No. 250-030-05. However, no residential units are located on this parcel that would be displaced or would require the construction of replacement housing elsewhere. Therefore, no impacts would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed above, rural residential units are located adjacent to the alternative sites. However, implementation of either alternative would not require the displacement of residents from these residential units. Therefore, replacement housing would not be needed elsewhere to accommodate displaced residents due to implementation of Alternative 3A or Alternative 4. No impacts would occur.

XIV. PUBLIC SERVICES

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

Environmental Setting

Alternatives 3A and 4 are located in a rural portion of San Joaquin County east of Tracy. The alternative sites are located in the vicinity of both the Banta and Stoneridge communities.

Fire Protection Services

Both sites were within the jurisdiction of the Tracy Rural Fire Protection District up until 1999. On September 16, 1999, the City of Tracy Fire Department merged with the Tracy Rural Fire Protection District to form the South County Fire Authority (SCFA). The SCFA was created to provide fire protection services to the entire jurisdictional area of both the corporate Tracy city limits and the surrounding rural community. The SCFA provides service with six fire stations, four within the Tracy city limits and two within the Tracy Rural Fire Protection District boundary. The nearest fire station to the sites is Station 92, located at 1035 East Grant Line Road in Tracy, 1.2 miles west of either alternative. This station is currently staffed with three personnel and houses a 2015 Spartan Hi-Tech Type 1 Pumper, and a California Governor's Office of Emergency Services 2008 HME Type 1 Pumper.

Law Enforcement Protection Services

Both sites are served by the San Joaquin County Sheriff's Department and the California Highway Patrol (CHP). The San Joaquin County Sheriff's Department office is at 7000 Michael Canlis Boulevard in French Camp, approximately 10 miles northeast of Alternative 3A and 9.6 miles northeast of Alternative 4. The Sheriff's Department Patrol Division has 138 uniformed deputies who provide service throughout San Joaquin County in eight geographical beats. Both sites are in

Beat 8 of the San Joaquin County Sheriff's Department jurisdiction. The CHP also provides law enforcement services in the project area. The nearest CHP station is at 385 West Grant Line Road in Tracy, 2.4 miles west of either alternative.

Schools

Both sites are within the jurisdiction of Banta Elementary School District. The nearest school is Banta Elementary School, 22345 South El Rancho Road in Banta, north of the alternative sites along the existing Grant Line Road. This elementary school provides Kindergarten through eighth grade classes, with a 2012–2013 enrollment of 319 students.

Parks

No parks are located in the project vicinity. Banta does not have any parks; however, Banta Elementary School provides park/recreational facilities for community use. No parks are located within the Stoneridge Community. The closest park to the alternative sites is Glover Park located at 584 Pescadero Avenue in Tracy. This 2.14-acre facility is 1.6 miles northwest of the alternative sites and offers amenities such as a play area, basketball courts, and barbecues.

Other Public Facilities

The nearest public library is the Tracy Branch Library of the Stockton-San Joaquin County Public Library system, located at 20 East Easton Avenue in Tracy, approximately 2.5 miles southwest of the alternative sites. All other public facilities are within Tracy and not near the alternative sites.

Discussion

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, police protection, schools, parks, other public facilities?

No Impact. Alternatives 3A and 4 would both include a traffic management plan to ensure that residents and through traffic would be able to navigate around the project site during construction, should temporary road closures be required. Once completed, the new roadway around the community of Banta would provide improved traffic flows and would not hinder emergency escape routes.

Neither Alternative 3A nor Alternative 4 includes the development of residential units that would generate residents or the demand for public services; therefore, the alternatives would not degrade the quality of existing public services in the area. No parks, recreational facilities or other public facilities are near the alternative sites; therefore, such public services would not be impacted by the development of either alternative. Impacts to public services would not occur.

XV. RECREATION

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

Environmental Setting

The project sites are in a rural portion of San Joaquin County. Parks and recreational facilities are not located near the alternative sites. The nearest park and/or recreational facility is located in Tracy, 1.6 miles northwest of the alternative sites. Banta Elementary School, just north of the existing Grant Line Road, provides a soccer field and basketball courts for community use.

Discussion

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

No Impact. Both alternative sites are in a rural residential/agricultural portion of San Joaquin County near Banta and are not near any existing regional, neighborhood parks or other recreational facilities, with the exception of a soccer field and basketball courts available for community use at Banta Elementary School, located just north of the existing Grant Line Road corridor. The alternatives would construct a four-lane arterial to bypass Banta and do not include residential units that would increase the use of existing neighborhood parks, regional parks, or recreational facilities. Therefore, implementation of the Alternative 3A or 4 would not increase the use of such facilities so that substantial deterioration of the facility would occur or be accelerated. No impacts would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. Neither alternative would develop new recreational facilities, nor would such facilities need to be constructed or expanded as a result of project implementation. Therefore, implementation of Alternatives 3A or 4 would not include the development of facilities that would have an adverse physical effect on the environment. No impacts would occur.

XVI. TRANSPORTATION AND CIRCULATION

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☒	☐	☐	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate emergency access?	☒	☐	☐	☐
f) Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☒	☐	☐	☐

Discussion

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially conflict with applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system. This threshold will be discussed in the Draft EIR for the project.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially conflict with applicable congestion management programs. This threshold will be discussed in the Draft EIR for the project.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to result in a change in air traffic patterns. However, this threshold will be discussed in the Draft EIR for the project.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to substantially increase hazards due to design features or incompatible uses. However, this threshold will be discussed in the Draft EIR for the project.

e) Result in inadequate emergency access?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to result in inadequate emergency access. However, this threshold will be discussed in the Draft EIR for the project.

f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Potentially Significant. Neither Alternative 3A nor Alternative 4 is anticipated to conflict with adopted policies, plans, or programs supporting alternative transportation. However, this threshold will be discussed in the Draft EIR for the project.

XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
1. 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,	☐	☒	☐	☐
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting

Cultural Resources Background

A Cultural Resources Study and Eligibility Evaluations Document was prepared in 2016 for Alternative 4. A Supplemental Cultural Resources Study was prepared in December 2017 for Alternative 3A, which covers additional acres that were not previously reviewed by the original study prepared in 2016 for Alternative 4, and that may be impacted by Alternative 3A alignment. The 2017 Supplemental Study, in combination with the 2016 Cultural Resources Study, determined that the likelihood of encountering cultural resources during implementation of Alternative 3A is

low, while the likelihood of encountering cultural resources during implementation of Alternative 4 is moderate.

Eleven built environment resources 50 years or older were identified within the Alternative 3A site. Ten of these resources were determined not to be eligible for listing in the CRHR and are not considered historical resources as defined by CEQA. One of the resources was determined to be outside of the vertical area of direct impact for the project, and no significant indirect or direct impacts are anticipated from implementation of Alternative 3A. The 2016 Cultural Resources Study identified 23 built environment resources 50 years or older and 1 archaeological resource within the Alternative 4 area. LSA identified six of the built environment resources that were either heavily modified to where their integrity was compromised, too far from the Alternative 4 activities to be potentially impacted, or were screened visually from the Alternative 4 proposed design elements. Of the remaining 18 cultural resources within the Alternative 4 area, none of the resources were determined to meet the criteria to qualify as eligible for consideration as historical resources under CEQA. Therefore, no further consideration or study of these resources is warranted for Alternative 3A or 4.

Regulatory Setting

Assembly Bill 52. AB 52, which became law on January 1, 2015, provides for governmental lead agency consultation with California Native American tribes during the CEQA process, and provides that significant impacts to "tribal cultural resources" may be significant environmental impacts. Public Resources Code (PRC) Section 21074 states that tribal cultural resources are:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:

A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.

B. Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.

C. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1. In applying the criteria set forth in subdivision (c) of PRC §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

The consultation provisions of the law require that within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project. California Native American tribes must be recognized by the NAHC as traditionally and culturally affiliated with the project site, and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. Consultation may also include a discussion of project

alternatives, significant effects, and mitigation measures, and should be undertaken in good faith by both the tribe and lead agency. If a project is determined to result in a significant impact to an identified tribal cultural resource, the consultation process must conclude, or otherwise terminate as provided by law, prior to adoption of a Negative Declaration, Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Section 21080.3.1, Section 21080.3.2, Section 21082.3).

Native American Consultation

As part of the 2016 Cultural Resources Study, consultation letters were sent on May 11, 2016, to the Native American contacts listed by the NAHC, including the Buena Vista Rancheria, the Ione Band of Miwok Indians, the North Valley Yokuts Tribe, and the Wilton Rancheria. Letters included a summary of Alternative 4 and provided maps of the Archaeological Study Area for this alternative. The letters also asked the Native American representatives for information regarding cultural resources within the Alternative 4 Archaeological Study Area and directed inquiries and consultation requests to the County at the contact information provided within the letter. No responses or requests for consultation were received from the Native American representatives

LSA conducted additional consultation efforts to identify resources within the Alternative 3A site as part of the 2017 Supplemental Study. On August 8, 2017, LSA sent letters describing the project with attached maps to the Native American contacts listed by the NAHC, including the Buena Vista Rancheria, the Ione Band of Miwok Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, and the Wilton Rancheria.

LSA did not receive any responses to the letters sent on August 8, 2017. Follow-up telephone calls were conducted on September 28, 2017, to gather information regarding tribal resources that may be impacted by implementation of Alternative 3A. The following summarizes those calls.

- Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria: LSA called Ms. Pope on September 28, 2017, and left a message on her answering machine. Mr. Mike DeSpain returned the call on her behalf and left a voicemail with LSA the same day. Ms. Rhea Sanchez of LSA returned Mr. DeSpain's phone call on the same day and learned that Mr. DeSpain was unable to locate the original letter. Ms. Sanchez emailed Mr. DeSpain a copy of the original letter and invited consultation again if there are any questions or comments regarding the project. No additional communication ensued.

- Crystal Martinez-Alire, Chairperson, Ione Band of Miwok Indians: LSA called Dr. Martinez-Alire on September 28, 2017, and left a message with Acting Language Coordinator Suzanna Walsh. Ms. Walsh took LSA's message, phone number, and email information to forward to Dr. Martinez-Alire. Ms. Walsh said if LSA heard nothing from Dr. Martinez-Alire, to assume no comment.

- Randy Yonemura, Cultural Committee Chair, Ione Band of Miwok Indians: LSA called Mr. Yonemura on September 28, 2017, and left a message with Acting Language Coordinator Suzanna Walsh. Ms. Walsh took LSA's message, phone number, and email information to

forward to Mr. Yonemura. Ms. Walsh said if LSA heard nothing from him, to assume no comment.

- California Valley Miwok Tribe: LSA called the number listed on September 28, 2017, and left a message on an answering machine inviting comments and questions regarding the notification letter sent, along with contact information. No response has been received to date.

- Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe: LSA called on September 28, 2017. There was no answer.

- Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe: LSA called Ms. Perez on September 28, 2017, and received no answer.

- Lois Martin, Chairperson, Southern Sierra Miwuk Nation: LSA called Ms. Martin on September 28, 2017, and left a message on her answering machine inviting comments and questions regarding the notification letter sent, and contact information. No response has been received to date.

- Raymond Hitchcock, Chairperson, Wilton Rancheria: LSA called Mr. Hitchcock on September 28, 2017, and left a message on his answering machine inviting comments and questions regarding the notification letter sent, along with contact information. No response has been received to date.

Discussion

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

1. 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,

2. 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.

Less Than Significant Impact with Mitigation Incorporated. As described above under *Existing Setting*, no resources listed or eligible for listing in CRHR or in a local register of historical resources were identified within the Alternative 3A or 4 sites. Additionally, multiple attempts were made by LSA, acting for the County, to seek input from Native American tribal representatives to request information regarding tribal cultural resources within the sites. Consulted Native American tribes provided no information on tribal cultural resources within the Alternative 3A or 4 areas to LSA, and

the tribes made no formal requests for consultation under AB 52; therefore, no significant tribal cultural resources have been identified within the Alternative 3A or 4 sites.

Although no tribal cultural resources have been identified within the Alternative 3A or 4 sites, the potential for encountering as-yet unidentified buried tribal cultural resources cannot be discounted. Therefore, **Mitigation Measures CULT-1** and **CULT-2** shall be implemented to reduce potential impacts to tribal cultural resources under Alternative 3A, and **Mitigation Measures CULT-3** and **CULT-4** shall be implemented to reduce potential impacts to tribal cultural resources under Alternative 4.

XVIII. UTILITIES AND SERVICES SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Setting

The alternative sites are in a rural area of San Joaquin County where utility services are available. This section describes the utility services (potable and nonpotable water service, wastewater service, solid waste disposal service, and electric/natural gas service) that are located in the area of the sites.

Potable and Nonpotable Water Service

Water delivery in San Joaquin County is provided by several agencies and projects including federal, State, regional, and local water projects; special districts (e.g., irrigation, water, and water conservation); and private water systems. Irrigation and domestic water systems within San Joaquin County are operated and maintained by irrigation districts, water districts, and water conservation

districts. Irrigation, water, and water conservation districts are located throughout San Joaquin County, some small, others spanning several planning areas.

While water districts or municipal water systems serve all San Joaquin County cities, most unincorporated areas of the county are not located within water districts or do not have water systems that provide water service. These communities must rely on private wells and groundwater. Most water supply districts in San Joaquin County have been transitioning away from groundwater sources to surface water to reduce groundwater overdraft. The following unincorporated communities are not served by a water district and rely on groundwater pumping: Banta, Stoneridge, Glenwood, Noble Acres, Collierville, Coopers Corner, and Peters.

Both alternatives are east of Tracy, near Banta and the Stoneridge community. Private wells supply potable and nonpotable water in the project area. Water quality testing has indicated a high concentration of nitrates in some of the wells in the area. No water system is planned to be developed in the area anytime in the near future.

Wastewater Service

Most of the sanitary sewer systems within the unincorporated areas of San Joaquin County serve individual small communities. Sanitary sewer service within San Joaquin County is generally provided by special districts including community service districts, public utility districts, and sewer maintenance districts. Many special districts that provide wastewater service cover small areas within the county. Some special district sewer systems are connected to cities, but are independently operated and serve smaller portions of the county. Some of the districts were created to serve planned development that never occurred within San Joaquin County.

Some agencies provide sewer collection service only and contract with surrounding agencies for wastewater treatment and disposal. The major sewer district areas in San Joaquin County have their own sewer treatment facilities and they provide sewer services to large populated areas. Some of the unincorporated communities of San Joaquin County lack sanitary sewer infrastructure, and are serviced by individual community septic systems. These communities include: Acampo, Banta, Chrisman, Collierville, Coopers Corner, Delta, Farmington, French Camp, Glenwood, Lammersville, Morada, New Jerusalem, Noble Acres, Peters, Stoneridge, and Victor.

Banta and the Stoneridge community, where the alternatives are located, are not connected to a wastewater service system. Individual septic tanks collect wastewater in the surrounding area. No wastewater collection system is planned to be developed in the area any time in the near future.

Solid Waste Disposal Service

Solid waste generated during construction activities would be collected and most likely would be taken to the Tracy Material Recovery Facility and Transfer Station and then sent to the Foothill Sanitary Landfill. Tracy Material Recovery is at 30703 South MacArthur Drive in Tracy, more than 5 miles southwest of the alternative sites. This facility has a maximum daily intake limit of 1,800 tons of material and accepts agricultural, construction/demolition, industrial, mixed municipal, and tire waste types (CalRecycle 2017). Foothill Sanitary Landfill is located at 6484 North Waverly Road in Linden, approximately 30 miles northeast of the alternative sites. This facility has a maximum daily

intake capacity of 1,500 tons, a maximum permitted capacity of 138 million cubic yards, and as of June 10, 2010, has a remaining capacity of 125 million cubic yards with an estimated ceased operation date of December 31, 2082 (CalRecycle 2017).

Electric and Natural Gas Service

Pacific Gas and Electric Co. (PG&E), the Modesto Irrigation District (MID), Lodi Electric Utility, and the Port of Stockton provide electric service in San Joaquin County. PG&E provides all of the natural gas services within San Joaquin County. The alternative sites are within the service boundary of PG&E for electrical and natural gas service.

Utility poles and electrical lines run along the northern and southern side of Grant Line Road in the westernmost portion of the Alternative 3A site and along Bird Road and 11th Street in the easternmost portion of the Alternative 3A site. Utility poles and electrical lines run along the northern and southern side of existing Grant Line Road/Kasson Road within the Alternative 4 site.

Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. During development of either alternative, construction workers on site would generate a nominal amount of wastewater. Any amount of wastewater generated by construction workers would be hauled and treated off site. Once operational, neither alternative would generate wastewater. Implementation of Alternative 3A or 4 would not cause wastewater treatment requirements to be exceeded. No impacts would occur.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. During construction of either alternative, construction workers would generate nominal amounts of wastewater; however, once operational, neither alternative would generate additional wastewater. Water would be used during construction activities for dust suppression; however, once operational, neither alternative would require water. Implementation of Alternative 3A or 4 would not require or result in the construction of new water or wastewater treatment facilities. No impacts would occur.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. Either alternative would result in the addition of impervious surfaces in the form of a new four-lane arterial roadway. Storm water drainage improvements would be developed along the corridor as part of the alternatives to accommodate the increase in impervious surfaces. As drainage facilities would be developed within the sites to accommodate storm water from the alternatives, no new or expanded storm water drainage facilities would be required off site. Impacts would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. Neither alternative would require water service during operation; however, both would require water for dust suppression during construction activities. Water required during construction activities would be transported to the site by water trucks and stored in these trucks at the construction staging area. Water requirements for construction of the alternatives would not exceed existing entitlements. Impacts would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. Construction workers would generate a nominal amount of wastewater during the construction period. Wastewater generated during construction would be treated at off-site facilities. Operation of either alternative would not result in the generation of wastewater. Implementation of Alternative 3A or Alternative 4 would not result in an impact to wastewater treatment capacity. No impact would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Solid waste generated during construction would be limited to construction debris, including asphalt and concrete generated by the construction. Solid waste disposal would take place in accordance with federal, State and local regulations. Disposal would take place at the Foothill Sanitary Landfill, which has sufficient permitted remaining capacity for solid waste disposal, as described above under *Environmental Setting*. Either alternative would be served by a landfill with sufficient permitted capacity; therefore, impacts would be less than significant.

g) Comply with federal, State, and local statutes and regulations related to solid waste?

Less Than Significant Impact. Both alternatives would conform to all applicable local, State and federal solid waste regulations. Therefore, impacts would be less than significant.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Discussion

a) Does the project have the potential to 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, 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?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially degrade the quality of the environment and/or impact biological or cultural resources. This threshold will be discussed in the Draft EIR for the project.

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.)

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially result in cumulatively considerable impacts. This threshold will be discussed in the Draft EIR for the project.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant. Both Alternative 3A and Alternative 4 could potentially result in environmental effects which could cause substantial adverse effects on human beings. This threshold will be discussed in the Draft EIR for the project.

3.0 REPORT PREPARERS

LSA
Roseville Office
201 Creekside Ridge Court, Suite 250
Roseville, California 95678

Laura Lafler, Principal Environmental Planner
Edward Heming, Senior Environmental Planner
Cara Lambirth, Senior Environmental Planner
Chris Graham, Environmental Planner
Ali Boule, Environmental Planner
Stephanie Powers, Word Processor

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APPENDIX C-1

RESPONSE TO COMMENTS ON DRAFT ENVIRONMENTAL IMPACT REPORT

RESPONSE TO COMMENTS

GRANT LINE ROAD CORRDIOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARINGHOUSE NUMBER: 2017112022

LSA

December 2018

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RESPONSE TO COMMENTS

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARINGHOUSE NUMBER: 2017112022

Submitted to:

San Joaquin County
Public Works Department
1810 East Hazelton Avenue
Stockton, California 95205

Prepared by:

LSA
201 Creekside Ridge Court, Suite 250
Roseville, California 95678
916.772.7450

Project No. MKT1704

LSA

December 2018

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1.0 INTRODUCTION

1.1 PURPOSE OF THE RESPONSE TO COMMENTS DOCUMENT

This report has been prepared to respond to comments submitted on the June 2018 Draft Environmental Impact Report (Draft EIR) for the proposed Grant Line Road Corridor Project (herein referred to as the "Project" or "proposed Project"). The Draft EIR identifies the likely environmental consequences associated with construction and operation of the proposed Project. The evaluation in the Draft EIR found that implementation of the proposed Project would substantially degrade the existing visual character/quality of the site based on changes of foreground views (from agricultural land to road right-of-way) of the site as viewed from existing sensitive receptors. Design and placement of the proposed Project has been considered and multiple alternatives have been considered but ultimately rejected. No mitigation measures exist that would reduce the significant impact the Project would have on the existing visual character and quality of the area; thus, resulting in a significant and unavoidable impact. All other impacts resulting from the proposed Project could be mitigated to a less than significant level with implementation of mitigation measures identified in this Draft EIR and Initial Study (Appendix B of the Draft EIR).

This document provides responses to comments made on the Draft EIR during the public review period and makes revisions to the Draft EIR, as necessary, in response to these comments or to clarify any previous errors, omissions, or misinterpretations of material in the Draft EIR.

1.2 FINAL EIR

This document together with the Draft EIR, will constitute the Final EIR if the County of San Joaquin certifies the Final EIR as complete and adequate under the California Environmental Quality Act (CEQA).

1.3 ENVIRONMENTAL REVIEW PROCESS

According to CEQA, lead agencies are required to consult with public agencies having jurisdiction over a proposed project, and to provide the general public with an opportunity to comment on the Draft EIR.

The Draft EIR was made available for public review in hard copy and online commencing on April 30, 2018 and was distributed to local and State responsible and trustee agencies. The general public and local agencies were advised of the availability of the Draft EIR through public notices mailed to residents in proximity to the Project. The Draft EIR was also posted on the San Joaquin County Department of Public Works website (https://www.sjgov.org/department/pwk/projects/grant-line-road) beginning April 30, 2018. CEQA mandates a minimum 30- or 45-day public comment period on Draft EIRs. The County required a 45 day public comment period, which ended on June 13, 2018. The County held a public meeting on June 12, 2018 at the regularly scheduled meeting of the San Joaquin County Supervisors where members of the public had the opportunity to comment on the Project and adequacy of the Draft EIR. Based on a request by the Board of Supervisors, the County extended the public comment period for 16 additional days, to June 29, 2018, to allow for members

of the public to comment. This extension was notified through the San Joaquin County Department of Public Works website for the proposed Project.

The San Joaquin County Board of Supervisors is anticipated to consider certification of the Final EIR and Project approval on December 11, 2018.

A Statement of Overriding Considerations and Findings of Fact on the EIR has been prepared and will be considered for approval by the San Joaquin County Board of Supervisors along with the Final EIR. The Findings documentation will explain the City's reasons for selecting the Project, or variation of the Project (e.g., as proposed in one of the Project Alternatives) and how each of the significant impacts identified in the Final EIR are addressed. The Statement of Overriding Consideration will explain why the County is willing to accept the significant and unavoidable impact pertaining to an aesthetic/visual resource.

1.4 DOCUMENT ORGANIZATION

This Response to Comments document consists of the following chapters:

- *Chapter 1.0 Introduction:* This chapter discusses the purpose and organization of this document.
- *Chapter 2.0 List of Commenting Agencies, Organizations, and Persons*: This chapter contains a list of agencies, organizations, and persons who submitted written comment or offered oral comments on the Draft EIR.
- *Chapter 3.0 Comments and Response:* This chapter contains reproduction of all comment letters received on the Draft EIR, as well as a transcript of oral comments received on the Draft EIR at the June 12, 2018 San Joaquin County Board of Supervisors Meeting. A response for each CEQA related comment received during the review period is provided. Each response is keyed to its respective comment.
- *Chapter 4.0 Draft EIR Text Revisions:* Corrections to the Draft EIR necessary in light of comments received and response provided, or necessary to clarify any minor errors, omissions or misinterpretations, are contained in this chapter.
- *Chapter 5.0 Report Preparation:* A summary of those involved in report preparation is contained in this chapter.

2.0 LIST OF COMMENTING AGENCIES, ORGANIZATIONS AND PERSONS

Comments on the Draft EIR were submitted to the County during the public review period by the agencies, organizations, and individuals listed below.

2.1 COMMENTS

Letter A: Comment Letter from Bob Harris May 30, 2018

Letter B: Comment Letter from Union Pacific Railroad Company June 13, 2018

Letter C: State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit closeout letter June 14, 2018

Letter D: Public Comments for the Grantline Corridor Project at the June 12, 2018 San Joaquin County Board Meeting (Diane Carnahan, Bob Harris, Mike Sandu, and Phillip Martin)

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3.0 COMMENTS AND RESPONSES

This chapter includes a reproduction of each letter and a transcript of the comments received on the Draft EIR during the public review period and at the San Joaquin County Board Meeting on June 12, 2018. The comments are lettered consecutively. Each comment is labeled with a letter shown in a box at the top of each letter and transcript. Individual comments are numbered consecutively and are annotated in the margin of each letter and transcript.

When cross-referenced in the text, the comment is referred to as "Letter #-#" where the number following the letter refers to the letter which the comment has been labelled, and the number following the hyphen refers to the comment number within that letter. For example, comment "Letter A-8" refers to the eighth comment within "Letter A" submitted by an individual.

Written letters received during the public comment period on the Draft EIR are provided in their entirety in the following pages. A transcript of public comments made during the San Joaquin County Board Meeting on June 12, 2018 is also included.

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Letter A: Comment Letter from Bob Harris May 30, 2018

Letter A

MEMORANDUM

TO; Chris Graham

FROM: Bob Harris

SUBJECT; Comments on DEIR

DATE: May 30, 2018

This memorandum concerns the Draft Environmental Impact Report (DEIR) prepared for the realignment of Grant Line Rd. I represent James Tong owner of a 110.84 acre parcel of land which will be severely impacted by two of the realignment alternatives analyzed in the DEIR. We have reviewed the DEIR and have several comments to make about the document. A-1

On 12/15/17 I commented in regard to the Notice of Preparation (NOP) for the DEIR. (The 30 day review period for the NOP lapsed on 12/8/17 but because I was not aware that the NOP had been issued, you very graciously said you would accept my comments up to 5:00 PM on 12/15/17 if they were transmitted via email.) My comments are included in Appendix A of the DEIR. Those comments also include a map of the Tong property. A-2

As you can see from looking at the map, the northern approximately one half of the Tong property is designated Rural/Residential (R/R) on the San Joaquin County General Plan. Two of the three alternatives analyzed in the DEIR (3A and 4) impact this residential portion of the Tong property (the No Project Alternative does not impact it), yet this fact is never mentioned in the document. A-3
Discussions of land uses adjacent to or within the boundaries of these two alternatives describe agricultural uses but don't once mention that both alternatives impact this residential land use designation. For this reason the DEIR is deficient in its analysis of Aesthetics, Air Quality, Greenhouse Gas Emissions, Land Use and Planning, Noise and Population and Housing. A-4

The northern portion of the Tong property was designated R/R as part of the 2035 General Plan; prior to that update it was designated A/G (General Agriculture). With this change in designation the R/R portion of the Tong property became part of the San Joaquin County community of Banta thereby expanding the residential portion of that community. A-5
The property was recently rezoned from Agriculture to Rural Residential. The next step in the development process for the property is to file a tentative map which could allow the subdivision of the property into as many as 47 individual residential lots. A-6

By ignoring the fact that almost 1,400 lineal feet of the proposed Project (and an even greater length in the case of Alternative 4) will traverse a future residential area rather than agricultural land, the DEIR substantially underestimates the Project's impacts to the above mentioned environmental resource topics. A-7
It is understood that the objectives of the realignment are to alleviate congestion and improve traffic safety but good land use planning should also come into play. However, favoring an alignment which cuts through a corner of the Banta community as opposed to one approximately 440 ft to the south (as suggested in my memorandum of 12/15/17) which would not traverse that community, is not good land planning. A-8
DEIR Alternative 3 is also a better example of land use planning than the proposed Project. The reasons stated in the DEIR for why Alternative 3 was not given further A-9

consideration seem weak. It seems to me Alternative 3 would not require "a significantly larger amount of right-of-way" than the proposed Project. Also, what was the "input from community involvement that required refinement of" Alternative 3?

A-9 Con.

In summary, Mr. Tong requests that the DEIR not be finaled at this time but revised to analyze the alternative described in my memo of 12/15/17. He also requests that Alternative 3 be given the same level of analysis as the proposed Project and Alternative 4.

A-10

Response to Comments

Letter A: Comment Letter from Bob Harris May 30, 2018

Response A-1: The commenter introduces himself as the representative of James Tong, owner of a 110.84 acre parcel of land which will be affected by the Project. The commenter indicates that he has reviewed the Draft EIR and have several comments to make about the Project. As this comment is introductory in nature and does not identify specific comments on the adequacy of the EIR, the comment is noted and no further response is necessary.

Response A-2: The commenter indicates that on 12/15/17 he commented on the Notice of Preparation for the Draft EIR. The commenter indicates that his comment, even though it was past the 12/8/17 NOP comment period, was accepted by the County and included in **Appendix A** of the Draft EIR. This comment is noted and does not require further response as the comment does not pertain to the adequacy of the EIR.

Response A-3: The commenter points out that the parcel (Mr. Tong's property) that is bisected by the proposed Project is designated as Rural/Residential on the San Joaquin County General Plan. The commenter indicates that the alternatives analyzed in the Draft EIR (3A and 4) impact this residential portion of the Tong property and it is never mentioned in the Draft EIR.

It should be noted that the EIR includes Appendix B Initial Study where a discussion of Land Use impacts is provided. This discussion identifies the existing land use and zoning along both Alternative 3A and Alternative 4 and it was determined that impacts to land use would not occur with implementation of either alternative. As such, an analysis on land use was scoped out of the EIR. According to State CEQA Guidelines Section 15125, *"An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."* The baseline conditions for the analysis in this EIR is based on the existing conditions at the time of NOP publication on November 9, 2017. At this time the subject parcel was zoned as General Agriculture; as such, the analysis presented in Section 6.3.6 Land Use and Planning correctly discusses the potential impacts the Project would have due to crossing parcels that are zoned General Agriculture. Furthermore, at the time of NOP publication the subject parcel was occupied by agricultural uses. On May 8, 2018 the San Joaquin County Board of Supervisors approved a zoning change on the subject parcel, allowing the owner of the parcel to change a portion of his parcel from General Agriculture zoning designation to Rural/Residential zoning designation. Even if this zoning change had occurred prior to the NOP publication, the on-ground situation would have been the same in that the parcel would have still been occupied by agricultural uses and not residential uses. As such, the EIR correctly analyses impacts to this zoning designation per State CEQA Guidelines Section 15125, and revisions to the EIR are not required.

Response A-4: The commenter indicates that since the Draft EIR does not discuss impacts to rural residential; as such, the commenter indicates there is a deficient analysis in the Aesthetics, Air Quality, Greenhouse Gas Emissions, Land Use and Planning, Noise, and Population and Housing

sections of the EIR. Please refer to **Response A-3**. At the time of NOP publication, the subject property was zoned General Agriculture, and on-ground conditions included agricultural uses. As such, based on the analysis conducted under the baseline conditions, the analysis of the Draft EIR is sufficient, and revisions to the EIR are not required.

Response A-5: The commenter indicates that the northern portion of the subject parcel was designated as R/R as part of the 2035 General Plan and prior to adoption of that plan the subject property was designated A/G. The commenter indicates that with this change in designation that the subject property became part of Banta thereby expanding the residential portion of that community. Please refer to **Response A-3**. At the time of NOP publication, the subject property was zoned General Agriculture, was not within the community of Banta, and on-ground conditions included agricultural uses. As such, based on the analysis conducted under the baseline conditions revisions to the EIR are not required.

Response A-6: The commenter notes that the property was recently rezoned from Agriculture to Rural Residential and that the next step in the development process is to file a tentative map for the property which could allow the subdivision of the property into as many as 47 individual residential lots. As noted in **Response A-3** above, the zoning change of the subject parcel occurred after the NOP for the EIR was published; as such, the baseline analysis for the EIR takes into consideration the zoning of the parcel prior to the zoning change approval. The filing of a tentative map for the subject parcel to allow for a future subdivision is not relevant to the adequacy of the analysis in the EIR. As such, based on this response, revisions to the EIR are not required.

Response A-7: The commenter indicates that the Draft EIR underestimates the Project's impacts to various resource topics since it does not disclose that 1,400 lineal feet of the Project traversing a future residential area rather than agricultural land. As discussed above in **Response A-3**, the EIR considers the baseline conditions of the Project area as they were when the NOP for the EIR was published. The subject parcel, at the time of NOP Publication, was zoned as agricultural and was occupied by agricultural uses. The zoning change of the subject property was approved after the NOP for the EIR was published and there was no way of knowing that the zoning would be changed to a rural residential use. As the rezoned portion of the parcel has not been entitled for development of rural residential uses, it is anticipated that the parcel will remain in agricultural production beyond the year when the Project will become operational (in 2022). This assumption is based on the length of the entitlement and environmental clearance process (2 to 3 years) needed to approve and develop of a residential Project in the County. Based on this, the analysis presented in the EIR is accurate and sufficient based on baseline conditions at the time of NOP publication.

Response A-8: The commenter indicates that favoring an alignment which cuts through a corner of the Banta community is not favorable and that, as the commenter suggested in the NOP, an Alternative 440 feet to the south of the proposed Project should also be analyzed in the environmental document. Alternative 3, analyzed in the EIR, is similar to the alignment the commenter requests to be studied in the EIR as an additional alternative. Alternative 3 is approximately 600 feet south of the proposed Project and would be located on similar land (and the same parcel). As discussed in Section 5.3.3 of the EIR, the County along with the Project engineer, received input from the community that required refinement of the alignment associated with Alternative 3. This alternative also required a significantly larger amount of right-of-way from

several large parcels. As such, Alternative 3 was deemed infeasible and not further considered for the proposed Project. As, the commenter's suggested alignment is very close (within 440 feet) of Alternative 3, the EIR would not warrant consideration of this additional alternative as impacts and concern would be similar to that of Alternative 3. As such, no revisions are necessary to the environmental document.

Response A-9: The commenter expresses their opinion that Alternative 3 is a better example of land use planning than the proposed Project. However, the commenter does not provide evidence as to how Alternative 3 is a better example when compared to the proposed Project. The EIR provides analysis of land use impacts associated with implementation of the proposed Project that are found to be less than significant. The commenter also expresses their opinion that Alternative 3 would not require "a significantly larger amount of right-of-way" then the proposed Project. Finally, the commenters asks what was the "input from community involvement that required refinement of Alternative 3". The EIR discusses the alternatives that were considered and provides reasons as to why these alternatives were rejected and did not move forward. Alternative 3 was rejected from further consideration due to community feedback received during the March 5, 2015 Open House Meeting #2 held by San Joaquin County for the Project. Specifically, the public was concerned with the amount of land that would be acquired and the County indicated that such acquisition would be cost prohibitive. For these reasons, Alternative 3 was deemed financially infeasible and was removed from further consideration for the proposed Project. No revisions to the EIR are necessary based on this comment.

Response A-10: The commenter concludes and reiterates that the EIR should not move forward until the Alternative the commenter suggested and Alternative 3 is included in the EIR. As stated under **Response A-8**, Alternative 3 was presented March 5, 2015 Open House Meeting #2. Feedback from the public indicated concern with Alternative 3 requiring the acquisition of land. Specifically, Alternative 3 would require full parcel acquisitions that would be cost prohibitive for the Project to move forward which deemed Alternative 3 as financially infeasible. As such, Alternative 3 was not carried through and analyzed in this EIR. Alternative 3 is very similar to the Alternative the commenter suggests be analyzed in the EIR; however, the commenter's Alternative is approximately 440 feet further south than Alternative 3. The commenter's alternative is similar enough to (located in the same general vicinity) Alternative 3 that similar concerns about whole parcel acquisition would also deem this alternative as financially infeasible. As such, neither Alternative 3 nor the commenter's alternative warrants analysis in the EIR. No revisions to the EIR have been made based on this comment.

Letter B: Comment Letter from Union Pacific Railroad Company June 13, 2018

Letter B

BUILDING AMERICA®

June 13, 2018

VIA E-MAIL
E-Mail: GrntLnEIRComments@lsa.net

Chris Graham
LSA
201 Creekside Ridge Court, Suite 250
Roseville, CA 95678

Re: Union Pacific Railroad Company's Comments to the Draft Environmental Impact Report for the Proposed Grant Line Road Corridor Project

Dear Mr. Graham:

Union Pacific Railroad Company ("UP") appreciates this opportunity to comment on the April 2018 Draft Environmental Impact Report ("DEIR") for the Grant Line Road Corridor Project ("Project"), for which San Joaquin County ("County") is the lead agency. This letter is intended to supplement the issues raised in UP's December 15, 2017 letter commenting on the EIR Notice of Preparation ("NOP"). At the outset, UP would like to emphasize that the concerns regarding the creation of a new at-grade railroad crossing raised in our NOP comment letter were not addressed in the DEIR. UP requests: (1) that the County update the DEIR to study and mitigate impacts resulting from inevitable blockages of the proposed at-grade crossing; (2) that the County include a revised or new proposed Project that will include a grade-separated railroad crossing for the proposed four-lane road; and (3) that the County explicitly acknowledge and adhere to UP's operational and design standards specific to highway-rail grade separation and crossing safety.

B-1

B-2

UP appreciates the County's objective to alleviate the large volumes of vehicle and truck traffic along the Grant Line Road/Kasson Road corridor and increase public safety, and is supportive of the proposed Project as a whole. However, the County's proposed Project (Alternative 3A) and Alternative 4 overlook material environmental and safety consequences that will result from the Project's anticipated railroad crossing plans. Furthermore, the County has failed to include any alternative that would require a grade-separated crossing as requested by both UP and the California Public Utilities Commission in earlier comments. Indeed, the County has failed to include any evaluation of such a crossing.

B-3

UNION PACIFIC RAILROAD COMPANY
LAW DEPARTMENT
10031 Foothills Boulevard, Suite 200
Roseville, CA 95747

David M. Pickett
Senior General Attorney

P (916) 789-6218
F (916) 789-6227
dmpicket@up.com

UP's Tracy Railyard is located immediately west of the existing Banta Road and 6th Street at-grade crossing and only a few hundred feet from the Project's new proposed at-grade crossing location where the new four-lane Grant Line Road is anticipated. The opening of a new at-grade crossing where currently no large road exists will significantly impact and impair rail operations, public safety, and traffic functionality. As such, UP has an interest in the Project alternatives, transportation impacts, and mitigation measures analyzed in the Project's DEIR specific to the proposed new railroad crossing. B-4

As discussed in UP's NOP comment letter and described in detail below, the Project's proposed construction of a new at-grade railroad crossing at the new expanded Grant Line Road is both infeasible and hazardous. Grade separation must be provided at the new intersection to avoid significant safety and traffic impacts. Therefore, UP opposes the proposed Project and Alternative 4 to the extent that they impact or potentially impact UP rail infrastructure and operations, absent revising the Project design to provide a grade separation at the new four-lane Grant Line Road and UP railroad tracks. B-5

I. UP owns and operates critical rail lines within the Project area, which will be significantly affected by the proposed Project. Therefore, environmental analysis of impacts to rail operations and vehicle traffic as a result of the proposed Project is necessary under CEQA.

B-6

UP owns and operates a common carrier railroad network in the western half of the United States, including the State of California. Specifically, UP owns and operates main rail lines connecting San Francisco and Sacramento and points east and north, and to Los Angeles and points east and southeast. UP is the largest rail carrier in California in terms of both mileage and train operations. UP's rail network is vital to the economic health of California and the nation as a whole and its rail service to customers along the I-5 and Tracy corridor is crucial to the future success and growth of the County's economy.

UP met with County representatives several years ago about the potential Project, and at that time expressed grave concerns with the Project's anticipated new at-grade crossing at Grant Line Road for several reasons. The existing Banta Road at-grade rail crossing directly east of UP's rail yard experiences a vehicle volume of less than 1,000[1] average daily traffic ("ADT"[2]). In both the proposed Project and Alternative 4, the existing at-grade railroad crossing at Banta Road will be closed and a new at-grade B-7

[1] United States Department of Transportation, Federal Railroad Administration, U.S. DOT Crossing Inventory Form, DOT Crossing Inventory Number 753051P, June 5, 2017.
[2] Average Daily Traffic ("ADT") is a measurement of a roadway's average daily traffic over a 24-hour time period.

railroad crossing at the new four-lane Grant Line Road will be constructed in order to create a more direct route to the industrial area of Tracy and Interstate 5. Grant Line Road currently experiences approximately 10,700 ADT and it is estimated that nearly 21,000-27,000 vehicles will use the road by the year 2035.[3] Moreover, it is anticipated that the Project will redirect approximately 18,000 ADT over the new alignment. Notwithstanding these projections, and the fact that the Project proposes a new rail crossing at a location where no major road currently exists, no grade separation has been proposed or even analyzed in the DEIR.

B-7 Con.

In addition to the significant number of vehicles expected to use the new at-grade crossing at Grant Line Road, the County must also consider the probability that the crossing will experience blockages due to rail operations. Ordinary operations at the Tracy Railyard already routinely block the Banta Road/6th Street crossing. Traffic at that lightly-used crossing is able to avoid delays by taking other nearby routes. However, traffic on a major arterial route with multiple lanes will not have that flexibility. Although UP cannot foresee how often or for how long Grant Line Road may be blocked, the County must assume that blockages will occur because of routine and necessary rail operations. Avoiding those conflicts is a further compelling reason to grade-separate any new crossing.

B-8

The County should also understand that railroad operations will not be able to change to avoid traffic conflicts at a new crossing at Grant Line Road. Unlike road infrastructure, railroads are fixed systems that cannot easily accommodate detours or obstructions. Each component of the rail network is critical to the overall fluidity and velocity of rail operations. Disruptions in one location can cause a cascading series of delays that can impact operations and communities throughout the network. Any disruption of these operations can slow the processing of freight, which can result in increased truck queuing time and congestion on area streets, increased idling emissions for trucks and locomotives, intensified use of alternative routes with increased noise and emission impacts and increased congestion along the alternative routes, among other things. All of these impacts should have been analyzed in the DEIR; none were.

B-9

Additionally, the DEIR lists at least two transportation impact thresholds based on Appendix G of the CEQA Guidelines that are implicated by the at-grade crossing. Transportation Threshold D states that a project may create significant impacts if the project would "[c]onflict with an applicable plan, ordinance or policy establishing

B-10

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[3] United States Department of Transportation, Federal Railroad Administration, U.S. DOT Crossing Inventory Form, DOT Crossing Inventory Number 753048G, May 1, 2017. *See also* Michael Langley, *County Plans Four-Lane Bypass Around Banta*, GOLDEN STATE NEWSPAPERS: TRACY PRESS NEWS. February 19, 2016. *Available at* http://www.goldenstatenewspapers.com/tracy_press/news/county-plans-four-lane-bypass-around-banta/article_7541a544-d6a6-11e5-9814-bfe4bea8dec0.html.

measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation . . . including but not limited to intersections [and] streets . . . "[4] Transportation Threshold D states that a project may create significant impacts if the project would "[s]ubstantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections)."[5] The Project implicates both of these thresholds, as it will conflict with an applicable CPUC policy regarding at-grade crossings (described below) and may substantially increase hazards resulting from the placement of the at-grade crossing on a busy four-lane road. Despite listing these two transportation impact thresholds, the DEIR includes no study of traffic impacts resulting from blockages at the proposed at-grade crossing. Nor does it examine or disclose the advantage that a grade separation would offer.

B-10 Con.

The California Environmental Quality Act ("CEQA")[6] requires that project review must encompass all components of the activity being approved, including reasonably foreseeable consequences of the proposed approval and components that are an integral part of the project. CEQA Guidelines § 15378[7]; *see, e.g., Bozung v. Local Agency Formation Comm'n*, 13 Cal. 3d 263, 279– 81, 289 (1975); *Laurel Heights Improvement Ass'n v. Regents of the Univ. of Cal.*, 47 Cal. 3d 376, 395– 398 (1988) (*Laurel Heights I*); *No Oil, Inc. v. City of Los Angeles*, 196 Cal. App. 3d 223, 237 (1987). Therefore, environmental analysis of all potential rail construction and operational impacts as a result of the proposed Project and alternatives—including those resulting from an at-grade or grade-separated crossing—should be included in a revised DEIR for the Project.

B-11

II. The closure or addition of rail crossings is subject to the approval of the California Public Utilities Commission. The DEIR must be revised to acknowledge and study the impacts of this required approval.

B-12

The safety of rail crossings is a subject of statewide concern and falls under the jurisdiction of the California Public Utilities Commission ("CPUC").[8] The CPUC must approve any new crossings (at-grade or grade separated) or modification of existing rail crossings. The CPUC's policy on eliminating at-grade crossings is stated in its General

[4] DEIR at 4-105.
[5] DEIR at 4-106.
[6] Cal. Pub. Res. Code §§ 21000 *et seq.*
[7] The CEQA Guidelines are codified at California Code of Regulations Title 14 § 15000 et seq.
[8] *Northwestern Pac. R.R. Co. v. Superior Court*, (1949) 34 Cal.2d 454, 458, and *City of San Mateo v. Railroad Com.* (1937) 9 Cal.2d 1, 9-10. *See also*: "Under [Cal. Pub. Util. Code §§] 1201 and 1202 authorization is required for the creation of any grade crossing of a railroad and any public road or street. The Commission has exclusive power to prescribe terms of installation, use, and protection of crossings; to relocate or abolish crossings by physical closing; to require a separation of grades, and to apportion costs between railroads, the state, and political subdivisions [footnote omitted]." (Roderick B. Cassidy, *Public Utility Regulation in California*, Commentary to the Public Utilities Code, 1954, p. 15).

Order 75-B, § 2: "As part of its mission to reduce hazards associated with at-grade crossings, and in support of the national goal of the Federal Railroad Administration (FRA), the Commission's policy is to reduce the number of at-grade crossings on freight or passenger railroad mainlines in California." Any applicant requesting a new at-grade crossing must satisfy specific and rigorous findings to overcome a strong presumption by the CPUC that all new crossings should be grade-separated.[9]

B-12 Con.

The DEIR failed to address or study the requirement to obtain approval for the proposed new at-grade rail crossing from the CPUC. The DEIR's table of "Required Permits and Approvals" merely includes a placeholder stating "Document approval(s) needed for new crossing here."[10] Despite NOP comment letters from UP and the CPUC raising this issue, the DEIR includes no other mention of the required CPUC approval. UP requests that the County revise the DEIR to study the required CPUC approval. Additionally, the County should include in the DEIR modified or new alternatives that include a grade separation for the crossing of the proposed four-lane Grant Line Road and the UP railroad tracks.

B-13

III. The proposed Project should be considered in light of federal initiatives and UP standards designed to reduce the number of at-grade crossings to enhance rail safety.

B-14

In addition to the CPUC's highway-rail crossing jurisdictional authority and oversight, the United States Department of Transportation has a goal of reducing the number of at-grade crossings through consolidation, grade separation, elimination, and restriction on the number of new crossings constructed. In line with this goal, UP, other railroads, the FRA, and most states encourage communities to carefully consider all alternatives, including grade separations, as opposed to the creation of new at-grade rail crossings.

UP endorses the federal initiative to reduce the number of at-grade crossings and has developed comprehensive operational and rail standards specific to highway-rail grade separation and crossing safety.[11] As part of these standards, UP asks for multiple public grade crossings to be closed as a condition of creating a new crossing. Specifically, proposals for establishing a new public crossing should identify three or more crossing closures for each new crossing opened unless there are contrary engineering or rail operation considerations. For the sake of safety, every reasonable effort should be made to provide access without creating new at-grade crossings. In

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[9] *See* California Public Utilities Commission Rules of Practice and Procedure Rule 3.7(c)(2); Cal. Pub. Util. Code § 1201(c); *see also In re Exposition Metro Line Const. Auth.*, Interim Opinion, Application 06-12-005, at 17, Decision 07-12-028 (Dec. 2008); *In re City of San Diego*, 2003 WL 23104223, at *5 (Cal. PUC Dec. 4, 2003, Decision 03-12-018).

[10] DEIR at 3-11.

[11] *See* https://www.up.com/real_estate/roadxing/industry/new_conversion/index.htm.

addition, as a matter of operational efficiency, some locations will not be approved for crossings because of railroad engineering and operational considerations. UP asks the County to explicitly recognize and acknowledge these standards as they relate to the proposal to close an existing rail crossing and add a new one.

B-14 Con.

Thank you for the opportunity to express our views. Please forward these comments to appropriate representatives at the County before any further action is taken with respect to proposed Project.

B-15

Sincerely,

DAVID M. PICKETT

DMP/jlg

Response to Comments

Letter B: Comment Letter from Union Pacific Railroad Company June 13, 2018

Response B-1 and B-2: San Joaquin County (County) deposited $25,000 with Union Pacific Railroad (UPRR) as required by UPRR for UPRR's efforts related to the Project, specifically, including UPRR's reviews of the Project alternatives, evaluate potential impacts to UPRR's operations, and any mitigations for such. As such, on February 19, 2016, the County's consultant, Mark Thomas & Company (MTC) requested specific information regarding UPRR operations to help them evaluate the impacts of the proposed Project on the existing operations of UPRR. Specifically, MTC requested the following information: frequency of existing Banta Road crossing blocked by train activity; typical/average duration of the blockage; and any specific time(s) of the day or time windows blockages occur. This information is crucial to determine if a Grade Separation (GS) is warranted. To date, UPRR has not provided the requested information. If and when a GS is justified it will be designed and built per the State and Federal standards.

Consequently, this Environmental Impact Report (EIR) is unable to address UPRR's comments raised in its December 15, 2017 letter response to the Notice of Preparation and the supplemental letter comments dated June 13, 2018, to the Draft EIR. Regardless, the County remains committed to working with UPRR to address its concerns, and is agreeable to performing additional analysis as part of the Project's final design effort to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-3: See comments in B-1 and B-2. In an attempt to determine the existing train activity at the current Banta Road crossing, the County placed a video camera. Per the video camera recordings, train activity appears to be extremely low. However, the County is committed to working with UPRR and will conduct additional analysis to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-4: The proposed new alignment crossing will be east of the existing Banta Road crossing, and thereby increase the distance from the rail yard and provide benefit for rail yard activity. Additionally, the County notes, per discussions with UPRR staff, the Sixth Street crossing in Banta is proposed to be closed along with the existing Banta Road crossing.

Response B-5: UPRR claims that the new expanded Grant Line Road is both infeasible and hazardous. The County respectfully requests UPRR provide data/analysis to support this claim for the County's review and consideration. The County remains committed to working with UPRR and will conduct additional analysis to determine the potential need for a GS on the proposed new alignment.

Response B-6: As noted previously, specific train related data is needed, including: number of trains per day; number of cars per train; rail yard activity detail; as well as pass through trains and actual assimilations of train cards to form a train.

Response B-7: Per meetings between County and UPRR staff, discussions focused on the closure of existing crossing to new crossing ratio – specifically that UPRR staff were agreeable to a 2:1 ratio (i.e., two closures for one new crossing). Discussions also included potentially moving the yard operations further west to help minimize blockage of the proposed new crossing. UPRR was to evaluate these options and come up with mitigations. As previously noted, the County deposited $25,000 with UPRR to help offset the cost of these efforts.

Response B-8: Please refer to **Response B-3**. The County placed a camera at existing Banta Road Crossing to determine existing train activity on the UPRR track. The County is committed to working with UPRR and will conduct additional analysis to determine the potential need for a GS on the proposed new alignment.

Response B-9: The County requested from UPRR additional railroad operational information where the new Grantline Road would cross the UPRR tracks. To date, the additional information from UPRR has not been obtained which limits the analysis that can be conducted in the DEIR to what is currently presented in the Draft EIR. The County remain committed to working with UPRR and will conduct additional analysis to determine the potential need for a GS and related impacts on the proposed new alignment.

Response B-10: Please refer to Response B-9. The County has requested additional information from UPRR to conduct further analysis regarding the potential need for a GS on the proposed new alignment. The County has not received the additional data for the UPRR operations and therefore is limited to the analysis that can be conducted in the Draft EIR. The County is committed to working with UPRR and will conduct additional analysis to determine the potential need for a GS as data requests to UPRR are fulfilled.

Response B-11: Please refer to Responses B-1 and B-2. MTC requested the following information: frequency of existing Banta Road crossing blocked by train activity; typical/average duration of the blockage; and any specific time(s) of the day or time windows blockages occur. This information is crucial to determine if a GS is warranted. To date, UPRR has not provided the requested information. The County remains committed to working with UPRR to address its concerns, and is agreeable to performing additional analysis as part of the Project's final design effort to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-12: Please refer to Responses B-1 and B-2. Data was requested of UPRR to complete analysis of the needs for a HS along the proposed new road alignment. To date this information has not been received; as such, analysis cannot be completed. The County remains committed to working with UPRR to address its concerns, and is agreeable to performing additional analysis as part of the Project's final design effort to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-13: San Joaquin County (County) deposited $25,000 with Union Pacific Railroad (UPRR) as required by UPRR for UPRR's efforts related to the Project, specifically, including UPRR's reviews of the Project alternatives, evaluate potential impacts to UPRR's operations, and any mitigations for

such. To date, the County has not received enough information from UPRR related to the Project to complete the analysis that UPRR and CUPC is requesting in the Draft EIR. This includes information on the type of CPUC approvals required so the County can implement the Project. The County remains committed to working with UPRR to address its concerns, and is agreeable to performing additional analysis as part of the Project's final design effort to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-14: Per meetings between County and UPRR staff, discussions focused on the closure of existing crossing to new crossing ratio – specifically that UPRR staff were agreeable to a 2:1 ratio (i.e., two closures for one new crossing). UPRR was to evaluate these options and come up with mitigations. The County remains committed to working with UPRR to address its concerns, and is agreeable to performing additional analysis as part of the Project's final design effort to determine the potential need for a GS on the proposed new alignment. The results of any additional analysis will be included in a supplement to the Final EIR.

Response B-15: This is a closing comment to the UPRR comment letter thanking the County for the opportunity to comment on the Draft EIR. No further response is required and revisions to the EIR are not warranted based on this comment.

Letter C: State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit closeout letter June 14, 2018

Letter C

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

June 14, 2018

Jeffrey Levers
San Joaquin County
1810 East Hazelton Avenue
Stockton, CA 95205

Subject: Grant Line Road Corridor Project
SCH#: 2017112022

Dear Jeffrey Levers:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on June 13, 2018, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

C-1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
1-916-445-0613 FAX 1-916-558-3164 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2017112022
Project Title Grant Line Road Corridor Project
Lead Agency San Joaquin County

Type EIR Draft EIR

Description The Grant Line Road/Kasson corridor is experiencing large volumes of both vehicle and truck traffic due to the growth of Tracy's population and industrial area in the northeastern part of the city. The community of Banta is located near the middle of the corridor and is at the epicenter of an increase in traffic flows and accidents. Banta is a rural community consisting of residential housing, an elementary school, commercial buildings, and a fire station. West of Banta, the city of Tracy has widened Grant Line Rd to a 6-lane thorough fare. Grant Line Rd is a two-lane road east of the city's boundary near Chabot Court extending to the intersection with West 11th St.
The county is developing a comprehensive corridor plan that addresses traffic operations for both the near-term and the long-term. During project development, four alternative roadway alignments were evaluated that address the project goals. The county selected Alternative 3A and Alternative 4 for detailed environmental review and for traffic studies.

Lead Agency Contact

Name Jeffrey Levers
Agency San Joaquin County
Phone 209-468-3000 **Fax**
email
Address 1810 East Hazelton Avenue
City Stockton **State** CA **Zip** 95205

Project Location

County San Joaquin
City Tracy
Region
Lat / Long 37° 45' 022" N / 121° 22' .457" W
Cross Streets Grantline Rd/Chabot Court to 11th St/Bird Rd intersection
Parcel No. mult parcels
Township **Range** **Section** **Base**

Proximity to:

Highways 205
Airports
Railways UPRR
Waterways Tom Paine Slough
Schools Banta ES
Land Use LU: Ag/General; Residential/rural; industrial/limited; Z: Gen ag; warehouse industrial

Project Issues Agricultural Land; Air Quality; Biological Resources; Noise; Traffic/Circulation; Aesthetic/Visual; Archaeologic-Historic; Cumulative Effects; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Central Valley Flood Protection Board; Department of Fish and Wildlife, Region 2; Department of Fish and Wildlife, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; Native American Heritage Commission; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Sacramento); Delta Protection Commission; Delta Stewardship Council; Public Utilities Commission

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 04/30/2018 ***Start of Review*** 04/30/2018 ***End of Review*** 06/13/2018

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to Comments

Letter C: State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit closeout letter June 14, 2018

Response C-1: The commenter acknowledges that the public review of the EIR complies with the State Clearinghouse review requirements pursuant to CEQA. The commenter also indicates that no state agencies submitted comments on the Project. This comment is noted and revisions to the EIR are not necessary based on the subject of this comment.

Letter D: Public Comments for the Grantline Corridor Project at the June 12, 2018 San Joaquin County Board Meeting (Diane Carnahan, Bob Harris, Mike Sandu, and Phillip Martin)

PUBLIC COMMENTS FOR THE GRANTLINE CORRIDOR PROJECT AT THE JUNE 12, 2018 SAN JOAQUIN COUNTY BOARD MEETING

1. **Diane Carnahan (with husband Al)**

Hi, my name is Diane Carnahan and this is my husband Al, and we are also known as AP number 25012003 as well as sensitive receptor number 4 and we live at 5750 West F Street. We live in Banta, CA just outside of Tracy. We bought 4.4 acres in 2002 and designed and built our home (my husband is a contractor) in 2003. At that time, we chose to live near a train track as well as a dairy farm which has since closed down, thank goodness. And, the, we are here to speak briefly about the Draft Environmental Impact Report for the Grantline Road Corridor Project. I'm not sure if you've yet had a chance to review the 521-page draft report, but we are here today to have you see our face, put a face on this project. Behind this project are people, homes, properties, and livelihoods. The impact on our community, particularly my husband and I, is great. This project is going to go through our property. Several acres or our property as well as directly behind, so the scenic vistas that we look out on from our backyard, as well as when I'm doing dishes in the kitchen, I will now see a wall and a barrier to help block the noise, the traffic, the light, instead of the orchard that is surrounding our property. We will actually be affected on three sides, actually all four sides. There in the Environmental Impact Report it shows that we have a barrier that is going to be built by the county on two sides, but not on one of the sides that also will be affected as well as the increased traffic on the quiet street that we live on for F Street. So we have a very important decision to make as well as you will over these next several months. As you take a further look at the Grantride, Grantline Road Corridor Project, on approving it or not, but it's important that you know that there are people that are affected by this decision. So we will be requesting a meeting with LSA and Public Works and hopefully Supervisor Elliot to discuss some of the questions that we have. Thank you very much.

D-1 D-2 D-3 D-4 D-5

2. **Bob Harris**

Good Afternoon Chairman Elliot, members of the Board, I'm Bob Harris, I represent a property owner, James Tong whose property would be severely impacted by two of the alternatives that are analyzed in the EIR the DEIR. His property is located immediately south east of the community of Banta. The northern, it's a 110 acre, well he owns about 115 acres altogether in that area, but the northern 50 acres of that property, around 50 acres of that property was recently, as part of the general plan update, was redesignated to rural residential. The DEIR does not recognize that. Both Alternative 3A and 4 completely cut through the entire width of his property one going south, southeast, and the other going northeast. And the EIR doesn't recognize the rural residential zoning and designation on the property. And, therefore it's analysis of the impacts having to do with land use and planning, noise, air pollution, that sort of thing, is deficient, and makes the DEIR deficient in our estimation. And because the rural residential zoning allows lots as small as actually as small as 1 acre, but generally 2 acres in size, where the agricultural zoning that was analyzed in the EIR talked about in the EIR is a minimum lot size of 40 acres. So there is a semi-urban land use designation that isn't recognized in the EIR; therefore, the, the certain of the

D-6 D-7 D-8 D-9

topics, Environmental Topics in the DEIR don't analyze that correctly and the document is deficient in that respect. And we think that it should be revised to take that new zoning in to accommodation. Also we don't understand, and the EIR doesn't talk about it, why the original Alternative 3 was not considered for intense analysis in the DEIR. It seems to me it's the same, basically the same thing as Alternate 3A except it's a few hundred feet farther south and would not impact the rural residential portion of Mr. Tong's property. So we would ask that the DEIR be revised to take this information into consideration. Yes I have, and it is in, no it's not in the DEIR, but yes, we have submitted a letter and it was accepted. I've discussed that with the consultant.

D-9 Con.

D-10

3. **Mike Sandu 3972 West (unintelligible) Road, Tracy, California.**

I am actually not against anything here, but my heart's still beating fast, I don't know why. I'm never against any progress. What I would, the community need to do, it's gotta happen, it's gotta happen. All the problems is my albums (almonds?) cut in to four pieces in this exit. It doesn't matter which Alternate you use, they're affected. So a couple of the places because my piece can be cut into four. I'm at the Bird Road and 11 Street. So the way it comes in and then you gotta cut into Bird Road it affects and make cuts about four places, my piece, and a couple of those pieces can be so small, I can't even farm those. So I hope that, basically, the County realizes that make those in to separate parcels because I can't farm those, maybe somebody can put small house and live on it, but I shouldn't be the one paying for all those splitting the parcels because it's a bigger parcel so I just request that the County recognize that. That's all and I have no problem with progress.

D-11

D-12

D-13

4. **Philip Martin**

Good Afternoon, My name is Philip Martin, a farmer in the Tracy area. My concern right now with this plan, is the restriction of traffic going in to Banta, specifically agricultural equipment. This new alignment and the restrictions are going to make it virtually impossible for farmers to get their equipment through Banta and north of Banta on California out into the areas out that way. So, anything that can be designed to allow that would be helpful whether it be maybe not totally blocking the entrance in there, maybe restricting it during certain times of day. Which are the problem areas would be helpful, but it's difficult to move large agricultural equipment through roundabouts and barriers. Thank you.

D-14

Response to Comments

Letter D: Public Comments for the Grantline Corridor Project at the June 12, 2018 San Joaquin County Board Meeting (Diane Carnahan, Bob Harris, Mike Sandu, and Phillip Martin)

Diane Carnahan

Response D-1: The commenter introduces her husband and herself and provides a brief history of their home purchase near the proposed Project. The comment is noted. As the comment does not pertain to the adequacy of the EIR, no revisions to the environmental document are needed, and no further response to the comment is needed.

Response D-2: The commenter indicates they are present to speak about the EIR and to indicate that there are people, homes, properties, and livelihoods that will be affected by the Project. The commenter also notes that the Project goes through their property. The comment is noted. As the comment does not pertain to the adequacy of the EIR, no revisions to the environmental document are needed. The parcel acquisition, compensation or easement process will be completed by the County at conclusion of the environmental clearance process and prior to Final Design of the proposed Project. No further response to the comment is needed.

Response D-3: The commenter indicates that Project components (i.e., barriers to reduce impacts associated with noise, traffic, and spill-over light from headlights) will obscure scenic vistas (orchards) on all four sides of their property as viewed from their residence.

Section 4.4 of the EIR discusses impacts to "close-in" scenic vistas as viewed from nearby sensitive receptors. The EIR takes into account that the County considers close-in views of agricultural land as scenic vistas and also considers such impacts based on public outreach (see impact discussion under Impact Threshold AES-A). Due to potential noise impacts (please see impact discussion under Section 4.8 Impact Threshold NOI-3) as well as light spill-over impacts from vehicle headlights, barriers at certain impacted sensitive receptors would be required. As the required barriers would obscure some of the sensitive receptors close-in views of the scenic vistas, and no feasible mitigation measures are available to reduce such an impact, the EIR concludes that impacts would be significant and unavoidable on "close-in" views for agricultural land. A Findings and Overriding Considerations discussion has been included as part of this Final EIR to justify this significant and unavoidable impact. As implementation of the Project would alleviate traffic through Banta and improve safety conditions along the Grantline Road Corridor, such benefits and objectives of the Project outweigh the significant and unavoidable impact to close-in views for these sensitive receptors.

It should be noted, that the commenter indicates that views will be obstructed on all "four sides" of their property; however, as shown in **Figure 8** of the EIR, the location of the barriers for SR-4 are on two sides of the property and the locations depicted are "estimations" as to where such barriers would be located. Furthermore, Mitigation Measure NOI-3, does not dictate exact locations of the barriers, but provides the dimensions and noise reduction requirements to ensure that noise levels generated by the proposed Project are at or below County standards. As such, the County would

have flexibility and work with the homeowner in exact locations where such barriers would be placed. Based on this response no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-4: The commenter notes that the EIR shows noise barriers on two sides of their property and questions why none are located on one of the sides of their property that also will be affected as well as the from increased traffic on F Street.

The EIR, in Section 4.8 Noise and Vibration, analyzes potential noise impacts to sensitive receptors based on operation of the proposed Project. In order to reduce operational noise levels to nearby sensitive receptors, the County, as required by Mitigation Measure NOI-4, will install noise barriers at the parcel lines of sensitive receptors that would be most impacted by increased noise. This mitigation measure does not dictate the exact location of the barriers along the parcel lines of the affected receptor; as such, flexibility of the County to work with the owners of the sensitive receptors will occur to ensure noise levels are decreased to at or below County standards. Based on the amount of traffic that would be generated by the Project that would use F Street (nominal because F Street will not provide cut through access and will serve the existing residential neighborhood northeast of the proposed Project) near the sensitive receptors, it was determined that barriers would not be required to shield noise generated from traffic on F Street. Furthermore, SR-4 is set far enough back from F Street that any noise increases generated by Project traffic would be nominal and would not warrant mitigation. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-5: The commenter requests that the Supervisors keep in mind that there are people that will be affected by the decision of Project approval. The commenter notes that they will be requesting a meeting with the County regarding further questions. This comment is noted. As the comment does not pertain to the adequacy of the EIR, no revisions to the environmental document are needed, and no further response to the comment is needed.

Bob Harris

Response D-6: The commenter introduces himself as the representative of a parcel owner that will be impacted by two of the alternatives that are analyzed in the EIR. The commenter identifies the location of the property as being immediately southeast of the community of Banta. This comment is noted. As the comment does not pertain to the adequacy of the EIR, no revisions to the environmental document are needed, and no further response to the comment is needed.

Response D-7: The commenter indicates that a portion of the parcel was redesignated to rural residential and that the EIR does not recognize this. Additionally, the commenter indicates that the EIR doesn't recognize the rural residential zoning and designation of the property.

Please refer to **Response A-3**, discussed above. It should be noted that the EIR includes Appendix B Initial Study where a discussion of Land Use impacts is provided. This discussion identifies the existing land use and zoning along both Alternative 3A and Alternative 4 and it was determined that impacts to land use would not occur with implementation of either alternative. The baseline conditions for the analysis in this EIR is based on the existing conditions at the time of NOP

publication on November 9, 2017. At that time the subject parcel was zoned as General Agriculture; as such, the analysis presented in Section 6.3.6 Land Use and Planning correctly discusses the potential impacts the Project would have due to crossing parcels that are zoned General Agriculture. Furthermore, at the time of NOP publication the subject parcel was occupied by agricultural uses. On May 8, 2018 the San Joaquin County Board of Supervisors approved a zoning change on the subject parcel, allowing the owner of the parcel to change a portion of his parcel from General Agriculture zoning designation to Rural/Residential zoning designation. Even if this zoning change had occurred prior to the NOP publication, the on-ground situation would have been the same in that the parcel would have still been occupied by agricultural uses and not residential uses. As such, the EIR correctly analyses impacts to this zoning designation per State CEQA Guidelines Section 15125, and revisions to the EIR are not required. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-8: The commenter indicates that impact discussions for land use and planning, noise, air pollution is deficient since the EIR does not recognize the rural residential zoning and designation of said parcel.

The EIR analyzes the baseline conditions of the Project area as they were when the NOP for the EIR was published. The subject parcel, at the time of NOP Publication, was zoned as agricultural and was occupied by agricultural uses. As such, the EIR considered the impacts based on the baseline condition. The zoning change of the subject property was approved after the NOP for the EIR was published and there was no way of knowing that the zoning would be changed to a rural residential use. As the rezoned portion of the parcel has not been entitled for development of rural residential uses, it is anticipated that the parcel will remain in agricultural production beyond the year when the Project will become operational (in 2022). This assumption is based on the length of the entitlement and environmental clearance process (2 to 3 years) needed to approve and develop of a residential Project in the County. Based on this, the analysis presented in the EIR is accurate and sufficient based on baseline conditions at the time of NOP publication. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-9: The commenter believes that the new zoning should be discussed in the EIR because there is a semi-urban land use designation that isn't recognized in the EIR. As such, the commenter believes that certain topics of the EIR are not correctly analyzed.

Please refer to **Responses D-7** and **D-8** presented above. At the time of NOP Publication, the zoning of the said parcel was agricultural. Per CEQA, baseline conditions at the time of NOP Publication were analyzed in the EIR. As such, the EIR correctly analyses environmental topics based on the zoning at the time of the NOP Publication. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-10: The commenter questions why Alternative 3 was not considered for analysis in the EIR and notes that it is similar to Alternative 3A but a few hundred feet further south and won't impact said property. The commenter requests that the EIR be revised to include analysis of Alternative 3.

As stated under **Response A-8**, Alternative 3 was presented March 5, 2015 Open House Meeting #2. Feedback from the public indicated concern with Alternative 3 requiring the acquisition of land. Specifically, Alternative 3 would require full parcel acquisitions that would be cost prohibitive for the Project to move forward which deemed Alternative 3 as financially infeasible. As such, Alternative 3 was not carried through and analyzed in this EIR. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Mike Sandu

Response D-11: The commenter expresses his opinion that he is not against the project and what the community needs to do is going to happen. This comment is noted. As the comment does not pertain to the adequacy of the EIR, no revisions to the environmental document are needed, and no further response to the comment is needed.

Response D-12: The commenter expresses concern that his parcel will be split up into four pieces and that the parcels will be too small to continue sustainable agricultural production.

For development of the proposed Project, the County as required by property acquisition and relocations laws, will work with affected parcel owners to provide fair market compensation for parcels (full or partial) that are acquired due to Project implementation. Regarding the loss of potential farmland, the EIR in Section 4.5 provides analysis of impacts to agricultural land and provides **Mitigation Measure AG-1** to offset such impacts to a less than significant level. **Mitigation Measure AG-1** requires the County to either purchase land at a 1:1 ratio equivalent to the Important Farmland that would be loss during Project implementation and setting aside such land in perpetuity in the form of a farmland conservation easement or paying in-lieu fees equivalent to the value of the agricultural land being converted. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

Response D-13: The commenter asks the County to recognize that splitting his parcels will not allow continuation of farming and indicates that he should not have to pay for the process of splitting his parcel.

Please see **Response D-12** above regarding the County being required by property acquisition and relocations laws to work with affected landowners and provide fair market compensation for full or partial parcel acquisition. As the acquisition of parcels is not an environmental concern under CEQA, revisions to the EIR are not required based on this comment. No further response to this comment is needed.

Philip Martin

Response D-14: The commenter introduces himself and relates that his concern is regarding the restriction of traffic (specifically agricultural equipment) going through Banta and accessing California Street and areas north of Banta. The commenter is also concerned with moving large agricultural equipment through roundabouts.

The design of the proposed Project still allows vehicles, including agricultural equipment to access California Street and areas north of Banta. Farm equipment coming from areas east of the Project would be permitted to travel westbound along the existing Grant Line Road, make a right onto El Rancho Road, and then a right onto California Avenue to access areas north of Banta. For agricultural equipment approaching from the west and traveling eastbound, traffic would take the new bypass proposed by the Project, travel through the proposed roundabout at 11th Street, continue east bound on 11th Street to the existing roundabout at Grantline Road, make a left on Grantline Road, make a right on El Rancho Road, to access California Avenue and areas north of Banta. Although this is a longer route compared to existing conditions (approximately 3.64 miles) there is still connectivity to areas north of Banta near California Avenue that agricultural equipment can utilize if the Project is implemented.

Regarding the concern about the movement of larger agricultural equipment through roundabouts, Caltrans has studied roundabouts on the California Highway System. According to Caltrans, benefits of a roundabout include[1]:

- Increase safety
- Increase capacity/reduce delay
- Accommodate larger vehicles
- Less maintenance
- Reduce vehicle emissions
- Reduce construction and right-of-way cost

Roundabouts can accommodate larger vehicles due to truck aprons that are included in their design. The truck apron is a mountable portion of the central island adjacent to the circulatory roadway that accommodates the wheel path of large vehicles at smaller roundabouts. Truck aprons allow vehicles with large turning radii, such as buses, trucks, tractor trailers, farm equipment and emergency vehicles to navigate safely through roundabouts. Prior to final design approval of the Project, the County will review the design of the proposed roundabout at the new road and 11th Street to make sure that larger vehicles can be accommodated and safely access connecting roads. Based on this response, no revisions to the Final EIR are necessary and no further response to this comment is needed.

[1] Caltrans District 5, *Roundabouts on the State Highway System*, Presentation by Caltrans District 5 at SBCAG North County Subregional Meeting, May 4, 2011, Adapted from 0R750 Project Open House by Paul Valado, http://dot.ca.gov/dist05/projects/sb_purisima/roundaboutsonhwy.pdf. Accessed August 24, 2018.

4.0 DRAFT EIR TEXT REVISIONS

Chapter 4 presents specific changes to the text of the Draft EIR that are being made to clarify any errors, omissions, or misinterpretations of materials in the Draft EIR in response to comments received during the public review period. In no case do these revisions result in a greater number of impacts or impacts of a greater severity than those set forth in the Draft EIR. Where revisions to the main text are called for, the page and paragraph are set forth, following by the appropriate revision. Added text is indicated by double underlined text. Text deleted from the Draft EIR is shown in ~~strikeout~~. Page numbers correspond to the page numbers in the Draft EIR. Based on the comments that were received, it should be noted that major changes to the Draft EIR were not required; hence, such major revisions are not included below. Minor changes to the Draft EIR have been noted as described above in the actual text of the Draft EIR. This Response to Comments document, Statement of Overriding Considerations and Findings of Fact, these Draft EIR text revisions, in conjunction with the Draft EIR, constitutes the Final EIR.

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5.0 REPORT PREPARERS

5.1 EIR RESPONSE TO COMMENTS PREPARERS

LSA

201 Creekside Ridge Court, Suite 250

Roseville, California 95678

Jeff Bray, Principal in Charge

Edward Heming, Senior Environmental Planner, Project Manager

Chris Graham, Environmental Planner

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APPENDIX C-2

FINDINGS OF FACT, STATEMENT OF OVERRIDING CONSIDERATIONS, AND MITIGATION MONITORING AND PREORTING PROGRAM

FINDINGS OF FACT, STATEMENT OF OVERRIDING CONSIDERATIONS, AND MITIGATION MONITORING AND REPORTING PROGRAM

PURSUANT TO SECTION 15091, 15093 AND 15097 OF THE STATE CEQA GUIDELINES AND SECTION 21081 OF THE PUBLIC RESOURCES CODE

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARINGHOUSE NO. 2017112022

LSA

December 2018

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FINDINGS OF FACT, STATEMENT OF OVERRIDING CONSIDERATIONS, AND MITIGATION MONITORING AND REPORTING PROGRAM

PURSUANT TO SECTION 15091, 15093 AND 15097 OF THE STATE CEQA GUIDELINES AND SECTION 21081 OF THE PUBLIC RESOURCES CODE

GRANT LINE ROAD CORRIDOR PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

STATE CLEARINGHOUSE NO. 2017112022

Submitted to:

San Joaquin County
Public Works Department
1810 East Hazelton Avenue
Stockton, California 95205

Prepared by:

LSA
201 Creekside Ridge Court, Suite 250
Roseville, California 95678
(916) 772-7450

Project No. MKT1704

LSA

December 2018

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1.0 CEQA FINDINGS OF FACT

1.1 INTRODUCTION

The purpose of these findings is to satisfy the requirements of Sections 15091 and 15092 of the California Environmental Quality Act (CEQA) Guidelines, associated with approval of the Grant Line Road Corridor Project. A Statement of Overriding Considerations consistent with Section 15093 and Mitigation Monitoring and Reporting Program consistent with Section 15097 have been included and will each be adopted separately. The CEQA statute (Public Resources Code Sections 21000 et seq.) and State CEQA Guidelines (Title 14, California Code of Regulations Sections 15000, et seq.) state that if it has been determined that a project may or will have significant impacts on the environment, then an Environmental Impact Report must be prepared. Prior to approval of the project, the EIR must be certified pursuant to Section 15090 of the State CEQA Guidelines. When a certified Final EIR identifies one or more significant environmental impacts, the approving agency must make one or more of the following findings, accompanied by a brief explanation of the rationale for each identified significant impact (Section 15091 of the CEQA Guidelines):

- Changes or alterations have been required in, or incorporated into, such project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency, or can and should be adopted by such other agency.

- Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

No findings are required for impacts that are less than significant and require no mitigation. Section 15092 of the State CEQA Guidelines states that after consideration of a Final EIR, and in conjunction with making the Section 15091 findings identified above, the lead agency may decide whether to approve the project. A project that would result in a significant environmental impact can be approved only if the agency has eliminated or substantially lessened all significant effects on the environment where feasible.

Only when specific economic, legal, social, technological, or other considerations outweigh the unavoidable adverse environmental effects, can a project with unmitigated significant impacts be approved. Section 15093 requires the lead agency to document and substantiate any such determination in a Statement of Overriding Considerations. A Statement of Overriding Considerations is included and is being adopted separately from these findings.

1.2 PROJECT LOCATION, DESCRIPTION, AND OBJECTIVES

The Grant Line Road Corridor Project (Project) is the Project under consideration. The Project is located in the community of Banta in the southwestern portion of San Joaquin County. The Project includes a 1.65-mile-long corridor south of Banta between the intersection of Grant Line Road and

Chabot Court and the intersection of 11th Street and Bird Road. The Project is 75.7 acres in size. The existing two-lane Grant Line Road corridor is experiencing high congestion from both vehicle and truck traffic caused by population growth in the City of Tracy and the industrial area in northeastern Tracy. The Project would create a four-lane bypass roadway south of Banta. The objectives of the Project are to, (1) alleviate congestion and (2) improve safety.

1.3 FINAL ENVIRONMENTAL IMPACT REPORT

1.3.1 EIR Process

Prior to preparing the Draft EIR, the County released a Notice of Preparation (NOP) to solicit the comments of public agencies and interested organizations and individuals regarding the scope and content of the EIR. The NOP was published on November 9, 2017. The comments to the NOP received from agencies and the public are included in **Appendix A** of the Final EIR.

The Draft EIR was made available for public review in hard copy and online commencing on April 30, 2018 and was distributed to local and State responsible and trustee agencies. The general public and local agencies were advised of the availability of the Draft EIR through public notices mailed to residents in proximity to the Project. The Draft EIR was also posted on the San Joaquin County Department of Public Works website (https://www.sjgov.org/department/pwk/projects/grant-line-road) beginning April 30, 2018. CEQA mandates a minimum 30- or 45-day public comment period on Draft EIRs. The County required a 45 day public comment period, which ended on June 13, 2018. The County held a public meeting on June 12, 2018 at the regularly scheduled meeting of the San Joaquin County Supervisors where members of the public had the opportunity to comment on the Project and adequacy of the Draft EIR. Based on a request by the Board of Supervisors, the County extended the public comment period for 16 additional days, to June 29, 2018, to allow for members of the public to comment. This extension was notified through the San Joaquin County Department of Public Works website for the proposed Project. The comments received have been responded to in **Appendix C** of the Final EIR.

1.3.2 Record of Proceedings

For the purposes of CEQA and the findings hereinafter set forth, the administrative record consists of those items listed in Section 21167.6(e) of the Public Resources Code. Pursuant to the requirements of State CEQA Guidelines Section 15091(e), the location and custodian of the documents and other materials that constitute the record of proceedings upon which these decisions are made, are presented below:

Jeffrey Levers
San Joaquin County Public Works Department
1810 East Hazelton Avenue
Stockton, California 95205
Phone (209) 468-3035

1.4 TERMINOLOGY OF FINDINGS

For purposes of these findings, the term *avoid or substantially lessen* refers to the effectiveness of one or more of the mitigation measures to reduce a significant environmental effect. When an impact remains significant or potentially significant even with implementation of the mitigation, the findings will generally conclude that the impact is *significant and unavoidable*. In the process of adopting the mitigation measures identified in the Final EIR, the Board of Supervisors has also made a determination regarding whether the mitigation proposed in the Final EIR is *feasible*. Pursuant to the CEQA Guidelines, *feasible* means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. In the process of considering the Final EIR for certification, the Board of Supervisors has recognized that impact avoidance is not possible in some instances. A significant impact to aesthetics would remain with implementation of the Project, even after implementation of mitigation to lessen the impacts. The resultant statement of overriding considerations follows the findings of fact.

1.5 FINDINGS REQUIRED UNDER CEQA

Public Resources Code section 21002 provides that “public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects[.]” The same statute states that the procedures required by CEQA “are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.” Section 21002 goes on to state that “in the event [that] specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.”

The mandates and principles announced in Public Resources Code section 21002 are implemented, in part, through the requirement that agencies must adopt findings before approving projects for which an EIR is required. (See Pub. Resources Code, § 21081, subd. (a); CEQA Guidelines, § 15091, subd. (a).) For each significant environmental effect identified in an EIR for a proposed project, the approving agency must issue a written finding, supported by substantial evidence, reaching one or more of three permissible conclusions.

The first such finding is that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR." (CEQA Guidelines, § 15091, subd. (a)(1).)

The second permissible finding is that "[s]uch changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency." (CEQA Guidelines, § 15091, subd. (a)(2).)

The third potential conclusion is that "[s]pecific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make

infeasible the mitigation measures or project alternatives identified in the final EIR." (CEQA Guidelines, § 15091, subd. (a)(3).)

Public Resources Code section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." CEQA Guidelines section 15364 adds another factor: "legal" considerations. (See also *Citizens of Goleta Valley v. Board of Supervisors* ("Goleta II") (1990) 52 Cal.3d 553, 565.)

The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (City of Del Mar v. City of San Diego (1982) 133 Cal.App.3d 410, 417.) "'[F]easibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors." (Ibid.; see also Sequoyah Hills Homeowners Assn. v. City of Oakland (1993) 23 Cal.App.4th 704, 715; Sierra Club v. County of Napa (2004) 121 Cal.App.4th 1490, 1507-1508 (the failure to meet project objectives can be sufficient evidence demonstrating infeasibility of an alternative).)

The CEQA Guidelines do not define the difference between "avoiding" a significant environmental effect and merely "substantially lessening" such an effect. The County must therefore glean the meaning of these terms from the other contexts in which the terms are used. Public Resources Code section 21081, on which CEQA Guidelines section 15091 is based, uses the term "mitigate" rather than "substantially lessen." The CEQA Guidelines therefore equate "mitigating" with "substantially lessening." Such an understanding of the statutory term is consistent with the policies underlying CEQA, which include the policy that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Resources Code, § 21002.)

For purposes of these findings, the term "avoid" refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less-than-significant level. In contrast, the term "substantially lessen" refers to the effectiveness of such measure or measures to substantially reduce the severity of a significant effect, but not to reduce that effect to a less-than-significant level. These interpretations are mandated by the holding in *Laurel Hills Homeowners Association v. City Council* (1978) 83 Cal.App.3d 515, 519-521, where the court of appeal held that an agency had satisfied its obligation to substantially lessen or avoid significant effects by adopting numerous mitigation measures, not all of which rendered the significant impacts in question to a less-than-significant level.

CEQA Guidelines section 15091 requires only that approving agencies specify that a particular significant effect is "avoid[ed] or substantially lessen[ed]." The findings, for purposes of clarity, in each case will specify whether the effect in question has been reduced to a less-than-significant level, or has simply been substantially lessened but remains significant.

Moreover, although section 15091, read literally, does not require findings to address environmental effects that an EIR identifies as merely "potentially significant," these findings will nevertheless fully account for all such effects identified in the EIR.

CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where such changes are infeasible or where the responsibility for modifying the project lies with some other agency. (CEQA Guidelines, § 15091, subd. (a), (b).)

In seeking to effectuate the substantive policy of CEQA to substantially lessen or avoid significant environmental effects to the extent feasible, an agency, in adopting findings, need not necessarily address the feasibility of both mitigation measures and environmentally superior alternatives when contemplating approval of a proposed project with significant impacts. Where a significant impact can be mitigated to an "acceptable" level solely by the adoption of feasible mitigation measures, the agency, in drafting its findings, has no obligation to consider the feasibility of any environmentally superior alternative that could also substantially lessen or avoid that same impact – even if the alternative would render the impact less severe than would the proposed project as mitigated. (*Laurel Hills Homeowners Ass'n v. City Council* (1978) 83 Cal.App.3d 515, 521; see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 730-731; and *Laurel Heights Improvement Ass'n v. Regents of the University of California* ("Laurel Heights I") (1988) 47 Cal.3d 376, 400-403.)

In these Findings, the County addresses the extent to which each significant environmental effect can be substantially lessened or avoided through the adoption of feasible mitigation measures. Nonetheless, the County also addresses the extent to which alternatives described in the Final EIR are (i) environmentally superior with respect to that effect and (ii) "feasible" within the meaning of CEQA.

1.6 LEGAL EFFECT OF FINDINGS

These findings satisfy the requirements of Sections 15091, 15092, and 15093 of the State CEQA Guidelines and constitute the County's evidentiary and policy bases for its decision to approve the Project in a manner consistent with the requirements of CEQA. In doing so, they disclose the final disposition of the significant impacts identified in the Final EIR and the reasons for not adopting the Project alternatives. The County also incorporates by reference all of the mitigation measures identified in the Final EIR. Adoption of the statement of overriding considerations allows the Board of Supervisors to approve the Project, even though it would result in significant and unavoidable impacts.

1.7 FINDINGS ON ALTERNATIVES

In accordance with State CEQA Guidelines Section 15126.6, the Final EIR analyzed a range of reasonable alternatives to the Project, or to the location of the Project. A comparative impact assessment of the No Project Alternative and Alternative 4 were included in the Final EIR. Under the No Project Alternative, construction and operation of the Project would not occur. Alternative 4 would propose a 2.4 mile corridor that would bypass the community of Banta on the south side. Public Resources Code Section 15091(a) states that if the Board of Supervisors rejects any or all of the alternatives analyzed in the Final EIR, it must describe why the alternatives are infeasible. Infeasibility can be the result of "specific economic, legal, social, technological, or other

considerations, including provision of employment opportunities for highly trained workers." Based on the impacts identified in the Final EIR and the reasons described below, the Board of Supervisors rejects the No Project Alternative and Alternative 4 as infeasible.

- The No Project Alternative would not attain the fundamental project objectives. Implementation of the No Project Alternative would degrade the LOS to surrounding roadway segments and intersections when compared to the proposed Project. The No Project Alternative would not improve safety on the local circulation system, nor would it alleviate congestion on local roadways or within the community of Banta.

- The Alternative 4 design would meet the Project objectives; however, in comparison to the proposed Project, implementation of the Alternative 4 design would impact more residents in the community of Banta. More residents would be subject to impacts from noise, traffic, and aesthetics that would be more severe than those occurring under the proposed Project.

Table A: Comparison of the Project, No Project Alternative and Alternative 4 Impacts shows the impact comparison of each CEQA resource topic for the proposed Project, No Project Alternative and Alternative 4.

Table A: Comparison of the Project, No Project Alternative and Alternative 4 Impacts

Resource Topic	Proposed Project	No Project Alternative	Alternative 4
Aesthetic Resources	SU	NI	SU
Agricultural and Forestry Resources	LTS	NI	LTS
Air Quality	LTS	LTS	LTS
Biological Resources	LTS	NI	LTS
Cultural Resources	LTS	NI	LTS
Geology and Soil	LTS	NI	LTS
Greenhouse Gas	LTS	NI	LTS
Hazards and Hazardous Materials	LTS	NI	LTS
Hydrology and Water Quality	LTS	NI	LTS
Land Use and Planning	LTS	NI	LTS
Mineral Resources	NI	NI	NI
Noise	LTS	NI	LTS
Population and Housing	NI	NI	NI
Public Services	NI	NI	NI
Recreation	NI	NI	NI
Transportation/Traffic	LTS	LTS	LTS
Tribal Resources	LTS	NI	LTS
Utilities and Service Systems	LTS	NI	LTS

Notes: SU = Significant and Unavoidable; LTS = Less Than Significant; NI = No Impact

Pursuant to the Public Resources Code section 21081(a)(3) and CEQA Guidelines section 15091(a)(3), the County Board of Supervisors finds the that the No Project Alternative is the

environmentally superior alternative because implementation of this alternative would result in fewer significant and unavoidable impacts, but rejects this alternative because it does not meet the Project objectives. As such, the County Board of Supervisors chooses the proposed Project as the superior alternative.

1.8 FINDINGS OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OR POTENTIALLY SIGNIFICANT IMPACTS REDUCED TO LESS THAN SIGNIFICANT LEVELS

1.8.1 Aesthetics

1.8.1.1 Summary Description

Impact Threshold AES-A: *Would the Project have a substantial adverse effect on a scenic vista?*

Public outreach has indicated that "close in" scenic vistas at sensitive receptors north of the Project would be impacted. Close in scenic vistas of existing agricultural use would be permanently blocked at some locations of residents that have unobstructed views of such scenic vistas. The Project would result in **significant and unavoidable** impacts.

Impact Threshold AES-C: *Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?*

Sensitive receptors would be exposed to a foreground visual change with implementation of a new road in an area occupied by agricultural productive land. The Project would result in **significant and unavoidable** impacts.

Impact Threshold AES-D: *Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Implementation of the Project would generate light from vehicle headlights that would intrude onto parcels where no light intrusion is currently occurring. This could result in potentially significant impacts to residential units in the area. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.1.2 Findings

- Specific economic, legal, social, technological, or other considerations, make infeasible implementation of mitigation measures or project alternatives identified in the environmental impact report related to aesthetic impacts under Impact Threshold AES-A and Impact Threshold AES-C.

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect under Impact Threshold AES-D are identified below.

1.8.1.3 Basis for Findings

Avoidance of impacts under Thresholds AES-A and AES-C is infeasible because the proposed Project would need to be developed in this area to meet specific objectives relating (reduction in traffic congestion and improvement to traffic safety) to the Project. The No Project Alternative would not meet the Project objectives and Alternative 4 would meet Project objectives but would impact more residents related to aesthetics when compared to the proposed Project. Based on the location of the Project site and the design, no feasible mitigation would be available to reduce impacts of "close in" scenic vistas (agricultural lands) south of sensitive receptors. Specifically, implementation of barriers to reduce glare and noise impacts would result in further obstruction of such "close in" scenic vistas.

The following mitigation measure would reduce aesthetic impacts from light generation of the Project to less than significant levels (Impact Threshold AES-D).

Mitigation Measure AES-1 The County of San Joaquin shall provide barriers at the edges of the parcel lines at Assessor's Parcel Number (APN) 25007002, 25007003, and 25008015 that are facing the new roadway. The barriers shall be made of materials that would block the headlight spillage of vehicles traveling along the new roadway. APNs 25012003 and 25008016 may also experience headlight spillage onto their parcels, and implementation of sound walls (as described in Section 4.8, Noise, of this Environmental Impact Report) to reduce noise impacts would also be effective in reducing light intrusion onto these properties.

1.8.2 Agriculture and Forestry Resources

1.8.2.1 Summary Description

Impact Threshold AG-A: *Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?*

Implementation of the Project would result in the conversion of Important Farmland and land designated as General Agriculture per the San Joaquin County General Plan Land Use and Zoning Code to urbanized land. This could result in potentially significant impacts to agricultural resources in the area. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold AG-E: *Would the Project involve other changes in the existing environment which, due to their location or nature, which could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forested use?*

The Project would result in the conversion of farmland to non-farmland uses. This could result in potentially significant impacts to agricultural resources in the area. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.2.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.2.3 Basis for Findings

The following mitigation measure would reduce Project impacts to agricultural resources (Impact Thresholds AG-A and AG-E) to a less than significant level.

Mitigation Measure AG-1 The San Joaquin County Public Works Department shall satisfy the mitigation requirements as set forth in the Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, where the San Joaquin County Public Works Department shall purchase land in equivalent condition to the Important Farmland that would be lost due to Project implementation at a 1:1 ratio. As such, the San Joaquin County Public Works Department shall purchase 27.2 acres of Agricultural Land equivalent in condition to the Important Farmland and existing designated Agricultural Land that would be saved in perpetuity in the form of farmland conservation easement or other farmland conservation mechanism. The purchase shall be approved by the Agricultural Technical Advisory Committee and the County Board of Supervisors. The San Joaquin County Public Works Department also has the option to pay in-lieu fees in accordance with Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, and through approval of the Agricultural Technical Advisory Committee and the County Board of Supervisors. The in-lieu fees would equate to the value of the agricultural land that would be lost due to proposed Project implementation. The in-lieu fees would be administered to fulfill programmatic responsibilities, including coverage of acquiring interests in land and administering, monitoring, and enforcing the farmland conservation easement or other instrument designed to preserve the agricultural value of the land for farmland mitigation purposes. The San Joaquin County Public Works Department shall satisfy this mitigation measure prior to approval of the proposed Project.

1.8.3 Air Quality

1.8.3.1 Summary Description

Impact Threshold AQ-B: *Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

The proposed Project would potentially violate air quality standards or contribute substantially to an existing or projected air quality violation. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold AQ-C: *Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?*

The Project could potentially result in a cumulatively considerable net increase of criteria air pollutants for which the region is nonattainment under an applicable federal or State ambient air quality standard. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold AQ-D: *Would the Project expose sensitive receptors to substantial pollutant concentrations?*

The Project could expose sensitive receptors to substantial pollutant concentrations. This could result in potentially significant impacts to sensitive receptors in the area. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.3.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.3.3 Basis for Findings

The following mitigation measures would reduce impacts related to air quality emissions from construction and operational activities of the proposed Project to a less-than-significant level.

Mitigation Measure AIR-1

The Project contractor, on behalf of the San Joaquin County Public Works Department, shall prepare a Dust Control Plan for excavation and construction activities at the Project site pursuant to the requirements and regulations of the San Joaquin Valley Air Pollution Control District (SJVAPCD), including Regulation VIII. The Dust Control Plan would be developed prior to initiation of construction activities in coordination with the SJVAPCD. The SJVAPCD would maintain a copy of the Dust Control Plan for its records.

The Project contractor shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of construction and maintenance activities at the Project site. The Dust Control Plan shall include, at a minimum, the following measures:

- Apply water to unpaved surfaces and areas
- Outfitting all personnel on site with appropriate respiratory equipment; the equipment must be properly fitted and personnel must be trained in its use;

- Providing worker hygiene stations and training;
- Prior to construction, provide information on causes, preventative measures, symptoms, and treatments for Valley Fever to individuals who could potentially be exposed through construction activities (i.e., construction workers);
- The County shall continue outreach and coordination with the California Department of Public Health to ensure that the information regarding Valley Fever is readily available to nearby residents, schools, and businesses;
- Use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas;
- Limit or reduce vehicle speed on unpaved roads and traffic areas;
- Maintain areas in a stabilized condition by restricting vehicle access;
- Install wind barriers;
- During high winds (the Dust Control Plan will specify a threshold for implementing “high wind” measures), cease outdoor activities that disturb the soil;
- Keep bulk materials sufficiently wet when handling
- Store and handle materials in a three-sided structure;
- When storing bulk materials, apply water to the surface or cover the storage pile with a tarp;
- Haul trucks shall not be overloaded;
- Cover haul trucks with a tarp or other suitable cover, or wet the top of the load enough to limit visible dust emission;
- Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site;
- Prevent trackout by installing a trackout control device;
- Clean up trackout at least once per day; and,

- Monitor dust-generating activities and implement appropriate measures for maximum dust control.

Mitigation Measure AIR-2 The San Joaquin County Public Works Department shall include a condition of approval requiring the submission of an Air Impact Assessment (AIA) application before receiving final discretionary approval for the Project. The AIA application shall be submitted to the SJVAPCD on a form provided by the SJVAPCD and shall contain the following:

- Applicant name and address;
- Detailed Project description, including the items specified in SJVAPCD Rule 9510;
- On-Site Emission Reduction Checklist;
- Monitoring and Reporting Schedule;
- Off-Site Fee Deferral Schedule; and
- AIA.

1.8.4 Biological Resources

1.8.4.1 Summary Description

Impact Threshold BIO-A: *Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?*

Implementation of the Project could have a substantial adverse effect on special-status wildlife species. Special-status wildlife species that may occur in the Project area and be affected by the proposed Project include: western burrowing owl; Swainson's hawk; northern harrier; white-tailed kite; California horned lark; loggerhead shrike, song sparrow ("Modesto" population), and two bat species. This could result in potentially significant impacts to such biological resources. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold BIO-D: *Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

The proposed Project could potentially impact nesting birds. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold BIO-F: *Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?*

The Project site is located within the SJMSCP and would be required to comply with the plan's provisions. If the Project was not to comply with the SJMSCP plan potentially significant impacts could occur. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.4.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.4.3 Basis for Findings

The following mitigation measures would reduce biological resource impacts from the Project to less than significant levels.

Mitigation Measure BIO-1 In accordance with the San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP) compensation strategy, impacts to habitat for special-status plant and animal species covered under the SJMSCP shall be mitigated through implementation of one or more of the following options, subject to approval by the SJCOG:

- Payment of the appropriate mitigation fee;
- Dedication of mitigation lands;
- Purchase of approved mitigation bank credits; or
- Proposing an alternative mitigation plan.

Mitigation Measure BIO-2 Implementation of the following applicable SJMSCP Incidental Take Minimization Measures (ITMM) for Swainson's hawk, western burrowing owl, ground nesting or streamside/lakeside nesting birds (northern harrier, horned lark, western grebe, short-eared owl), birds nesting in isolated trees or outside of riparian areas (sharp-shinned Hawk, yellow warbler, loggerhead shrike), and all bats.

Swainson's Hawk. The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, that the hawks prefer for nesting) or removing the nest trees.

If the Project Proponent elects to retain a nest tree the following ITMMs shall be implemented during construction activities to encourage tree retention:

- If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.

- If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

These ITMMs are consistent with the provisions of the Migratory Bird Treaty Act (MBTA), as described in Section 5.2.3.1(g) of the SJMSCP.

Western Burrowing Owl. The presence of ground squirrels and squirrel burrows is attractive to western burrowing owls. Western burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the Project site early in the planning process by employing one of the following practices:

a. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches (36") above the ground. Vegetation should be retained until construction begins. Vegetation would discourage both ground squirrel and owl use of the site.

b. Alternatively, if western burrowing owls are not known or suspected on the Project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders, the Project Proponent may disc or plow the entire Project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the Project site. Detailed descriptions of these methods are included in Appendix A, Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County, dated March 2000:

    i. **Anticoagulants**. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with Environmental Protection Agency (EPA) label

standards and as directed by the County Agricultural Commissioner.

ii. **Zinc Phosphide**. Establish bait stations with nontreated grain 5 to 7 calendar days in advance of rodenticide application, then apply zinc phosphide to bait stations. Rodenticides shall be used in compliance with EPA label standards and as directed by the County Agricultural Commissioner.

iii. **Fumigants**. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include aluminum phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with EPA label standards and as directed by the San Joaquin County Agricultural Commissioner.

iv. **Traps**. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations. If the measures described above were not attempted or were attempted but failed, and western burrowing owls are known to occupy the Project site, the following measures shall be implemented:

a. During the nonbreeding season (September 1 through January 31) western burrowing owls occupying the Project site should be evicted from the Project site by passive relocation, as described in the California Department of Fish and Wildlife's (CDFW) (previously known as the California Department of Fish and Game) *Staff Report on Burrowing Owls* (1995).

b. During the breeding season (February 1–August 31), occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee, (with the concurrence of the Permitting Agencies' representatives on the Advisory Committee) or a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and

are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1 (G) of the SJMSCP.

Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl). A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP.

Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike). A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These ITTMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP.

Bats (All).

a. Prior to the nursery season indicated in Table B, **Occupation Sites and Nursery Seasons for SJMSCP Covered Bats**, nursery sites shall be sealed for these species.

b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the Project site. Alternatively, grating may be installed as described in Section 5.5.9 (E)(1) of the SJMSCP.

c. When colonial roosting sites in trees or structures must be removed, removal shall occur outside of the nursery and/or

hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2 of the SJMSCP.

Table B: Occupation Sites and Nursery Seasons for SJMSCP Covered Bats

Bat Species	Preferred Occupation Site	Nursery Season
Western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasionally)	April–September
Western small-footed bat	Cave, adit, cliff, rock crevice, building	May–August
Long-eared myotis	Cave, adit, tree, snag	May–August
Fringed myotis	Cave, adit, cliff, rock crevice, building	May–August
Long-legged myotis	Cave, adit, cliff, rock crevice, tree, snag, building	May–August
Western red bat	Tree, snag, cave (occasionally)	May–August
Yuma myotis	Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag	May–August
Townsend's big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April–August

SJMSCP = San Joaquin County Multi-Species Habitat Conservation & Open Space Plan

1.8.5 Cultural Resources

1.8.5.1 Summary Description

Impact Threshold CULT-A: *Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

There is potential for encountering buried archaeological cultural resources during Project construction. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold CULT-B: *Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

The Project could potentially impact archaeological resources. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold CULT-C: *Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

No paleontological resources or unique geologic features are known to exist within or near the Project site. However, should undiscovered paleontological resources be found during Project construction, impacts to such resources could occur. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold CULT-D: *Would the Project disturb any human remains, including those interred outside of formal cemeteries?*

No human remains are known to exist within or near the proposed Project site. However, should undiscovered human remains be found during Project construction, impacts to such resources could

occur. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.5.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.5.3 Basis for Findings

The following mitigation measures would reduce cultural resource impacts from the Project to less than significant levels.

Mitigation Measure CULT-1 Preconstruction Training. The Project Proponent shall retain a professional archaeologist to provide a pre-construction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant pre contact and/or historic-period archaeological cultural resources within the Project area. The briefing shall discuss and describe the type and nature of archaeological artifacts or features that could be exposed during Project ground disturbance, as well as the procedures for temporarily halting activity in the vicinity and protecting the find until notification can occur and it can be assessed.

Mitigation Measure CULT-2 Should archaeological deposits be encountered during Project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology shall be contacted to assess the situation, consult with agencies as appropriate (as well as tribal descendants, if the find is pre-contact in nature) and make recommendations for the treatment of the discovery. If found to be significant (i.e., eligible for listing in the CRHR), the County shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis of archaeological deposits, further tribal consultation (as warranted), and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigation measures, a report documenting the methods, findings, and recommendations shall be prepared and submitted to the County for review. The final report shall be submitted to the CCIC at California State University, Stanislaus. Significant archaeological materials shall be submitted to an appropriate curation facility. The County shall inform its contractor(s) of the sensitivity of the study area for archaeological

deposits and shall verify that the following directive has been included in the appropriate contract documents/specifications:

> *"The subsurface of the construction site may be sensitive for archaeological deposits. If archaeological deposits are encountered during Project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any archaeological materials. Prehistoric archaeological deposits can include shellfish remains; bones; flakes of, and tools made from, obsidian, chert, and basalt; and mortars and pestles. Historic-period archaeological deposits can include concentrations of historic glass, cans, ceramics, or other "trash," as well as structural features including buried wells, foundations, or privies."*

Mitigation Measure CULT-5 If paleontological resources are encountered during Project excavation and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be retained to evaluate the find and make recommendations for additional paleontological mitigation, which may include paleontological monitoring; collection of observed resources; preservation, stabilization, and identification of collected resources; curation of resources into a museum repository; and preparation of a final report documenting the monitoring methods and results to be submitted to the museum repository and the County.

Mitigation Measure CULT-6 Treatment of Previously Unidentified Human Remains. If human remains are encountered, these remains shall be treated in accordance with California Health and Safety Code §7050.5 and the appropriate procedures described above for archaeological deposits. The County shall inform its contractor(s) of the appropriate procedures for treatment of human remains by including the following directive in contract documents/ specifications:

> *"If human remains are encountered during Project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move*

any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods."

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the County for review, and the final report should be submitted to the CCIC.

1.8.6 Geology and Soils

1.8.6.1 Summary Description

Impact Threshold GEO-B: *Would the Project result in substantial soil erosion or the loss of topsoil?*

Construction of the proposed Project could result in soil erosion. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold GEO-D: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

The proposed Project could be located on expansive soil, which could result in damage to the roadway infrastructure. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.6.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.6.3 Basis for Findings

The following mitigation measures would reduce impacts related to soil erosion and expansive soils from Project implementation to a less-than-significant level.

Mitigation Measure HYDRO-1 Construction site temporary BMPs and any subsequent permit requirements as they relate to construction activities for the project shall be prepared and implemented. This documentation shall include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the commencement of construction and submission of a Notice of

Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. These temporary BMPs shall be installed prior to any construction operations and shall be in place for the duration of the contract. The removal of these BMPs along with site cleanup shall be the final construction operation procedures.

Mitigation Measure HYDRO-2 To control stormwater and sedimentation during the construction and operational periods of the project, BMPs outlined in any authorizations or permits issued under the authority of the CWA shall be implemented. Stormwater control measures shall be designed to accommodate stormwater generated by the project. If such BMPs are ineffective, the San Joaquin County (Public Works) shall remedy the situation immediately, in consultation with the regulatory and resource agencies.

Mitigation Measure GEO-1 Any foundations and structure support for the project shall be designed to prevent uplift of the supported structures.

Mitigation Measure GEO-2 Any foundation and structure support for the project shall be designed to resist forces exerted on the foundation due to soil volume changes, or shall be isolated from the expansive soil.

1.8.7 Hazards and Hazardous Materials

1.8.7.1 Summary Description

Impact Threshold HAZ-A: *Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

The Project includes use of hazardous materials (i.e., fuels, oils, fluids that are flammable) during construction activities. Use of such hazardous materials could be potentially significant to construction workers and nearby residents. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HAZ-B: *Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Implementation of the Project would disrupt land that has been historically been in agricultural production. Therefore, construction has the potential of releasing and exposing hazardous materials to construction workers and nearby residents, leading to potentially significant impacts. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HAZ-C: *Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

The Project has the potential to emit or release hazardous materials within 0.25 mile of an existing school. This could be potentially significant to students and faculty at Banta Elementary School. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.7.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.7.3 Basis for Findings

The following mitigation measure would reduce hazards and hazardous material impacts from the Project to less than significant levels.

Mitigation Measure HAZ-1 The Project would disturb more than 1 acre of soil and is subject to a Construction Permit from the State Water Board, which requires development of a Stormwater Pollution Prevention Plan and a Spill Prevention Countermeasure Plan (SPCP). Prior to commencement of construction activities, the construction contractor shall prepare an SPCP and submit the plan to San Joaquin County Environmental Health Department. The SPCP shall include information on the nature of all hazardous materials that would be used on-site during the construction period and information regarding proper handling of hazardous materials and clean-up procedures in the event of an accidental release. The SPCP shall be available on the Project site through the duration of the construction period. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCP.

Mitigation Measure HAZ-2 A construction management plan shall be prepared that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The construction management plan shall include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency find, consultation with that agency, and protocols for further action. In such instances, construction activities would cease until it is determined in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.

1.8.8 Hydrology and Water Quality

1.8.8.1 Summary Description

Impact Threshold HYDRO-A: *Would the Project violate any water quality standards or waste discharge requirements?*

Implementation of the Project could cause temporary water quality impacts due to grading activities and removal of existing vegetation, which can cause increased erosion. This could result in a potentially significant impact to water quality. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HYDRO-C: *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

New impervious surfaces would be generated due to Project implementation. As such, drainage in the area would be altered compared to existing conditions. This could result in a potentially significant impact existing drainage patterns in the Project area. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HYDRO-D: *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site*?

The Project has the potential to substantially alter the drainage pattern of the site resulting in potentially significant impacts. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HYDRO-E: *Would the Project 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?*

The Project has the potential to create or contribute to runoff which could exceed the capacity of existing or planned stormwater drainage systems. This could result in a potentially significant impact related to water runoff. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HYDRO-F: *Would the Project otherwise substantially degrade water quality?*

The Project has the potential to substantially degrade water quality, specifically resulting in potential impacts during Project construction. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold HYDRO-H: *Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

The majority of the new 4-lane arterial would be constructed in Flood Zone X, outside the 100-year flood hazard area. However, a portion of the new 4-lane arterial would be constructed in Flood Zone AE. This has the potential to result in potentially significant impacts related to placing a structure in a 100-year flood hazard. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.8.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.8.3 Basis for Findings

The following mitigation measures would reduce impacts related to hydrology and water quality from Project construction and operation to a less-than-significant level.

Mitigation Measure HYDRO-1 Construction site temporary BMPs and any subsequent permit requirements as they relate to construction activities for the project shall be prepared and implemented. This documentation shall include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the commencement of construction and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. These temporary BMPs shall be installed prior to any construction operations and shall be in place for the duration of the contract. The removal of these BMPs along with site cleanup shall be the final construction operation procedures.

Mitigation Measure HYDRO-2 To control stormwater and sedimentation during the construction and operational periods of the project, BMPs outlined in any authorizations or permits issued under the authority of the CWA shall be implemented. Stormwater control measures shall be designed to accommodate stormwater generated by the project. If such BMPs are ineffective, the San Joaquin County (Public Works) shall remedy the situation immediately, in consultation with the regulatory and resource agencies.

Mitigation Measure HYDRO-3 Detention basins shall be incorporated into Project design such that post-construction conditions replicate the natural drainage patterns of the site. Since the Project will create new impervious surfaces, the basins will mitigate for increased runoff.

Mitigation Measure HYDRO-4 Roadside ditches will be provided adjacent to the new roadway to convey drainage from the roadway to bioretention areas and detention basins and culvert pipes will be used to carry stormwater under roads where needed.

1.8.9 Land Use and Planning

1.8.9.1 Summary Description

Impact Threshold Land Use and Planning C: *Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan?*

The proposed Project is located within the SJMSCP and has the potential to not be consistent with the plan's standards. If the Project is not consistent with SJMSCP standards a potentially significant impact would exist. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.9.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.9.3 Basis for Findings

Implementation of **Mitigation Measures BIO-1** and **BIO-2** would ensure the proposed Project is consistent with the SJMSCP. With implementation of these mitigation measures, impacts would be less than significant.

1.8.10 Noise

1.8.10.1 Summary Description

Impact Threshold NOI-A: *Would the Project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Construction activities associated with the proposed Project would expose sensitive receptors to a temporary noise level increase. (The proposed Project would not exceed standards, as the County does not have construction noise exposure standards for sensitive receptors).

Once completed, vehicle traffic along the new road would generate noise levels at nearby sensitive receptors that would exceed County noise level standards for residential uses. As operation of the proposed Project would result in an increase in noise levels that exceed County standards, potentially significant impacts could occur. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold NOI-C: *Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?*

The Project has the potential to result in a substantial permanent increase in the ambient noise level. As such potentially significant impacts related to noise level increases could occur at sensitive receptors. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

Impact Threshold NOI-D: *Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?*

The Project has the potential to result in a substantial temporary or periodic increase in ambient noise levels in the area. This would result in potentially significant impacts at nearby sensitive receptors. With the incorporation of **mitigation**, the Project would result in **less than significant** impacts.

1.8.10.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.10.3 Basis for Findings

The following mitigation measure would reduce noise impacts generated by the Project to less than significant levels.

Mitigation Measure NOI-1 Construction activities during the four phases of Project development shall occur during any day of the week from 6:00 a.m. to 9:00 p.m. per the County Code. If construction activities need to occur outside of this time frame, the construction contractor shall notify the County, and approval of extended construction activity hours shall be approved by the County Board of Supervisors. The County Board of Supervisors, if approval is granted, may require additional conditions of approval to ensure that construction activity noise levels are as low as possible. The construction contractor would be required to abide by such conditions of approval if the request of construction activity times is approved by the County Board of Supervisors.

Mitigation Measure NOI-2 The following minimization measures shall be implemented during construction activities that occur within or closer than 50 feet of sensitive receptors:

The Project construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest sensitive receptors.

The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related

noise sources and noise-sensitive receptors nearest the Project construction areas.

A temporary 10-foot-high perimeter wall shall be placed along the property lines such that the line of sight from ground-level construction equipment and sensitive receptors would be blocked. The construction barrier may be a 0.5-inch-thick plywood fence or another material that has a minimum Sound Transmission Class rating of 28.

Prior to commencement of Project construction, staff from the County shall continue public relations with residents and businesses near the Project site by providing construction information pamphlets to those residents and businesses within 500 feet of the Project site. The construction pamphlets shall describe the type of construction activities that would occur, the duration of Project construction, indication that a temporary increase in ambient noise levels could occur during Project construction, and a phone number where concerned residents and business owners can call County staff if noise levels from construction activities become a nuisance.

Mitigation Measure NOI-3 As part of the proposed Project, noise barriers shall be constructed by the County at the property lines of sensitive receptors SR-1, SR-4, and SR-5. The barriers that are installed shall be constructed such that noise levels from adjacent transportation sources would be reduced by a minimum of 5 dBA Ldn and shall be installed prior to opening the proposed Project to traffic.

1.8.11 Tribal Cultural Resources

1.8.11.1 Summary Description

Impact Threshold 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:*

1. *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,*
2. *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.*

The Project has the potential to cause a change in the significance of tribal cultural resources. This could result in a potentially significant impact. With the incorporation of **mitigation**, the Project would result in a **less than significant** impact.

1.8.11.2 Findings

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The mitigation measures that substantially lessen the environmental effect are identified below.

1.8.11.3 Basis for Findings

Implementation of **Mitigation Measures CUL-1** and **CUL-2** would ensure the proposed Project reduces impacts to tribal cultural resources if found. With implementation of these mitigation measures, impacts would be less than significant.

1.9 RECIRCULATION NOT REQUIRED

The revisions made to the Final EIR are intended to reflect the streamlining provisions of CEQA for projects consistent with the General Plan, and do not raise substantive changes that would rise to the level of "significant new information" requiring recirculation. Under section 15088.5 of the CEQA Guidelines, recirculation of an EIR is required when "significant new information" is added to the EIR after public notice is given of the availability of the DEIR for public review but prior to certification of the Final EIR. The term "information" can include changes in the project or environmental setting, as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.
4. The DEIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (CEQA Guidelines, § 15088.5.)

Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. The above standard is "not intend[ed] to promote endless rounds of revision and recirculation of EIRs." (*Laurel Heights*

Improvement Assn. v. Regents of the University of California (1993) 6 Cal. 4th 1112, 1132.) "Recirculation was intended to be an exception, rather than the general rule." (Ibid.)

CEQA case law emphasizes that "'[t]he CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal.'" (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 736-737; see also *River Valley Preservation Project v. Metropolitan Transit Development Bd.* (1995) 37 Cal.App.4th 154, 168, fn. 11.) "'CEQA compels an interactive process of assessment of environmental impacts and responsive project modification which must be genuine. It must be open to the public, premised upon a full and meaningful disclosure of the scope, purposes, and effect of a consistently described project, with flexibility to respond to unforeseen insights that emerge from the process.' [Citation.] In short, a project must be open for public discussion and subject to agency modification during the CEQA process." (*Concerned Citizens of Costa Mesa, Inc. v. 33rd Dist. Agricultural Assn.* (1986) 42 Cal.3d 929, 936.) Here, the changes to the Draft EIR are exactly the kind of revisions that the case law recognizes as legitimate and proper because they offer clarifying information to the reader and do not result in an exacerbation of existing impacts or create new impacts.

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2.0 STATEMENT OF OVERRIDING CONSIDERATIONS

This statement of overriding considerations describes the project benefits that outweigh its environmental impacts. It is adopted in accordance with Public Resources Code section 21081(b) and CEQA Guidelines Section 15093:

a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

b) When the lead agency approves a project which will result in the occurrence of significant effects which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.

The Final EIR for the Grant Line Road Corridor Project examines the changes to the existing environment that would occur through Project implementation. The significant, unavoidable impacts to aesthetics are described above, and are detailed in the Aesthetics section of the Final EIR.

These impacts are outweighed individually and collectively by the following benefits of the Grant Line Road Corridor Project.

2.1 BENEFITS AND SUPPORTING FACTS

The Project provides several benefits that outweigh the significant and unavoidable adverse environmental effects. Specifically, the Project will provide the community of Banta with improved traffic safety and a reduction in existing and future traffic congestion. The Project is in alignment with transportation and mobility goals described in the County of San Joaquin General Plan 2035. The following goals related to improvement of traffic mobility with delay reductions are met by the Project:

- **TM-1:** To maintain a comprehensive and coordinated multimodal transportation system that enhances the mobility of people, improves the environment, and is safe, efficient, and cost effective.

- **TM-2:** To improve County roadways to include pedestrian, bicycle, and transit facilities to better serve people who use these active transportation modes.

- **TM-7:** To maintain an efficient transportation network to facilitate the movement of goods within and through the County.

The Project will result in an improved level of service with roadway safety improvements that will improve safety and traffic circulation in the community of Banta. This will occur due to the removal of high levels of traffic traveling through the main downtown area of Banta and reducing vehicle accidents currently experienced in the community of Banta. In addition, the Project includes a wide shoulder on each side of the road that can be signed as a Class III bicycle route to increase multi-modal transportation within the area.

2.2 OTHER BENEFITS

In addition to the safety and traffic reduction benefits, the Project also provides economic benefits. Improvements made to the Grant Line Road corridor will improve traffic flow between the City of Tracy and around the community of Banta, allowing for improved travel times for the transportation of vehicles and delivery of goods.

2.3 REGION-WIDE ENVIRONMENTAL BENEFIT

The existing Grant Line Road corridor is used on a regular basis as a connection between the City of Tracy and Interstate 5. Traffic along the existing corridor routinely creates delays and safety hazards in the community of Banta due to the volume of vehicles that use this corridor on a daily basis. Implementation of the proposed Project would bypass the community of Banta and would accommodate the existing and future increase of vehicle volumes that use the corridor. This would result in a region-wide benefit in traffic circulation and safety and would be consistent with Goal TM-3 of the San Joaquin General Plan that focuses on maintaining a safe, efficient, and cost-effective roadway system for the movement of people and goods.

2.4 STATEMENT OF OVERRIDING CONSIDERATIONS

San Joaquin County has independently reviewed the information in the Final EIR and the record of proceedings and made a reasonable and good faith effort to eliminate or substantially lessen the impacts resulting from the proposed Project to the extent feasible, by including actions that mitigate potential environmental impacts to the greatest extent feasible, while balancing the Project's benefits against significant and unavoidable impacts.

Implementation of the proposed Project would provide the following economic, social, legal, and other considerable benefits:

1. The Project would implement an improvement to the existing circulation system in the community of Banta that would improve vehicle congestion and improve safety related to a reduction in vehicle accidents. Residents living along the existing Grant Line Road corridor would be able to safely leave their parcels in their vehicles and access the local roadway system; whereas, compared to existing conditions, such access is currently unsafe.

2. The Project would improve the mobility of vehicles and goods between the I-5 corridor and the City of Tracy by implementing a section of road that better accommodates existing and future

traffic volumes. Such implementation would reduce traffic congestion and improve circulation travel time for vehicles traveling along the Grant Line Road corridor.

3. The Project implements goals and policies related to improvements to transportation and vehicle safety as set forth in the San Joaquin County General Plan.

2.5 CONCLUSION

After balancing the specific economic, legal, social, technological, and other benefits of the proposed Project, the San Joaquin County Board of Supervisors, find that the significant unavoidable impacts may be considered "acceptable" due to the specific considerations listed herein, which outweigh the impacts.

The Board of Supervisors has considered the information presented in the Final EIR, as well as public testimony, and the record of proceedings in which the proposed Project was considered. Recognizing that significant unavoidable impacts exist to aesthetics, the Board of Supervisors nevertheless finds that the benefits of the proposed Project outweigh the impacts of the proposed Project. Having included all feasible mitigation measures and recognized all unavoidable significant impacts, the Board of Supervisors hereby finds that each of the separate benefits of the Project, as stated herein, are determined to be unto themselves separated overriding considerations, independent of other benefits, and warrant adoption of the proposed Project.

Based on the foregoing findings, the Board of Supervisors hereby determines that:

1. All significant environmental impacts due to Project implementation have been eliminated or substantially lessened where feasible.

2. There are no feasible alternatives to the Project which would mitigate or substantially lessen the impacts while attaining most or all of the Project objectives.

3. Any remaining unavoidable significant environmental impacts are acceptable due to the factors stated herein.

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3.0 MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) is formulated based upon the findings of the Final EIR prepared for the County of San Joaquin's Grant Line Road Corridor Project (interchangeably referred to herein as the "Project"). This MMRP is in compliance with Section 15097 of the CEQA Guidelines, which requires that the Lead Agency "adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects." The MMRP has been prepared in tabular form (see **Table C**). The MMRP lists mitigation measures recommended in the Final EIR and identifies mitigation monitoring requirements.

Table C presents the mitigation measures identified for the proposed Project. Each mitigation measure is numbered with a symbol indicating the resource section to which it pertains, a hyphen, and the impact number. For example, Mitigation Measure AES-1 is the first mitigation measure identified in the Final EIR under the Aesthetics Section.

The first column of **Table C** identifies the mitigation measure. The second column, entitled "Party Responsible for Implementing Mitigation," names the party responsible for carrying out the required action. The third column, "Implementation Timing," identifies the time the mitigation measure should be initiated. The fourth column, "Party Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. "Action by Monitor" outlines the steps for monitoring the action identified in the mitigation measure. The last column, entitled "Monitoring Timing," states the time the monitor must ensure that the mitigation measure has been implemented.

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
Aesthetics					
Mitigation Measure AES-1: The County of San Joaquin shall provide barriers at the edges of the parcel lines at Assessor's Parcel Number (APN) 25007002, 25007003, and 25008015 that are facing the new roadway. The barriers shall be made of materials that would block the headlight spillage of vehicles traveling along the new roadway. APNs 25012003 and 25008016 may also experience headlight spillage onto their parcels, and implementation of sound walls (as described in Section 4.8, Noise, of this Environmental Impact Report) to reduce noise impacts would also be effective in reducing light intrusion onto these properties.	County of San Joaquin	During construction	County of San Joaquin	Ensure barriers are provided at the edges of parcels 25007002, 25007003, and 25008015 that are facing the new roadway.	During construction
Agriculture and Forestry Resources					
Mitigation Measure AG-1: The San Joaquin County Public Works Department shall satisfy the mitigation requirements as set forth in the Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, where the San Joaquin County Public Works Department shall purchase land in equivalent condition to the Important Farmland that would be lost due to Project implementation at a 1:1 ratio. As such, the San Joaquin County Public Works Department shall purchase 27.2 acres of Agricultural Land equivalent in condition to the Important Farmland and existing designated Agricultural Land that would be saved in perpetuity in the form of farmland conservation easement or other farmland conservation mechanism. The purchase shall be approved by the Agricultural Technical Advisory Committee and the County Board of Supervisors. The San Joaquin County Public Works Department also has the option to pay in-lieu fees in accordance with Ordinance Code of San Joaquin County, Chapter 9-1080, Agricultural Mitigation, and through approval of the Agricultural Technical Advisory Committee and the County Board of Supervisors. The in-lieu fees would equate to the value of the	San Joaquin County Public Works Department	Prior to approval of the Project	County of San Joaquin	Ensure the purchase of land in equivalent condition to the Important Farmland that would be lost or payment of in-lieu fees.	Prior to approval of the Project

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
agricultural land that would be lost due to proposed Project implementation. The in-lieu fees would be administered to fulfill programmatic responsibilities, including coverage of acquiring interests in land and administering, monitoring, and enforcing the farmland conservation easement or other instrument designed to preserve the agricultural value of the land for farmland mitigation purposes. The San Joaquin County Public Works Department shall satisfy this mitigation measure prior to approval of the proposed Project.					
Air Quality					
Mitigation Measure AIR-1: The Project contractor, on behalf of the San Joaquin County Public Works Department, shall prepare a Dust Control Plan for excavation and construction activities at the Project site pursuant to the requirements and regulations of the San Joaquin Valley Air Pollution Control District (SJVAPCD), including Regulation VIII. The Dust Control Plan would be developed prior to initiation of construction activities in coordination with the SJVAPCD. The SJVAPCD would maintain a copy of the Dust Control Plan for its records. The Project contractor shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of construction and maintenance activities at the Project site. The Dust Control Plan shall include, at a minimum, the following measures: • Apply water to unpaved surfaces and areas • Outfitting all personnel on site with appropriate respiratory equipment; the equipment must be properly fitted and personnel must be trained in its use; • Providing worker hygiene stations and training; • Prior to construction, provide information on causes, preventative measures, symptoms, and treatments for Valley Fever to individuals who could potentially be	Project contractor	Prior to initiation of construction activities	SJVAPCD	Ensure preparation of Dust Control Plan	Prior to initiation of construction activities

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
exposed through construction activities (i.e., construction workers); • The County shall continue outreach and coordination with the California Department of Public Health to ensure that the information regarding Valley Fever is readily available to nearby residents, schools, and businesses; • Use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas; • Limit or reduce vehicle speed on unpaved roads and traffic areas; • Maintain areas in a stabilized condition by restricting vehicle access; • Install wind barriers; • During high winds (the Dust Control Plan will specify a threshold for implementing "high wind" measures), cease outdoor activities that disturb the soil; • Keep bulk materials sufficiently wet when handling • Store and handle materials in a three-sided structure; • When storing bulk materials, apply water to the surface or cover the storage pile with a tarp; • Haul trucks shall not be overloaded; • Cover haul trucks with a tarp or other suitable cover, or wet the top of the load enough to limit visible dust emission; • Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site; • Prevent trackout by installing a trackout control device; • Clean up trackout at least once per day; and, • Monitor dust-generating activities and implement appropriate measures for maximum dust control.					

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
Mitigation Measure AIR-2: The San Joaquin County Public Works Department shall include a condition of approval requiring the submission of an Air Impact Assessment (AIA) application before receiving final discretionary approval for the Project. The AIA application shall be submitted to the SJVAPCD on a form provided by the SJVAPCD and shall contain the following: • Applicant name and address; • Detailed Project description, including the items specified in SJVAPCD Rule 9510; • On-Site Emission Reduction Checklist; • Monitoring and Reporting Schedule; • Off-Site Fee Deferral Schedule; and • AIA.	San Joaquin County Public Works Department	Prior to approval of the Project	SJVAPCD	Ensure submission of AIA	Prior to approval of the Project
Biological Resources					
Mitigation Measure BIO-1: In accordance with the San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP) compensation strategy, impacts to habitat for special-status plant and animal species covered under the SJMSCP shall be mitigated through implementation of one or more of the following options, subject to approval by the SJCOG: • Payment of the appropriate mitigation fee; • Dedication of mitigation lands; • Purchase of approved mitigation bank credits; or • Proposing an alternative mitigation plan.	County of San Joaquin	Prior to approval of the Project	SJCOG	Ensure mitigation of impacts to habitat for special status plan and animal species in accordance with SJMSCP	Prior to approval of the Project
Mitigation Measure BIO-2: Implementation of the following applicable SJMSCP Incidental Take Minimization Measures (ITMM) for Swainson's hawk, western burrowing owl, ground nesting or streamside/lakeside nesting birds (northern harrier, horned lark, western grebe, short-eared owl), birds nesting in isolated trees or outside of riparian areas (sharp-shinned Hawk, yellow warbler, loggerhead shrike), and all bats.	County of San Joaquin	Prior to and during construction	County of San Joaquin	Ensure implementation of applicable SJMSCP ITMM	Prior to and during construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
Swainson's Hawk. The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, that the hawks prefer for nesting) or removing the nest trees. If the Project Proponent elects to retain a nest tree the following ITMMs shall be implemented during construction activities to encourage tree retention: • If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. • If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied. These ITMMs are consistent with the provisions of the Migratory Bird Treaty Act (MBTA), as described in Section 5.2.3.1(g) of the SJMSCP. **Western Burrowing Owl.** The presence of ground squirrels and squirrel burrows is attractive to western burrowing owls. Western burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the Project site early in the planning process by employing one of the following practices: a. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches (36") above the ground. Vegetation should be retained until					

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
construction begins. Vegetation would discourage both ground squirrel and owl use of the site. b. Alternatively, if western burrowing owls are not known or suspected on the Project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders, the Project Proponent may disc or plow the entire Project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the Project site. Detailed descriptions of these methods are included in Appendix A, Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County, dated March 2000: i. **Anticoagulants**. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with Environmental Protection Agency (EPA) label standards and as directed by the County Agricultural Commissioner. ii. **Zinc Phosphide**. Establish bait stations with nontreated grain 5 to 7 calendar days in advance of rodenticide application, then apply zinc phosphide to bait stations. Rodenticides shall be used in compliance with EPA label standards and as directed by the County Agricultural Commissioner. iii. **Fumigants**. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants					

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
include aluminum phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with EPA label standards and as directed by the San Joaquin County Agricultural Commissioner. iv. **Traps**. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations. If the measures described above were not attempted or were attempted but failed, and western burrowing owls are known to occupy the Project site, the following measures shall be implemented: c. During the nonbreeding season (September 1 through January 31) western burrowing owls occupying the Project site should be evicted from the Project site by passive relocation, as described in the California Department of Fish and Wildlife's (CDFW) (previously known as the California Department of Fish and Game) *Staff Report on Burrowing Owls* (1995). d. During the breeding season (February 1–August 31), occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee, (with the concurrence of the Permitting Agencies' representatives on the Advisory Committee) or a qualified biologist					

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
approved by the Permitting Agencies verifies through non-invasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1 (G) of the SJMSCP. **Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl).** A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing. These ITMMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP. **Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike).** A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.					

Table C: Mitigation Monitoring and Reporting Program

<table>
<tr><th>Mitigation Measure</th><th>Party Responsible for Implementing Mitigation</th><th>Implementation Timing</th><th>Party Responsible for Monitoring</th><th>Action by Monitor</th><th>Monitoring Timing</th></tr>
<tr><td>
These ITTMs are consistent with the provisions of the MBTA, as described in Section 5.2.3.1(G) of the SJMSCP.

<u>Bats (All).</u>

a. Prior to the nursery season indicated in Table B, Occupation Sites and Nursery Seasons for SJMSCP Covered Bats, nursery sites shall be sealed for these species.
b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the Project site. Alternatively, grating may be installed as described in Section 5.5.9 (E)(1) of the SJMSCP.
c. When colonial roosting sites in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2 of the SJMSCP.

Table B: Occupation Sites and Nursery Seasons for SJMSCP Covered Bats
<table>
<tr><th>Bat Species</th><th>Preferred Occupation Site</th><th>Nursery Season</th></tr>
<tr><td>Western mastiff bat</td><td>Cliff or rock crevice (usual), tree or snag (occasionally)</td><td>April–September</td></tr>
<tr><td>Western small-footed bat</td><td>Cave, adit, cliff, rock crevice, building</td><td>May–August</td></tr>
<tr><td>Long-eared myotis</td><td>Cave, adit, tree, snag</td><td>May–August</td></tr>
<tr><td>Fringed myotis</td><td>Cave, adit, cliff, rock crevice, building</td><td>May–August</td></tr>
<tr><td>Long-legged myotis</td><td>Cave, adit, cliff, rock crevice, tree, snag, building</td><td>May–August</td></tr>
<tr><td>Western red bat</td><td>Tree, snag, cave (occasionally)</td><td>May–August</td></tr>
<tr><td>Yuma myotis</td><td>Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag</td><td>May–August</td></tr>
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</td><td></td><td></td><td></td><td></td><td></td></tr>
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Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
Townsend's big-eared bat | Cave, adit, cliff, rock crevice, structure, cistern, bridge | April–August SJMSCP = San Joaquin County Multi-Species Habitat Conservation & Open Space Plan					
Cultural Resources					
Mitigation Measure CULT-1: Preconstruction Training. The Project Proponent shall retain a professional archaeologist to provide a pre-construction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant pre contact and/or historic-period archaeological cultural resources within the Project area. The briefing shall discuss and describe the type and nature of archaeological artifacts or features that could be exposed during Project ground disturbance, as well as the procedures for temporarily halting activity in the vicinity and protecting the find until notification can occur and it can be assessed.	County of San Joaquin – appointed archaeologist and excavation contractor	Prior to construction	County of San Joaquin	Ensure a pre-construction briefing is provided	Prior to construction
Mitigation Measure CULT-2: Should archaeological deposits be encountered during Project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology shall be contacted to assess the situation, consult with agencies as appropriate (as well as tribal descendants, if the find is pre-contact in nature) and make recommendations for the treatment of the discovery. If found to be significant (i.e., eligible for listing in the CRHR), the County shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis of archaeological deposits, further tribal consultation (as warranted), and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigation measures, a report documenting the methods, findings, and recommendations shall	County of San Joaquin, appointed archaeologist and construction contractor	During construction	County of San Joaquin	Ensure ground-disturbing activities within 25 feet are redirected and archaeology assessment is completed if archaeological deposits are encountered.	During construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
be prepared and submitted to the County for review. The final report shall be submitted to the CCIC at California State University, Stanislaus. Significant archaeological materials shall be submitted to an appropriate curation facility. The County shall inform its contractor(s) of the sensitivity of the study area for archaeological deposits and shall verify that the following directive has been included in the appropriate contract documents/specifications: *"The subsurface of the construction site may be sensitive for archaeological deposits. If archaeological deposits are encountered during Project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any archaeological materials. Prehistoric archaeological deposits can include shellfish remains; bones; flakes of, and tools made from, obsidian, chert, and basalt; and mortars and pestles. Historic-period archaeological deposits can include concentrations of historic glass, cans, ceramics, or other "trash," as well as structural features including buried wells, foundations, or privies."*					
Mitigation Measure CULT-5: If paleontological resources are encountered during Project excavation and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be retained to evaluate the find and make recommendations for additional paleontological mitigation, which may include paleontological monitoring; collection of observed resources; preservation, stabilization, and identification of collected resources; curation of resources into a museum repository; and preparation of a final report documenting the monitoring	County of San Joaquin, appointed paleontologist and construction contractor	During construction	County of San Joaquin	Ensure ground-disturbing activities within 50 feet and paleontologist evaluation is completed if paleontological resources are encountered	During construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
methods and results to be submitted to the museum repository and the County.					
Mitigation Measure CULT-6: Treatment of Previously Unidentified Human Remains. If human remains are encountered, these remains shall be treated in accordance with California Health and Safety Code §7050.5 and the appropriate procedures described above for archaeological deposits. The County shall inform its contractor(s) of the appropriate procedures for treatment of human remains by including the following directive in contract documents/specifications: *"If human remains are encountered during Project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods."*	County of San Joaquin and construction contractor	Prior to and during construction	County of San Joaquin	Ensure that, if encountered, human remains are treated in accordance with California Health and Safety Code §7050.5 and appropriate procedures for archaeological deposits	Prior to and during construction
Geology and Soils					
Mitigation Measure GEO-1: Any foundations and structure support for the project shall be designed to prevent uplift of the supported structures.	County of San Joaquin	During construction	County of San Joaquin	Ensure foundations and structure support is designed to prevent uplift	During construction
Mitigation Measure GEO-2: Any foundation and structure support for the project shall be designed to resist forces exerted on the foundation due to soil volume changes, or shall be isolated from the expansive soil.	County of San Joaquin	During construction	County of San Joaquin	Ensure foundations and structure support is designed to resist forces from soil volume changes	During construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
				or isolated from the expansive soil	
Hazards and Hazardous Materials					
Mitigation Measure HAZ-1: The Project would disturb more than 1 acre of soil and is subject to a Construction Permit from the State Water Board, which requires development of a Stormwater Pollution Prevention Plan and a Spill Prevention Countermeasure Plan (SPCP). Prior to commencement of construction activities, the construction contractor shall prepare an SPCP and submit the plan to San Joaquin County Environmental Health Department. The SPCP shall include information on the nature of all hazardous materials that would be used on-site during the construction period and information regarding proper handling of hazardous materials and clean-up procedures in the event of an accidental release. The SPCP shall be available on the Project site through the duration of the construction period. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCP.	County of San Joaquin	Prior to and during construction	San Joaquin Environmental Health Department	Ensure preparation, submission and availability of SPCP	Prior to and during construction
Mitigation Measure HAZ-2: A construction management plan shall be prepared that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The construction management plan shall include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency find, consultation with that agency, and protocols for further action. In such instances, construction activities would cease until it is determined in	County of San Joaquin and construction contractor	Prior to and during construction	County of San Joaquin	Ensure preparation of construction management plan for areas where the presence of undocumented soil or groundwater contamination is suspected	Prior to and during construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.					
Hydrology and Water Quality					
Mitigation Measure HYDRO-1: Construction site temporary BMPs and any subsequent permit requirements as they relate to construction activities for the project shall be prepared and implemented. This documentation shall include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the commencement of construction and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. These temporary BMPs shall be installed prior to any construction operations and shall be in place for the duration of the contract. The removal of these BMPs along with site cleanup shall be the final construction operation procedures.	County of San Joaquin	Prior to and during construction	Regional Water Quality Control Board	Ensure temporary BMPs and permit requirements are prepared and implemented	Prior to and during construction
Mitigation Measure HYDRO-2: To control stormwater and sedimentation during the construction and operational periods of the project, BMPs outlined in any authorizations or permits issued under the authority of the CWA shall be implemented. Stormwater control measures shall be designed to accommodate stormwater generated by the project. If such BMPs are ineffective, the San Joaquin County (Public Works) shall remedy the situation immediately, in consultation with the regulatory and resource agencies.	County of San Joaquin	During construction and operation	County of San Joaquin	Ensure implementation of BMPs and permits and design of appropriate stormwater control measures	During construction and operation
Mitigation Measure HYDRO-3: Detention basins shall be incorporated into Project design such that post-construction conditions replicate the natural drainage patterns of the site. Since the Project will create new impervious surfaces, the basins will mitigate for increased runoff.	County of San Joaquin	During construction and operation	County of San Joaquin	Ensure incorporation of detention basins	During construction and operation
Mitigation Measure HYDRO-4: Roadside ditches will be provided adjacent to the new roadway to convey drainage from the roadway to bioretention areas and detention basins and culvert	County of San Joaquin	During construction and operation	County of San Joaquin	Ensure roadside ditches are provided along roadway	During construction and operation

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
pipes will be used to carry stormwater under roads where needed.					
Noise					
Mitigation Measure NOI-1: Construction activities during the four phases of Project development shall occur during any day of the week from 6:00 a.m. to 9:00 p.m. per the San Joaquin County Code. If construction activities need to occur outside of this time frame, the construction contractor shall notify the County, and approval of extended construction activity hours shall be approved by the San Joaquin County Board of Supervisors. The County Board of Supervisors, if approval is granted, may require additional conditions of approval to ensure that construction activity noise levels are as low as possible. The construction contractor would be required to abide by such conditions of approval if the request of construction activity times is approved by the County Board of Supervisors.	County of San Joaquin	During construction	County of San Joaquin	Ensure construction activities occur any day of the week from 6:00 a.m. to 9:00 p.m. unless approval of extended construction activity hours is granted.	During construction
Mitigation Measure NOI-2: The following minimization measures shall be implemented, to the extent feasible, during construction activities: • The Project construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest sensitive receptors. • The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project construction areas. • A temporary 10-foot-high perimeter wall shall be placed along the property lines such that the line of sight from ground-level construction equipment and sensitive receptors would be blocked. The construction barrier may be a 0.5-inch-thick plywood fence or another material that has a minimum Sound Transmission Class rating of 28.	County of San Joaquin and Construction Contractor	Prior to and during construction	County of San Joaquin	Ensure construction equipment is located away from noise-sensitive receptors, placement of 10-foot-high perimeter wall, and continuation of County public relations with residents and businesses near the Project site.	Prior to and during construction

Table C: Mitigation Monitoring and Reporting Program

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing
• Prior to commencement of Project construction, staff from San Joaquin County shall continue public relations with residents and businesses near the Project site by providing construction information pamphlets to those residents and businesses within 500 feet of the Project site. The construction pamphlets shall describe the type of construction activities that would occur and the duration of Project construction, indicate that a temporary increase in ambient noise levels could occur during Project construction, and provide a phone number where concerned residents and business owners can call County staff if noise levels from construction activities become a nuisance.					
Mitigation Measure NOI-3: As part of the proposed Project, noise barriers shall be constructed by the County at the property lines of sensitive receptors SR-1, SR-4, and SR-5. The barriers that are installed shall be constructed such that noise levels from adjacent transportation sources would be reduced by a minimum of 5 dBA L_{dn} and shall be installed prior to opening the proposed Project to traffic.	County of San Joaquin	Prior to opening the Project to traffic	County of San Joaquin	Ensure construction of noise barriers such that noise levels from adjacent transportation sources be reduced by a minimum of 5 dBA L_{dn}	Prior to opening the Project to traffic

Source: LSA 2018

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APPENDIX D

LESA MODEL

CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual

For further information, please contact:

California Department of Conservation
Office of Land Conservation
801 K Street, MS 13-71
Sacramento, CA 95814-3528
(916) 324-0850
FAX (916) 327-3430

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CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual
1997

Department of Conservation
Office of Land Conservation

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EXECUTIVE SUMMARY

Land Evaluation and Site Assessment (LESA) is a term used to define an approach for rating the relative quality of land resources based upon specific measurable features. The formulation of a California Agricultural LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, with developing an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines concerning agricultural lands. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095).

The California Agricultural LESA Model is composed of six different factors. Two Land Evaluation factors are based upon measures of soil resource quality. Four Site Assessment factors provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. It is this project score that becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds. This Manual provides detailed instructions on how to utilize the California LESA Model, and includes worksheets for applying the Model to specific projects.

INTRODUCTION

Defining the LESA System

The Land Evaluation and Site Assessment (LESA) system is a point-based approach that is generally used for rating the relative value of agricultural land resources. In basic terms, a given LESA model is created by defining and measuring two separate sets of factors. The first set, Land Evaluation, includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second set, Site Assessment, includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. While this dual rating approach is common to all LESA models, the individual land evaluation and site assessment factors that are ultimately utilized and measured can vary considerably, and can be selected to meet the local or regional needs and conditions for which a LESA model is being designed to address. In short, the LESA methodology lends itself well to adaptation and customization in individual states and localities. Considerable additional information on LESA may be found in *A Decade with LESA - the Evolution of Land Evaluation and Site Assessment* (8).

Background on LESA Nationwide

In 1981, the federal Natural Resources Conservation Service (NRCS), known then as the Soil Conservation Service, released a new system that was designed to provide objective ratings of the agricultural suitability of land compared to demands for nonagricultural uses of lands. The system became known as Land Evaluation and Site Assessment, or LESA. Soon after it was designed, LESA was adopted as a procedural tool at the federal level for identifying and addressing the potential adverse effects of federal programs (e.g., funding of highway construction) on farmland protection. The Farmland Protection Policy Act of 1981 (5) spells out requirements to ensure that federal programs, to the extent practical, are compatible with state, local, and private programs and policies to protect farmland, and calls for the use of LESA to aid in this analysis. Typically, staff of the NRCS is involved in performing LESA scoring analyses of individual projects that involve other agencies of the federal government.

Since its inception, the LESA approach has received substantial attention from state and local governments as well. Nationwide, over two hundred jurisdictions have developed local LESA methodologies (7). One of the attractive features of the LESA approach is that it is well suited to being modified to reflect regional and local conditions. Typical local applications of LESA include assisting in decision making concerning the sitting of projects, changes in zoning, and spheres of influence determinations. LESA is

also increasingly being utilized for farmland protection programs, such as the identification of priority areas to concentrate conservation easement acquisition efforts.

Because of the inherent flexibility in LESA model design, there is a broad array of factors that a given LESA model can utilize. Some LESA models require the measurement of as many as twenty different factors. Over the past 15 years, the body of knowledge concerning LESA model development and application has begun to indicate that LESA models utilizing only several basic factors can capture much of the variability associated with the determination of the relative value of agricultural lands. In fact, LESA models with many factors are increasingly viewed as having redundancies, with different factors essentially measuring the same features, or being highly correlated with one another. Additional information on the evolution and development of the LESA approach is provided in, A *Decade with LESA -The Evolution of Land Evaluation and Site Assessment* (8).

Development of the California Agricultural LESA Model

In 1990 the Department of Conservation commissioned a study to investigate land use decisions that affect the conversion of agricultural lands in California. The study, conducted by Jones and Stokes Associates, Inc., was prepared in response to concerns about agricultural land conversion identified in the *California Soil Conservation Plan* (1) (developed by the ad hoc Soil Conservation Advisory Committee serving the Department of Conservation in 1987). Among these concerns was the belief that there was inadequate information available concerning the socioeconomic and environmental implications of farmland conversions, and that the adequacy of current farmland conversion impact analysis under the California Environmental Quality Act (CEQA) was not fully known. The findings of this study are included in the publication, *The Impacts of Farmland Conversion in California* (2).

Currently, neither CEQA nor the State CEQA Guidelines contains procedures or specific guidance concerning how agencies should address farmland conversion impacts of projects. The only specific mention of agricultural issues is contained in Appendix G of the State CEQA Guidelines, which states that a project will normally have a significant effect on the environment if it will “convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land”.

Among the conclusions contained in *The Impacts of Farmland Conversion in California* study was that the lack of guidance in how lead agencies should address the significance of farmland conversion impacts resulted in many instances of no impact analysis at all. A survey of environmental documents sent to the Governor's Office of Planning and Research (OPR) between 1986 and 1988 was performed. The survey

showed that among projects that affected at least 100 acres of land and for which agriculture was a project issue, nearly 30 percent received Negative Declarations, and therefore did not did not receive the environmental impact analysis that would be provided by an Environmental Impact Report (EIR).

Of those projects involving the conversion of agricultural lands and being the subject of an EIR, the study found a broad range of approaches and levels of detail in describing the environmental setting, performing an impact analysis, and providing alternative mitigation measures. The only agricultural impacts found to be significant in the EIRs were those involving the direct removal of prime agricultural lands from production by the project itself. The focus on prime farmland conversion in the projects surveyed was deemed to be related to the narrow direction provided in Appendix G of the State CEQA Guidelines.

The formulation of a California LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, to develop an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095). This legislation authorizes the Department of Conservation to develop a California LESA Model, which can in turn be adopted as the required amendment to Appendix G of the CEQA Guidelines.

Presentation of the California LESA Model

The California LESA Model is presented in this Manual in the following sections:

Section I. provides a listing of the information and tools that will typically be needed to develop LESA scores for individual projects.

Section II. provides step-by-step instructions for scoring each of the six Land Evaluation and Site Assessment factors that are utilized in the Model, with an explanation of the rationale for the use of each factor.

Section III. defines the assignment of weights to each of the factors relative to one another, and the creation of a final LESA score for a given project.

Section IV. assigns scoring thresholds to final LESA scores for the purpose of determining the significance of a given project under CEQA where the conversion of agricultural lands is a project issue.

Additionally:

Appendix A. provides an abridged set of step-by-step LESA scoring instructions that can be used and reproduced for scoring individual projects.

Appendix B. demonstrates the application of the California LESA Model to the scoring of a hypothetical project.

The California Agricultural LESA Model

Section I. Required Resources and Information

The California Land Evaluation and Site Assessment (LESA) Model requires the use and interpretation of basic land resource information concerning a given project. A series of measurements and calculations is also necessary to obtain a LESA score. Listed below are the materials and tools that will generally be needed to make these determinations.

Land Evaluation and Site Assessment calculations will require:

1. A calculator or other means of tabulating numbers

2. An accurately scaled map of the project area, such as a parcel map

3. A means for making acreage determinations of irregularly shaped map units. Options include, from least to most technical:

    - A transparent grid-square or dot-planimeter method of aerial measurement

    - A hand operated electronic planimeter

    - The automatic planimetry capabilities of a Geographic Information System (GIS)

4. A modern soil survey, generally produced by the USDA Natural Resources Conservation Service, which delineates the soil-mapping units for a given project. [Note: If modern soil survey information is not available for a given area of study, it may be necessary to draw upon the services of a professional soil scientist to perform a specific project survey].

5. Maps that depict land uses for parcels including and surrounding the project site, such as the Department of Conservation's Important Farmland Map series, the Department of Water Resources Land Use map series, or other appropriate information.

6. Maps or information that indicate the location of parcels including and surrounding the project site that are within agricultural preserves, are under public ownership, have conservation easements, or have other forms of long term commitments that are considered compatible with the agricultural use of a given project site.

Section II. Defining and Scoring the California Land Evaluation and Site Assessment Model Factors

This section provides detailed step-by-step instructions for the measurement and scoring of each of the Land Evaluation and Site Assessment factors that are utilized in the California Agricultural LESA Model, and is intended to serve as an introduction to the process of utilizing the Model. Once users are familiar with the Model, a more streamlined set of instructions and scoring sheets is available in Appendix A. In addition, the scoring of a hypothetical project is presented using these scoring sheets in Appendix B.

Scoring of Land Evaluation Factors

The California LESA Model includes two Land Evaluation factors that are separately rated:

1. The Land Capability Classification Rating
2. The Storie Index Rating

The information needed to make these ratings is typically available from soil surveys that have been conducted by the federal Natural Resources Conservation Service (formerly known as the Soil Conservation Service). Consultation should be made with NRCS staff (field offices exist in most counties) to assure that valid and current soil resource information is available for the project site. Copies of soil surveys are available at local field offices of the NRCS, and may also be available through libraries, city and county planning departments, the Cooperative Extension, and other sources. In addition, a Certified Professional Soil Scientist (CPSS) may also be consulted to obtain appropriate soil resource information for the project site. A directory of CPSS registered soil consultants is available through the Professional Soil Scientists Association of California, P.O. Box 3213, Yuba City, CA 95992-3213; phone: (916) 671-4276.

1) The USDA Land Capability Classification (LCC) - The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops, and the risk of damage to soils when they are used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receive the highest rating (Class I). Specific subclasses are also utilized to further characterize soils. An expanded explanation of the LCC is included in most soil surveys.

2) The Storie Index - The Storie Index provides a numeric rating (based upon a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are

considered in the index rating. The factors are: profile characteristics, texture of the surface layer, slope, and other factors (e.g., drainage, salinity).

In some situations, only the USDA Land Capability Classification information may be currently available from a given published soil survey. However, Storie Index ratings can readily be calculated from information contained in soil surveys by qualified soil scientists. Users are encouraged to seek assistance from NRCS staff or Certified Professional Soil Scientists to derive Storie Index information for the soils as well. If, however, limitations of time or resources restrict the derivation of Storie Index ratings for the soils within a region, it may be possible to adapt the Land Evaluation by relying solely upon the LCC rating. Under this scenario the LCC rating would account for 50 percent of the overall LESA factor weighting.

Identifying a Project's Soils

In order to rate the Land Capability Classification and Storie Index factors, the evaluator must identify the soils that exist on a given project site and determine their relative proportions. A **Land Evaluation Worksheet** (Table 1A.) is used to tabulate these figures, based upon the following:

Step 1.
Locate the project on the appropriate map sheet in the Soil Survey.

Step 2.
Photocopy the map sheet and clearly delineate the project boundaries on the map, paying close attention to the map scale.

Step 3.
Identify all of the soil mapping units existing in the project site (each mapping unit will have a different map unit symbol) and enter the each mapping unit symbol in **Column A** of the **Land Evaluation Worksheet** (Table 1A).

Step 4.
Calculate the acreage of each soil mapping unit present within the project site using any of the means identified in **Section 1**, **Required Resources and Information**, and enter this information in **Column B**.

Step 5.

Divide the acres of each soil mapping unit by the total project acreage to determine the proportion of each unit that comprises the project, and enter this information in Column C.

1. Land Evaluation - The Land Capability Classification Rating

Step 1.
In the Guide to Mapping Units typically found within soil surveys, identify the Land Capability Classification (LCC) designation (e.g., IV-e) for each mapping unit that has been identified in the project and enter these designations in **Column D** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
From Table 2., **The Numeric Conversion of Land Capability Classification Units**, obtain a numeric score for each mapping unit, and enter these scores in **Column E**.

Step 3.
Multiply the proportion of each soil mapping unit (**Column C**) by the LCC points for each mapping unit (**Column E**) and enter the resulting scores in **Column F**.

Step 4.
Sum the LCC scores in **Column F** to obtain a single LCC Score for the project. Enter this LCC Score in **Line 1** of the **Final LESA Worksheet** (Table 8)

Table 2. Numeric Conversion of Land Capability Classification Units

Land Capability Classification	LCC Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs,w	60
IVe	50
IVs,w	40
V	30
VI	20
VII	10
VIII	0

Soils in permanent impact areas of project boundary only

Table 1A.
Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
118	25.0	1.0	IIs	80	80	44	44
Totals	25.0	(Must Sum to 1.0)		***LCC Total***	80	***Storie Index Total***	44

Table 1B.
Site Assessment Worksheet 1.

Project Size Score

	I	J	K
	LCC Class I - II	LCC Class III	LCC Class IV - VIII
	25.0		
Total Acres	25.0		
Project Size Scores	50		

Highest Project Size Score 50

2. Land Evaluation - The Storie Index Rating Score

Step 1.
From the appropriate soil survey or other sources of information identified in Appendix C, determine the Storie Index Rating (the Storie Index Rating is already based upon a 100 point scale) for each mapping unit and enter these values in **Column G** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
Multiply the proportion of each soil mapping unit found within the project (**Column C**) by the Storie Index Rating (**Column G**), and enter these scores in **Column H**.

Step 3.
Sum the Storie Index Rating scores in **Column H** to obtain a single Storie Index Rating score for the project. Enter this Storie Index Rating Score in **Line 2** of the **Final LESA Worksheet** (Table 8)

Scoring of Site Assessment Factors

The California LESA Model includes four Site Assessment factors that are separately rated:

1. **The Project Size Rating**
2. **The Water Resources Availability Rating**
3. **The Surrounding Agricultural Land Rating**
4. **The Surrounding Protected Resource Land Rating**

1. Site Assessment - The Project Size Rating

The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating in Table 1A. The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes within the project site, and then determining which grouping generates the highest Project Size Score.

Step 1.
Using information tabulated in **Columns B** and **D** of the **Land Evaluation Worksheet** (Table 1A), enter acreage figures in **Site Assessment Worksheet 1. - Project Size** (Table 1B) using either **Column I, J,** or **K** for each of the soil mapping units in a given project.

Step 2.
Sum the entries in **Column I** to determine the total acreage of Class I and II soils on the project site.

Sum the entries in **Column J** to determine the total acreage of Class III soils on the project site.

Sum the entries in **Column K** to determine the total acreage of Class IV and lower rated soils on the project site.

Step 3.
For each of the three columns, apply the appropriate scoring plan provided in Table 3, **Project Size Scoring**, and enter the **Project Size Score** for each grouping in the **Site Assessment Worksheet 1. - Project Size** (Table 1B). Determine which column generates the highest score. The highest score becomes the overall **Project Size Score**. Enter this number in **Line 3** of the **Final LESA Scoresheet** (Table 8).

Table 3. Project Size Scoring

LCC Class I or II soils		LCC Class III soils		LCC Class IV or lower	
Acres	***Score***	***Acres***	***Score***	***Acres***	***Score***
80 or above	100	160 or above	100	320 or above	100
60-79	90	120-159	90	240-319	80
40-59	80	80-119	80	160-239	60
20-39	50	60-79	70	100-159	40
10-19	30	40-59	60	40-99	20
fewer than 10	0	20-39	30	fewer than 40	0
		10-19	10		
		fewer than 10	0		

Explanation of the Project Size Factor

The Project Size factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3).

The inclusion of the measure of a project's size in the California Agricultural LESA Models is a recognition of the role that farm size plays in the viability of commercial agricultural operations. In general, larger farming operations can provide greater flexibility in farm management and marketing decisions. Certain economies of scale for equipment and infrastructure can also be more favorable for larger operations. In addition, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon support industries (e.g., fertilizers, farm equipment, and shipping) and food processing industries.

While the size of a given farming operation may in many cases serve as a direct indicator of the overall economic viability of the operation, The California Agricultural LESA Model does not specifically consider the issue of economic viability. The variables of economic viability for a specific farm include such factors as the financial management and farming skills of the operator, as well as the debt load and interest rates being paid by an individual operator, which are issues that cannot readily be included in a statewide LESA model.

In terms of agricultural productivity, the size of a farming operation can be considered not just from its total acreage, but the acreage of different quality lands that comprise the operation. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide a greater economic return per unit acre. For a given project, instead of relying upon a single acreage figure in the Project Size rating, the project is divided into three acreage groupings based upon the Land Capability Classification ratings that were previously determined in the Land Evaluation analysis. Under the Project Size rating, relatively fewer acres of high quality soils are required to achieve a maximum Project Size score. Alternatively, a maximum score on lesser quality soils could also be derived, provided there is a sufficiently large acreage present. Acreage figures utilized in scoring are the synthesis of interviews that were conducted statewide for growers of a broad range of crops. In the interviews growers were queried as to what acreage they felt would be necessary in order for a given parcel to be considered attractive for them to farm.

The USDA LCC continues to be the most widely available source of information on land quality. Project Size under this definition is readily measurable, and utilizes much of the same information needed to score a given project under the Land Evaluation component of the methodology. This approach also complements the LE determination, which, while addressing soil quality, does not account for the total acreage of soils of given qualities within a project.

This approach allows for an accounting of the significance of high quality agricultural land as well as lesser quality agricultural lands, which by virtue of their large area can be considered significant agricultural resources. In this way, no single acreage figure for a specific class of soils (e.g., soils defined as “prime”) is necessary.

2. Site Assessment - The Water Resources Availability Rating

The Water Resources Availability Rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought. **Site Assessment Worksheet 2. - Water Resources Availability Worksheet** (Table 4) is used to tabulate the score.

Step 1.
Identify the different water resource types that are used to supply the proposed project site (for example, irrigation district water, ground water, and riparian water are considered to be three different types of water resources). Where there is only one water source identified for the proposed project, skip to Step 4.

Step 2.
Divide the proposed project site into portions, with the boundaries of each portion being defined by the irrigation water source(s) supplying it. A site that is fully served by a single source of water will have a single portion, encompassing the entire site. A site that is fully served by two or more sources that are consistently merged together to serve a crop's needs would also have a single portion. (e.g., a portion of the proposed project may receive both irrigation district and groundwater). If the project site includes land that has no irrigation supply, consider this acreage as a separate portion as well. Enter the water resource portions of the project in **Column B** of Table 4, **Site Assessment Worksheet 2. - Water Resources Availability**.

[As an example, a hypothetical project site is determined to have four separate water supply portions:

Portion 1 is served by irrigation district water only;
Portion 2 is served by ground water only;
Portion 3 is served by *both* irrigation district water and ground water;
Portion 4 is not irrigated at all.**]**

Step 3.
Calculate the proportion of the total project area that is represented by each water resource portion, and enter these figures in **Column C** of **Site Assessment Worksheet 2. - Water Resources Availability**, verifying that the sum of the proportions equals 1.0.

Estimating that all areas are on surface water entitlements

Table 4. Site Assessment Worksheet 2. - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1	Surface water entitlements	1.0	65	65
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	65

Step 4.

For each water resource supply portion of the project site, determine whether irrigated and dryland agriculture is *feasible*, and if any *physical* or *economic restrictions* exist, during both *drought* and *non-drought* years. These italicized terms are defined below:

- A *physical restriction* is an occasional or regular interruption or reduction in a water supply, or a shortened irrigation season, that forces a change in agricultural practices -- such as planting a crop that uses less water, or leaving land fallow. (This could be from cutbacks in supply by irrigation and water districts, or by ground or surface water becoming depleted or unusable. Poor water quality can also result in a physical restriction -- for example by requiring the planting of salt-tolerant plants, or by effectively reducing the amount of available water.)

- An *economic restriction* is a rise in the cost of water to a level that forces a reduction in consumption. (This could be from surcharge increases from water suppliers as they pass along the cost of finding new water supplies, the extra cost of pumping more ground water to make up for losses in surface water supplies, or the extra energy costs of pumping the same amount of ground water from deeper within an aquifer.)

- Irrigated agricultural production is *feasible* when:

  1) There is an existing irrigation system on the project site that can serve the portion of the project identified in Step 2;

  2) *Physical* and/or *economic restrictions* are not severe enough to halt production; and

  3) It is possible to achieve a viable economic return on crops though irrigated production.

(A major question that should be considered is, if there is an irrigated crop that can be grown within the region, can it actually be grown on the project site? Depending upon the jurisdiction, some typical crops that have a large water demand may not be feasible to grow on the project site, while others that require less water are feasible. Information to aid in making this determination can be obtained from county agricultural commissioners, the UC Cooperative Extension, irrigation districts, and other sources.)

- *Dryland production* is *feasible* when rainfall is adequate to allow an economically viable return on a nonirrigated crop.

- A *drought year* is a year that lies within a defined drought period, as defined by the Department of Water Resources or by a local water agency. Many regions of the state are by their arid nature dependent upon imports of water to support irrigated agriculture. These regions shall not be considered under periods of drought unless a condition of drought is declared for the regions that typically would be providing water exports.

Step 5.
Each of the project's water resource supply portions identified in **Step 2** is scored separately. Water Resources Availability scoring is performed by identifying the appropriate condition that applies to each portion of the project, as identified in Table 5., **Water Resource Availability Scoring**. Using Table 5, identify the option that best describes the water resource availability for that portion and its corresponding water resource score. Option 1 defines the condition of no restrictions on water resource availability and is followed progressively with increasing restrictions to Option 14, the most severe condition, where neither irrigated nor dryland production is considered feasible. Enter each score into **Column D** of Table 4.

Step 6.
For each portion of the project site, determine the section's weighted score by multiplying the portion's score (**Column D**), by its proportion of the project area (**Column C**), and enter these scores in **Column E**, the weighted Water Availability Score. Sum the **Column E** scores to obtain the total Water Resource Availability Score, and enter this figure in **Line 4** of the **Final LESA Score Sheet** (Table 8).

Table 5. Water Resource Availability Scoring

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	-- --	-- --	50
9	YES	NO	YES	NO	-- --	-- --	45
10	YES	YES	NO	NO	-- --	-- --	35
11	YES	YES	YES	NO	-- --	-- --	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Explanation of the Water Resource Availability Rating

The Water Resource Availability factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3). During the development of this factor it became apparent that certain conditions unique to California would need to be represented in this system.

First, it was decided to classify water reliability based upon the *effects* on agricultural production (such as being forced to change to lower-value crops, putting in groundwater pumps, or cutting back on the acreage farmed) rather than the actual *type* of limitation (such as a limitation on the quantity, frequency, or duration of water delivery). LESA systems have traditionally focused on the latter. However, it was found that the many types of limitations are too varied in California to adequately represent in the LESA system. In the Statewide LESA system, these effects are referred to as *restrictions*.

Second, the factor had to include an interrelation with cost. The historical shortages and unreliability of California water use has led to the establishment of various interconnected and dual systems. Probably more than any other state, reliability is related with cost -- a more reliable water supply can sometimes be obtained, but at a greater cost. Therefore, *restrictions* were classified into two major categories -- *physical* and *economic*. These are separated because, generally, a physical restriction is more severe than an economic restriction and this should be reflected in the LESA system.

Third, the factor had to include the effects of the drought cycle in California. During the drought of 1987 to 1992, many agricultural areas of the state experienced water shortages. The impact of these shortages resulted in a number of different actions. Some areas were able to avoid the worst effects of the drought simply by implementing water conservation measures. Other areas were able to obtain additional water supplies, such as by securing water transfers or simply pumping more groundwater, but at an increase in the overall price of water. Other options included shifting crops, replanting to higher value crops to offset the increase in water prices, or leaving land fallow. A project site that experiences restrictions during a drought year should not be scored as high as a similar project site that does not.

The easiest way to make determinations of irrigation feasibility and the potential restrictions of water sources is to investigate the cropping history of the project site. For instance, was the water supply to the project site reduced by the local irrigation district during the last drought? If the site has a ground water supply, do area ground water levels sometimes drop to levels that force markedly higher energy costs to pump the water?

If the history of the project site is unavailable (including when the site has recently installed an irrigation system), look at the history of the general area. However, remember that the project site may have different conditions than the rest of the region. For instance, the project site could have an older water right than others in the region. Although certain areas of the state had severe restrictions on water deliveries during the last drought, some parcels within these areas had very secure deliveries due to more senior water rights. If this was the case in the region of the project site, check the date of water right and compare it with parcels that received their total allotment during the last drought. The local irrigation district should have information on water deliveries.

The scoring of water resource availability for a project site should not just reflect the adequacies of water supply in the past -- it should be a *prediction* of how the water system will perform in the future. For instance, a local jurisdiction might find that the allocation of flows to stream and river systems has been recently increased for environmental reasons, which will decrease the future available surface water supply. In this case, the past history of the site is not an adequate representation of future water supply and water system performance.

3. Site Assessment - The Surrounding Agricultural Land Rating

Determination of the surrounding agricultural land use rating is based upon the identification of a project's "Zone of Influence" (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site. The determination of the ZOI is described below, and is illustrated with an example in Figure 1.

Defining a Project's "Zone of Influence"

Step 1.
Locate the proposed project on an appropriate map and outline the area and dimensions of the proposed project site.

Step 2.
Determine the smallest rectangle that will completely contain the project site (Rectangle A).

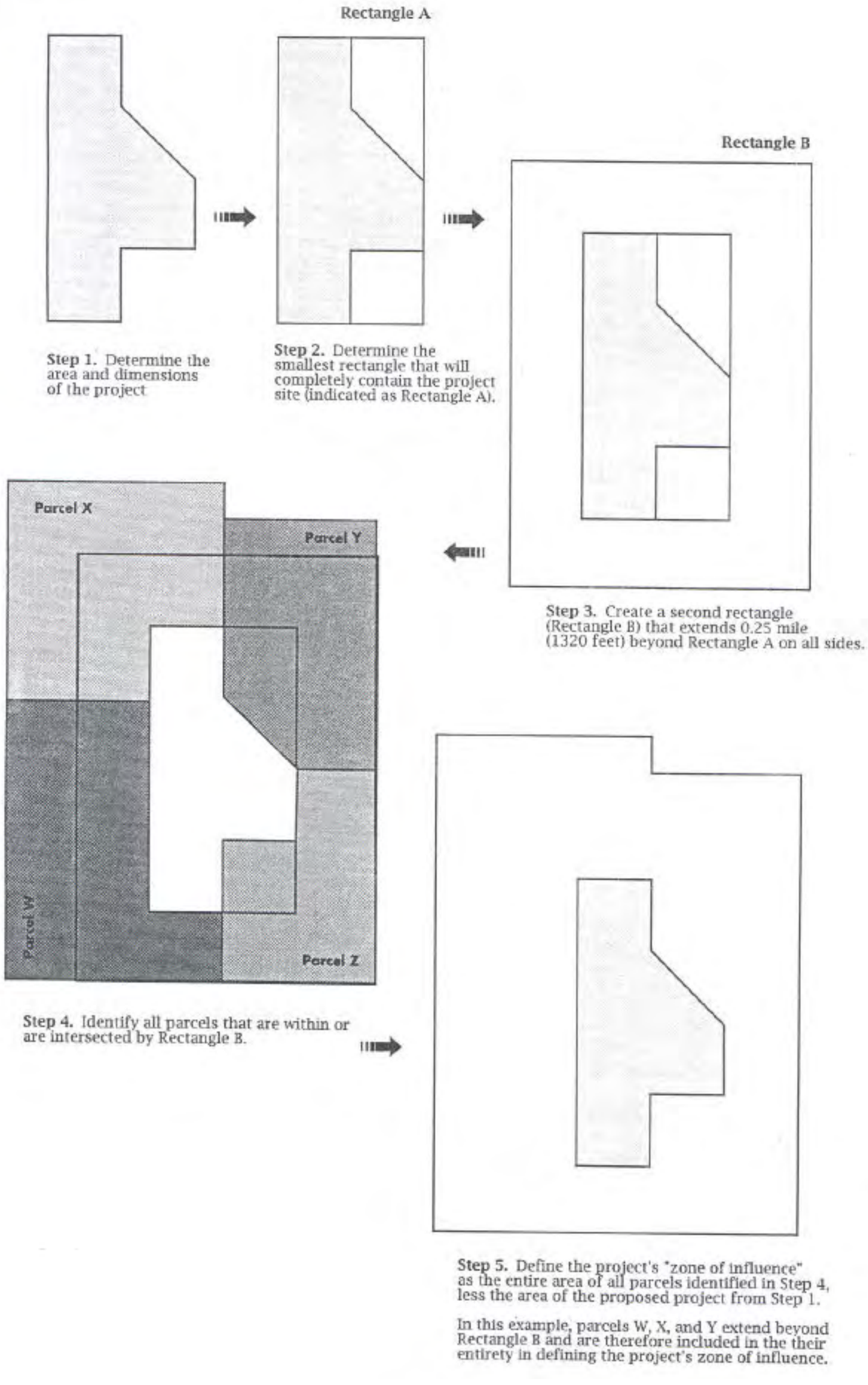
Step 3.
Create a second rectangle (Rectangle B) that extends 0.25 mile (1320 feet) beyond Rectangle A on all sides.

Step 4.
Identify all parcels that are within or are intersected by Rectangle B.

Step 5.
Define the project site's "zone of influence" as the entire area of all parcels identified in Step 4, less the area of the proposed project from Step 1.

[In the illustration provided in Figure 1, Parcels W, X, and Y extend beyond Rectangle B and are therefore included in their entirety in defining the project site's Zone of Influence.**]**

Figure 1: Defining a Project's Zone of Influence



Measuring Surrounding Agricultural Land

Step 1.
Calculate the percentage of the project's Zone of Influence that is currently producing agricultural crops. **[**This figure can be determined using information from the Department of Conservation's Important Farmland Map Series, the Department of Water Resources' Land Use Map Series, locally derived maps, or direct site inspection. For agricultural land that is currently fallowed, a determination must be made concerning whether the land has been fallowed as part of a rotational sequence during normal agricultural operations, or because the land has become formally "committed" to a nonagricultural use. Land that has become formally committed, whether fallow or not, should not generally be included in determining the proportion of the Zone of Influence that is agricultural land. For further information on the definition of Committed Land, refer to the following Explanation of the Surrounding Agricultural Land Rating.**]**

Step 2.
Based on the percentage of agricultural land in the ZOI determined in Step 1, assign a Surrounding Agricultural Land score to the project according to Table 6, and enter this score in **Line 5** of the **Final LESA Scoresheet** (Table 8) .

Table 6. Surrounding Agricultural Land Rating

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

ZOI=3,164 ac
Ag land=2,312 ac

73% ZOI in Ag

Explanation of the Surrounding Agricultural Land Rating

The Surrounding Agricultural Land Rating is designed to provide a measurement of the level of agricultural land use for lands in close proximity to a subject project. The California Agricultural LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production. The definition of a "Zone of Influence" that accounts for surrounding lands up to a minimum of one quarter mile from the project boundary is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use. In a simple example, a single one quarter mile square project (160 acres) would have a Zone of Influence that is a minimum of eight times greater (1280 acres) that the parcel itself.

Land within a Zone of Influence that is observed to be fallow will require a case by case determination of whether this land should be considered agricultural land. The Department of Conservation's Important Farmland Maps may be of assistance in making this determination. In addition, land currently in agricultural production may be designated as being "committed" to future nonagricultural development. The Department of Conservation's Farmland Mapping and Monitoring Program has a land use designation of Land Committed to Nonagricultural Use, and is defined as "land that is permanently committed by local elected officials to nonagricultural development by virtue of decisions which cannot be reversed simply by a majority vote of a city council or county board of supervisors. The "committed" land must be so designated in an adopted local general plan, and must also meet the requirements of either (a) or (b) below:

(a). It must have received one of the following final discretionary approvals:

1. Tentative subdivision map (approved per the Subdivision Map Act);
2. Tentative or final parcel map (approved per the Subdivision Map Act);
3. Recorded development agreement (per Government Code §65864);
4. Other decisions by a local government which are analogous to items #1-3 above and which exhibit an element of permanence. Zoning by itself does <u>not</u> qualify as a permanent commitment.

<u>Or</u>

(b) It must be the subject of one of the final fiscal commitments to finance the capital improvements specifically required for future development of the land in question as shown below:

1. Recorded Resolution of Intent to form a district and levy an assessment;
2. Payment of assessment;
3. Sale of bonds;
4. Binding contract, secured by bonds, guaranteeing installation of infrastructure;
5. Other fiscal commitments which are analogous to items #1-4 above and exhibit an element of permanence."

Lead agencies are encouraged to identify Land Committed to Nonagricultural Use within a project's ZOI and make the determination whether this land, while still in agricultural production, be considered nonagricultural land for the purposes of the calculation performed here.

4. Site Assessment - The Surrounding Protected Resource Land Rating

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating, and is scored in a similar manner. Protected resource lands are those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Instructions for the Surrounding Protected Resource Land Rating

Step 1.
Utilizing the same "Zone of Influence" (ZOI) area calculated for a project under the Surrounding Agricultural Land Rating, calculate the percentage of the ZOI that is Protected Resource Land, as defined above.

Step 2.
Assign a Surrounding Protected Resource Land score to the project according to Table 7, and enter this score on **Line 6** of the **Final LESA Scoresheet** (Table 8).

Table 7. Surrounding Protected Resource Land Rating

Percent of Project's Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

ZOI=3,164 ac
Protected=53.16 ac WA lands, no other public lands or conservation easements

1.68% ZOI protected

Section III. Weighting of Factors and Final LESA Scoring

The California LESA Model is weighted so that 50 percent of the total LESA score of a given project is derived from the Land Evaluation factors, and 50 percent from the Site Assessment factors. Individual factor weights are listed below, with the sum of the factor weights required to equal 100 percent.

Land Evaluation Factors

Land Capability Classification	25%
Storie Index Rating	25%
Land Evaluation Subtotal	**50%**

Site Assessment Factors

Project Size	15%
Water Resource Availability	15%
Surrounding Agricultural Lands	15%
Surrounding Protected Resource Lands	5%
Site Assessment Subtotal	**50%**
Total LESA Factor Weighting	**100%**

Each factor is measured separately (each on 100 point scale) and entered in the appropriate line in **Column B** of the **Final LESA Scoresheet** (Table 8). Each factor's score is then multiplied by its respective factor weight, resulting in a weighted factor score in **Column D** as indicated in Table 8. The weighted factor scores are summed, yielding a Total LESA Score (100 points maximum) for a given project, which is entered in **Line 7** of **Column D**.

Table 8. Final LESA Scoresheet

A	B		C		D
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Land Evaluation					
1. Land Capability Classification	<Line 1> 80	X	0.25	=	20
2. Storie Index Rating	<Line 2> 44	X	0.25	=	11
Site Assessment					
1. Project Size	<Line 3> 50	X	0.15	=	7.5
2. Water Resource Availability	<Line 4> 65	X	0.15	=	9.75
3. Surrounding Agricultural Lands	<Line 5> 70	X	0.15	=	10.5
4. Protected Resource Lands	<Line 6> 0	X	0.05	=	0
			Total LESA Score (sum of weighted factor ratings)		<Line 7> 58.75

Section IV. California Agricultural LESA Scoring Thresholds - Making Determinations of Significance Under CEQA

A single LESA score is generated for a given project after all of the individual Land Evaluation and Site Assessment factors have been scored and weighted as detailed in Sections 2 and 3. Just as with the scoring of individual factors that comprise the California Agricultural LESA Model, final project scoring is based on a scale of 100 points, with a given project being capable of deriving a maximum of 50 points from the Land Evaluation factors and 50 points from the Site Assessment factors.

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and SA subscores. In this manner the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa). Table 9 presents the California Agricultural LESA scoring thresholds.

Table 9. California LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

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1. *Conserving the Wealth of the Land - A Plan for Soil Conservation*, Department of Conservation. 1987.

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4. *LESA Guidelines for Local Jurisdictions - Project Size and Water Resource Availability Factors*. Prepared by Nichols - Berman, for the Department of Conservation. 1995.

5. Office of the Federal Register National Archives and Records Administration. The Farmland Protection and Policy Act, part 658. Code of Federal Regulations - Agriculture, Parts 400 to 699. 1990.

6. Pease, J and R. Coughlin. Land Evaluation and Site Assessment: *A Guidebook for Rating Agricultural Lands, Second Edition*; prepared for the USDA Natural Resources Conservation Service; Soil and Water Conservation Society. 1996.

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APPENDIX E

AIR QUALITY OUTPUT MODELING

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Grant Line Road Corridor Unmitigated

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.41	9.07	15.21	10.66	0.66	10.00	2.67	0.59	2.08	0.02	2,045.09	0.44	0.02	2,063.41
Grading/Excavation	7.56	53.88	83.99	14.07	4.07	10.00	5.78	3.70	2.08	0.09	9,114.60	2.48	0.09	9,203.29
Drainage/Utilities/Sub-Grade	5.71	43.32	57.09	12.95	2.95	10.00	4.82	2.74	2.08	0.08	7,325.84	1.61	0.07	7,387.14
Paving	2.28	19.45	21.13	1.34	1.34	0.00	1.20	1.20	0.00	0.03	3,211.90	0.76	0.04	3,241.37
Maximum (pounds/day)	7.56	53.88	83.99	14.07	4.07	10.00	5.78	3.70	2.08	0.09	9,114.60	2.48	0.09	9,203.29
Total (tons/construction project)	1.45	10.70	15.38	3.02	0.77	2.24	1.17	0.71	0.47	0.02	1,820.59	0.45	0.02	1,837.27

Notes:

Project Start Year ->	2017
Project Length (months) ->	24
Total Project Area (acres) ->	31
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	40
Grading/Excavation	0	0	0	0	880	40
Drainage/Utilities/Sub-Grade	0	0	0	0	760	40
Paving	0	0	0	0	600	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Grant Line Road Corridor Unmitigated

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.04	0.24	0.40	0.28	0.02	0.26	0.07	0.02	0.05	0.00	53.99	0.01	0.00	49.42
Grading/Excavation	0.80	5.69	8.87	1.49	0.43	1.06	0.61	0.39	0.22	0.01	962.50	0.26	0.01	881.67
Drainage/Utilities/Sub-Grade	0.53	4.00	5.27	1.20	0.27	0.92	0.45	0.25	0.19	0.01	676.91	0.15	0.01	619.23
Paving	0.09	0.77	0.84	0.05	0.05	0.00	0.05	0.05	0.00	0.00	127.19	0.03	0.00	116.45
Maximum (tons/phase)	0.80	5.69	8.87	1.49	0.43	1.06	0.61	0.39	0.22	0.01	962.50	0.26	0.01	881.67
Total (tons/construction project)	1.45	10.70	15.38	3.02	0.77	2.24	1.17	0.71	0.47	0.02	1820.59	0.45	0.02	1,666.76

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Grant Line Road Corridor Mitigated

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.62	12.12	3.39	10.22	0.22	10.00	2.26	0.18	2.08	0.02	2,045.09	0.44	0.02	2,063.41
Grading/Excavation	2.71	53.43	7.57	10.47	0.47	10.00	2.46	0.38	2.08	0.09	9,114.60	2.48	0.09	9,203.29
Drainage/Utilities/Sub-Grade	2.13	42.62	6.70	10.42	0.42	10.00	2.42	0.34	2.08	0.08	7,325.84	1.61	0.07	7,387.14
Paving	0.95	21.89	4.05	0.27	0.27	0.00	0.21	0.21	0.00	0.03	3,211.90	0.76	0.04	3,241.37
Maximum (pounds/day)	2.71	53.43	7.57	10.47	0.47	10.00	2.46	0.38	2.08	0.09	9,114.60	2.48	0.09	9,203.29
Total (tons/construction project)	0.54	10.77	1.67	2.35	0.10	2.24	0.55	0.08	0.47	0.02	1,820.59	0.45	0.02	1,837.27

Notes:

Project Start Year ->	2017
Project Length (months) ->	24
Total Project Area (acres) ->	31
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	40
Grading/Excavation	0	0	0	0	880	40
Drainage/Utilities/Sub-Grade	0	0	0	0	760	40
Paving	0	0	0	0	600	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Grant Line Road Corridor Mitigated

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.32	0.09	0.27	0.01	0.26	0.06	0.00	0.05	0.00	53.99	0.01	0.00	49.42
Grading/Excavation	0.29	5.64	0.80	1.11	0.05	1.06	0.26	0.04	0.22	0.01	962.50	0.26	0.01	881.67
Drainage/Utilities/Sub-Grade	0.20	3.94	0.62	0.96	0.04	0.92	0.22	0.03	0.19	0.01	676.91	0.15	0.01	619.23
Paving	0.04	0.87	0.16	0.01	0.01	0.00	0.01	0.01	0.00	0.00	127.19	0.03	0.00	116.45
Maximum (tons/phase)	0.29	5.64	0.80	1.11	0.05	1.06	0.26	0.04	0.22	0.01	962.50	0.26	0.01	881.67
Total (tons/construction project)	0.54	10.77	1.67	2.35	0.10	2.24	0.55	0.08	0.47	0.02	1820.59	0.45	0.02	1,666.76

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

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APPENDIX F

SJMSCP LIST OF COVERED SPECIES, CALIFORNIA DIVERSITY DATABASE, UNITED STATES FISH AND WILDLIFE SERVICE ONLINE SPECIAL STATUS SPECIES LIST, AND CALIFORNIA NATIVE PLANT SOCIETY ONLINE EDITION

Take at least as much as or more than the SJMSCP's established Incidental Take Minimization Measure(s); or

3. The proposed alternative(s) provide greater chances for the long-term survival of an SJMSCP Covered Species at the expense of limited, short-term biological losses (e.g., retaining a nest tree on a construction site rather than removing the nest tree resulting in reduced fledgling success during the project construction phase, but producing multiple generations of successful fledglings in the nest tree over the long-term); or

4. The provisions of Section 5.2.2.5(B)(ii) or 5.2.2.5(C) apply.

Failure to plan ahead on the part of the Project Proponent, when such planning was within the control of the Project Proponent, shall not be grounds for granting an exception under these provisions.

All exceptions granted for Incidental Take Minimization Measures pursuant to this Section also shall be reported in the SJMSCP Annual Report to the Permitting Agencies as described in Section 5.9.1.

5.2.4 INCIDENTAL TAKE MINIMIZATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING INCIDENTAL TAKE COVERAGE PURSUANT TO ESA AND CESA AND MITIGATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING CEQA COVERAGE

5.2.4.1 Valley Elderberry Longhorn Beetle (VELB)

In areas with elderberry bushes, as indicated by the *SJMSCP Vegetation Maps* or per a preconstruction survey identification or other sources indicated in Section 5.2.2.3, the following shall occur:

A. If elderberry shrubs are present on the project site, a setback of 20 feet from the dripline of each elderberry bush shall be established.

B. Brightly colored flags or fencing shall be placed surrounding elderberry shrubs throughout the construction process.

C. For all shrubs without evidence of VELB exit holes which cannot be retained on the project site as described in A and B, above, the JPA shall, during preconstruction surveys, count all stems of 1" or greater in diameter at ground level. Compensation for removal of these stems shall be provided by the JPA within SJMSCP Preserves as provided in *SJMSCP Section 5.5.4(B)*.

D. For all shrubs with evidence of VELB exit holes, the JPA shall undertake transplanting of elderberry shrubs displaying evidence of VELB occupation to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 - February 15). For elderberry shrubs displaying evidence of VELB occupation which cannot be transplanted, compensation for removal of shrubs shall be as provided in *SJMSCP Section 5.5.4 (C).*

5.2.4.2 Moestan and Molestan Blister Beetle

The biology of these species is poorly known, but the species are presumed to be extant and may be discovered in annual grasslands, foothill woodlands or saltbush (Atriplex) scrub which remain in patches within the historical occupation site of these species. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.3 Ciervo Aegialian Scarab Beetle

This species is presumed to be extirpated, because its habitat, sand dunes, have been destroyed in the County. However, if rediscovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.4 Vernal Pool Plants and Vernal Pool Invertebrates

Full avoidance of succulent owl's clover, legenere, Greene's tuctoria, longhorn fairy shrimp and Conservancy fairy shrimp is required by the SJMSCP in accordance with the full avoidance measures in Section 5.5.9. For all other vernal pool plants and vernal pool invertebrates:

A. Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.

B. Collected soils shall be dried and stored in pillow cases labeled with the date and location of soils collected. Soils will be deposited with the JPA. The JPA shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on Preserve lands.

C. Preconstruction surveys, conducted in compliance with U.S. Fish and Wildlife Service protocols [as required in Section 5.2.2.5(E)] approved and in place at the time the surveys are conducted, shall be conducted to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of I-580 in the *Southwest Zone* unless avoidance of vernal pools and/or wetlands is achieved in compliance with SJMSCP Section 5.5.9.

5.2.4.5 California Tiger Salamander and Western Spadefoot Toad in Association with Projects that Require a Permit Pursuant to Section 404 of the Federal Clean Water Act

Incidental Take Minimization Measures apply to known California tiger salamander occurrences. All required minimization measures will be prescribed through technical assistance provided to the U.S. Army Corps of Engineers by the U.S. Fish and Wildlife Service of Nationwide and standard permitting within the SJMSCP Permit Area, concurrent with formal consultations conducted for listed vernal pool species, or through the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The approach to impact minimization measures outlined in this section of the SJMSCP for California tiger salamander will provide the framework for Corps 404 permit streamlining described further in SJMSCP Section 5.6.1. Specific measures for impact minimization will be based on the framework provided in the SJMSCP. The

JPA intends that the SJMSCP will provide an option for project applicants to meet some or all of the compensation requirements assessed as part of the 404 regulatory process for California tiger salamander, should this species become federally listed.

The measures will be based on the need to avoid and minimize impacts to breeding, feeding, and sheltering behaviors of California tiger salamander (See SJMSCP Chapter 2), and will include, but not be limited to, consideration of the following: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers) can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

5.2.4.6 California Tiger Salamander, Western Spadefoot Toad - in Association with Projects that Do Not Require a Federal Clean Water Act Section 404 Permit

To minimize impacts and Take of California tiger salamander, the following measures should be implemented for SJMSCP Covered Activities not requiring a Federal Clean Water Act Section 404 Permit:

A. Retain known breeding sites.

B. In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies' representatives on the TAC. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

C. If a proposed project intends to eliminate aquatic habitat (including wetlands, ponds, springs and other standing water sources), and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats on-site should occur when the water source is dry under natural conditions, or otherwise outside of the full breeding season for tiger salamanders (December to June) to allow larvae to metamorphose and migrate to upland habitat.

D. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the time period when adult salamanders are breeding (approximately December to February).

E. Apply those other measures that are utilized to minimize impacts and Take of the California tiger salamander that are developed as described in 5.2.4.5 above. Those other measures will address: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable

estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

5.2.4.7 Red-Legged Frogs and Foothill Yellow-Legged Frogs

Red-legged frogs and foothill yellow-legged frogs occur in the creeks and wetlands in foothill areas. Red-legged frogs and foothill yellow-legged frogs do not occur on the valley floor. Therefore, the following Incidental Take Minimization Measures apply to the eastern foothills (primarily in the *Vernal Pool Zone*) and the *Southwest Zone* only where new development is proposed on parcels with creeks, rivers or wetlands, especially ponds:

A. A 300 foot setback, incorporating both riparian vegetation and uplands, shall be provided on both sides of creeks and on all sides of wetlands (for a total of 600 feet in setbacks) occupied by red-legged frogs or yellow-legged frogs identified through pre-construction surveys conducted by the JPA or documented in the *SJMSCP GIS Database*. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. Setbacks shall maintain existing vegetation free of disturbance and be free of new construction, new wells, storage or parking of equipment or materials, and other activities which compact or disturb soils or vegetation or which could introduce contaminants into the aquatic habitat. Setbacks shall be delineated by flagging or brightly colored temporary fencing during the construction process. Setbacks shall be indicated on final maps and include a map note referencing prohibitions within the setbacks. For entitlements which do not include a map, the condition shall be enforced through the recordation of an easement referencing prohibitions within the setback. The JPA may approve alternative methods of enforcing the provisions of the setback with the concurrence of the Permitting Agency representatives on the TAC.

B. Water quality within creeks and wetlands inhabited by red-legged frogs or foothill yellow-legged frogs shall be maintained through implementation of appropriate erosion control measures to reduce siltation and contaminated runoff from project sites (e.g., by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents).

C. Construction and other ground disturbances shall be prohibited within established setbacks. The use of insecticides, herbicides, rodenticides and pesticides within established setbacks shall occur in accordance with U.S. Environmental Protection Agency guidelines (Appendix A) addressing the use of these materials in occupied California red-legged frog habitat and, if applicable, any additional requirements as established by the San Joaquin County Agricultural Commissioner.

D. All on-site construction personnel shall be given instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitats.

E. Setbacks shall be marked by brightly colored fencing or flagging throughout the construction process.

F. Setbacks shall be permanently preserved as recorded easements. Easements shall be indicated on recorded maps, whenever projects involve parcel or subdivision maps.

Proposals by Project Proponents to implement either of the following Incidental Take Minimization Measures requires the review and approval of the JPA with the concurrence of the Permitting Agencies' representatives on the TAC:

G. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

H. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

Pursuant to Section 5.5.5, SJMSCP Preserve lands acquired to offset impacts to the red-legged frog or yellow-legged frog must have occupied habitat for the red-legged frog or yellow-legged frog of at least equal habitat value as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.2.4.8 Giant Garter Snake

A. Full avoidance of giant garter snake known occupied habitat is required in compliance with Section 5.5.9 (C) for the following SJMSCP Covered Activities with the potential to adversely affect the GGS and which have not been mapped: golf courses; religious assembly; communications services; funeral; internment services; public services - police, fire and similar; projects impacting channel or tule island habitat; major impact projects including landfills, hazardous waste facilities, correctional institutions and similar major impact projects; recreational trails and campgrounds, recreational outdoors sports clubs; utility services, museums and similar facilities. Known occupied habitat for the giant garter snake is that area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. New sites identified during the life of the SJMSCP as confirmed habitat sites for the giant garter snake shall be considered known occupied sites for the purposes of this section.

B. For areas with potential giant garter snake habitat, the following is required. Potential GGS habitat elements are described in SJMSCP Section 2.2.2.2 and exist in the *Primary Zone of the Delta* and the Central Zone contiguous with known occupied habitat in the White Slough area north to the San Joaquin/Sacramento County line and south to Paradise Cut; in the Central Zone east of Stockton in

Duck Creek, Mormon Slough, Stockton Diverting Canal, Little John's Creek, Lone Tree Creek, and French Camp Slough (wherever habitat elements are present); and the Southern Centerl Zone and Southwest/ Central Transition Zone including the area east of J4 from the Alameda-San Joaquin County Line to Tracy and area south of Tracy and east of Interstate 580 to the east edge of Agricultural Habitat Lands east of the San Joaquin River.

1. Construction shall occur during the active period for the snake, between May 1 and October 1. Between October 2nd and April 30th, the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall determine if additional measures are necessary to minimize and avoid take.

2. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.

3. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.

4. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.

5. In areas where wetlands, irrigation ditches, marsh areas or other potential giant garter snake habitats are being retained on the site:

    a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;

    b. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and

    c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.

6. If on-site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity: the newly created aquatic habitat shall be created and filled with water prior to dewatering and destroying the pre-existing aquatic habitat. In addition, non-predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.

7. If wetlands, irrigation ditches, marshes, etc. will not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.

8 Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.

9. Other provisions of the *USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat* shall be implemented (excluding

programmatic mitigation ratios which are superceded by the SJMSCP's mitigation ratios).

5.2.4.9 San Joaquin Whipsnake, California Horned Lizard

These species are of very limited distribution within the County, primarily isolated locations outside of anticipated development areas within the *Southwest Zone*. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.10 Pond Turtles

When nesting areas for pond turtles are identified on a project site, a buffer area of 300 feet shall be established between the nesting site (which may be immediately adjacent to wetlands or extend up to 400 feet away from wetland areas in uplands) and the wetland located near the nesting site. These buffers shall indicated by temporary fencing if construction has or will begin before nesting periods are ended (the period from egg laying to emergence of hatchlings is normally April to November).

5.2.4.11 Swainson's Hawk

The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees.

If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:

> If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.

If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.12 California Black Rail

A. Prohibit construction or similar activities on channel or tule islands (I,I2), fresh emergent wetlands (W7), and arroyo willow thickets (R4), within the Primary Zone of the Delta until a preconstruction survey determines that the island is unoccupied by the California black rail.

B. In cases where project approvals may result in an increase in boating or jet skiing near known breeding sites for this species during the breeding season (e.g., proposals including new marinas), a condition of project approval shall be attached to require the location of the new marinas no closer than 200 feet from known breeding site when such sites are or have been occupied by breeding California black rails within the past three years. In addition, approaches into and out of new marinas shall be posted by the Project Proponent (as a condition of project approval) or, if otherwise designated by law, by a local, state or federal agency (e.g., the Division of Boating and Waterways)

"no wake speed" within 300 feet of occupied breeding sites for the California black rail during breeding season. Information related to the breeding season for California black rails is sparse, but the breeding season for the California black rail is believed to extend from February 1st through August 30th. Therefore, requirement for "no wake speed" into and out of new marinas due to the presence of breeding California black rails is not required from September 1 through January 30th.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.13 Bank Swallow and Yellow-Billed Cuckoo

If the JPA discovers nesting bank swallows or nesting yellow-billed cuckoos during preconstruction surveys or from other sources, construction avoidance areas shall be enforced for a distance of 300 feet from the nest sites until young bank swallows or yellow-billed cuckoos have fledged and left the nesting site.

These Incidental Take n Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.14 Aleutian Canada Goose and Greater Sandhill Crane

Under normal conditions, the Aleutian Canada goose and greater sandhill crane are found foraging in fields that are flooded, newly disced, cut, or irrigated during the fall migration of waterfowl along the Pacific Flyway. These two species are highly mobile while they forage and can easily relocate to nearby foraging sites in the event of a disturbance to the foraging field. The risk of actually killing or harming (Taking) one of these species during SJMSCP Permitted Activities is therefore nearly non-existent. The threat to these species is more closely associated with removing habitat in sufficient quantities to create adverse impacts to populations of these species--an impact addressed by the SJMSCP through acquisition and enhancements of habitat (see Sections 5.4.4 and 5.4.6). Therefore, Incidental Take Minimization Measures for the Aleutian Canada goose and the greater sandhill crane are not included in the SJMSCP and this is considered to be consistent with the provisions of the Migratory Bird Treaty Act.

5.2.4.15 Burrowing Owls

The presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the project site early in the planning process by employing one of the following practices:

A. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36" above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.

B. Alternatively, if burrowing owls are not known or suspected on a project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders:

The Project Proponent may disc or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the

project site. Detailed descriptions of these methods are included in Appendix A, *Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County*, dated March, 2000:

1. **Anticoagulants.** Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

2. **Zinc Phosphide.** Establish bait stations with non-treated grain 5-7 calendar days in advance of rodenticide application, then apply Zinc Phosphide to bait stations. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

3. **Fumigants.** Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

4. **Traps.** For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of , shall be consistent with all applicable laws and regulations.

If the measures described above were not attempted or were attempted but failed, and burrowing owls are known to occupy the project site, then the following measures shall be implemented:

C. During the non-breeding season (September 1 through January 31) burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)

D. During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.16 Colonial Nesting Birds (Tricolored Blackbird, Black-Crowned Night Heron, Great Blue Heron)

Acquisition of colonial nesting sites for these species is a high priority of the SJMSCP. Project Proponents shall be informed of avoidance measures which eliminate compensation requirements for disturbance of colonial nesting areas in project design, as described in Section 5.5.9. If the Project Proponent rejects acquisition and avoidance, pursuant to Section 5.5.9, then the following Incidental Take Minimization Measure shall apply:

> A setback of 500 feet from colonial nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.17 Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl)

A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.18 Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike

A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.19 Birds Nesting Along Riparian Corridors (Cooper's Hawk, Yellow-Breasted Chat, Osprey, White-Tailed Kite)

A. For white-tailed kites, preconstruction surveys shall investigate all potential nesting trees on the project site (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15) whenever white-tailed kites are noted on site or within the vicinity of the project site during the nesting season.

B. For the Cooper's hawk, yellow-breasted chat, osprey and white-tailed kite, a setback of 100

feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.20 Bell's Sage Sparrow, Snowy Egret, Prairie Falcon, American White Pelican, Double-Crested Cormorant, White-Faced Ibis, Long-billed Curlew

These species either establish nests outside of anticipated development areas or are currently unknown to nest within the County. However, if a nest for one of these species is discovered on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.21 Golden Eagle

When a site inspection indicates the presence of a nesting golden eagle, a setback of 500 feet from the nesting area shall be established and maintained during the nesting season (normally approximately February 1 - June 30) for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G) and are consistent with the provisions of the Bald and Golden Eagle protection act as described in Section 5.2.3.1(H).

5.2.4.22 Ferruginous Hawk, Mountain Plover, Merlin, Long-Billed Curlew

These species currently do not nest in the County and are not expected to nest in the County over the life of the Plan. Therefore, in the highly unlikely event that one of these species is found nesting on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

Incidental Take Minimization Measures adopted pursuant to Section 5.9.4 shall be consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G)

5.2.4.23 Riparian Brush Rabbit

A. Occupied Habitat. Kill of individual riparian brush rabbits and Conversion of occupied habitat for the riparian brush rabbit is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian brush rabbit is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Known occupied habitat for the riparian brush rabbit is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located within Caswell State Park and along the adjoining Stanislaus River; and surrounding Stewart Tract including Paradise Cut and the adjacent Union Pacific Railroad Company right-of-way on Stewart Tract, Old River adjacent to Stewart Tract, and the San Joaquin River as it bounds Stewart Tract. Additional populations of the riparian brush rabbit identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian brush rabbit habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian brush rabbit is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential riparian brush rabbit habitat is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located along the Stanislaus River downstream of Highway 99 to the junction with the San Joaquin River and riparian habitat along the San Joaquin River downstream of the mouth of the Stanislaus River north to and including Tom Paine Slough and Paradise Cut to the Southern Pacific railroad right-of-way.

C. Limited Take. Incidental Take of up to three acres of potential riparian brush rabbit habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury, or harassment of individual brush rabbits

5.2.4.24 Riparian Woodrat

A. Occupied Habitat. Kill of individual riparian woodrats and Conversion of occupied habitat for the riparian woodrat is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian woodrat is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Occupied habitat for the riparian woodrat includes the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) surrounding Caswell Park along the Stanislaus River and extending along the Stanislaus River west from Caswell Park to the confluence of the Stanislaus River with the San Joaquin River in San Joaquin County. Additional populations of the riparian woodrat identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian woodrat habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian woodrat is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP

Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential habitat for the riparian woodrat is the same as that for the riparian brush rabbit.

C. Limited Take. Incidental Take of up to three acres of potential riparian woodrat habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury or harassment of individual riparian woodrats

5.2.4.25 San Joaquin Kit Fox

Preconstruction surveys shall be conducted two calendar weeks to thirty calendar days prior to commencement of ground disturbance for projects located within the *Southwest Zone* or *Southwest/Central Transition Zone*. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (potential dens are defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register track of any San Joaquin kit fox present. If no San Joaquin kit fox activity is identified, potential dens may be destroyed. If San Joaquin kit fox activity is identified, then dens shall be monitored to determine if occupation is by an adult fox only or is a natal den (natal dens usually have multiple openings). If the den is occupied by an adult only, the den may be destroyed when the adult fox has moved or is temporarily absent. If the den is a natal den, a buffer zone of 250 feet shall be maintained around the den until the biologist determines that the den has been vacated. Where San Joaquin kit fox are identified, the provisions of the U.S. Fish and Wildlife Service's published *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* shall apply (except that preconstruction survey protocols shall remain as established in this paragraph). These standards include provisions for educating construction workers regarding the kit fox, keeping heavy equipment operating at safe speeds, checking construction pipes for kit fox occupation during construction and similar low or no-cost activities.

It is possible that the Permitting Agencies could discover the San Joaquin kit fox within the eastern foothills of San Joaquin County, (this potential range in the eastern foothills would most likely coincide approximately with the boundaries of the *Vernal Pool Zone*, excluding that area of the *Vernal Pool Zone* located in the northern portion of San Joaquin County). San Joaquin kit fox also may move within the *Primary Zone of the Delta* west of Old River. The TAC shall work with the USFWS to prepare an abbreviated survey protocol for these areas in the *Vernal Pool Zone* and *Primary Zone of the Delta* within one year of issuance of SJMSCP Permits pursuant to SJMSCP Sections 5.2.2.1 through 5.2.2.4.

Protocols for conducting pre-construction surveys for the San Joaquin kit fox shall be updated in accordance

with the SJMSCP Adaptive Management Plan to reflect changes to the *Standardized Recommendations for Protection of the San Joaquin kit fox Prior to or During Ground Disturbance*.

5.2.4.26 American Badger, Ringtail Cat

If occupied dens are located on a project site for either of these species, then dens shall be monitored to determine if occupation is by an adult badger or ringtail only or is a natal den. If the den is occupied by an adult only the den may be destroyed when the adult has moved or is temporarily absent. If the den is a natal den, a buffer zone of 200 feet shall be maintained around the den until the JPA biologist determines that den has been vacated.

5.2.4.27 Berkeley Kangaroo Rat, San Joaquin pocket mouse

These species are located primarily in the Southwest Zone outside of anticipated development areas. However, if these species are discovered on a project site, Incidental Take Minimization Measures shall be formulated by prior to ground disturbance the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.28 Bats (All)

A. Prior to the nursery season indicated in the following table for these species, nursery sites shall be sealed.

TABLE 5.2-2
OCCUPATION SITES AND NURSERY SEASONS FOR SJMSCP COVERED BATS

Bat Species	Preferred Occupation Site	Nursery Season
Greater western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasionally)	April - September
Small-footed myotis	Cave, adit, cliff, rock crevice, building	May - August
Long-eared myotis	Cave, adit, tree, snag	May - August
Fringed myotis	Cave, adit, cliff, rock crevice, building	May - August
Long-legged myotis	Cave, adit, cliff, rock crevice, tree, snag, building	May - August
Red bat	tree, snag, cave (occasionally)	May - August

Yuma myotis	Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag	May - August
Pale big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	May - August
Pacific western big-eared bat (aka Townsend's western big-eared bat)	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April - August

B. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed as described in 5.5.9(E)(1).

C. When colonial roosting sites which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2.

5.2.4.29 Plants

I. Complete avoidance of plant populations on site is required for the following plant species in accordance with the identified measures in Section 5.5.9(F):

Large-flowered fiddleneck, succulent owl's clover, legenere, Greene's tuctoria, diamond-petaled poppy, Sanford's arrowhead, Hospital Canyon larkspur, showy madia, Delta button celery, Slough thistle.

II If one of the following SJMSCP Covered Plant Species is identified by the JPA on a project site, the following mitigation measures are required:

A. For widely distributed plant species: Mason's lilaeopsis, California hibiscus, Suisun marsh aster, Delta tule pea, Delta mudwort:

Attempt acquisition. If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition , then compensation shall be as prescribed in SJMSCP Section 5.3.1.

B. For plants of moderate distribution: Bogg's lake hedge hyssop:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as

prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition, compensation shall be as prescribed in SJMSCP Section 5.3.1.

2. **Seed Collection.** If the landowner rejects acquisition , then the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall undertake seed collections from the populations prior to destruction if seed collection is determined to be feasible, beneficial and/or appropriate by the TAC.

C. For narrowly distributed plant species: Hoover's calycadenia, Red Bluff dwarf rush, bristly sedge, alkali milk vetch, heartscale, brittlescale, Mt. Hamilton coreopsis, mad-dog skullcap, Wright's trichocoronis, caper-fruited tropidocarpum, and recurved larkspur:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC , then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological and ecological (e.g., account for weed control, buffers, inclusion of pollinators) needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees.

2. **Consultation.** If the landowner rejects acquisition of the population, then the JPA shall, with the concurrence of the Permitting Agencies' representatives on the TAC, determine the appropriate mitigation measures (e.g., seed collection) for each plant population based upon the species type, relative health and abundance.

5.2.4.30 SJMSCP Covered Fish

Impacts to fish are addressed under the SJMSCP primarily through Incidental Take Minimization Measures; SJMSCP Permitted Activities are not expected to significantly alter habitats of SJMSCP Covered Fish Species

Incidental Take Minimization Measures for SJMSCP Covered Fish are the same as those included for protection of riparian habitats in SJMSCP Section 5.2.4.31, except that, pursuant to Section 5.7(5) for Aggregate Mining Activities, Project Proponents are required to consult with Permitting Agencies on a case-by-case basis during the SMARA permitting process to design minimization measures to reduce the effects of stranding of the SJMSCP Covered Fish Species during mining activities.

5.2.4.31 Riparian Habitats and Other Non-Vernal Pool Wetlands

For the purposes of implementing Incidental Take Minimization Measures, riparian habitats and "other non-vernal pool wetlands" shall be considered to be those habitats mapped on the *SJMSCP Vegetation Maps* as D (drainage ditch), R (Great Valley riparian forest), R2 (Great Valley Valley oak riparian forest), R3 (Great Valley cottonwood riparian forest), R4 (Arroyo willow thicket), S (Great Valley riparian scrub), S2 (Elderberry savannah), W (River or deep water channel - greater than 200 feet wide), W2 (Tributary stream - 100 to 200 feet wide), W3 (Creek - 20 to 100 feet wide), W4 (dead-end slough), W9 (Canal - if not cement lined), I (channel island), I2 (tule island and mud flat), W5 (freshwater lake or pond), W7 (freshwater

emergent wetland).

The compensation requirements of the SJMSCP shall be triggered when the project design disturbs portions of the project site located within 100 feet of the outer edge of the driplines of riparian vegetation. For the purposes of accounting pursuant to the Annual Report (Section 5.9.1), Open Space Conversion acreage subject to the SJMSCP shall be calculated from the point at which a development extends into the 100 foot buffer to the centerline of the subject drainage (other than a river). For rivers, lakes, or ponds, Incidental Take shall be calculated from the edge of the 100 foot buffer zone to the edge of the riparian vegetation as it extends into the river, lake, or pond.

For projects affecting riparian habitats:

A. Require appropriate erosion control measures (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from project sites.

B. Retain emergent (rising out of water) and submergent (covered by water) vegetation.

C. Retain vegetation as practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. Rapidly sprouting plants, such as willows, should be cut off at the ground line and root systems left in tact, when removal is necessary.

D. Locate roadways and other facilities perpendicular, rather than adjacent, to waterways to reduce the total riparian area disturbed wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

E. Locate bridge and road footings outside of high water zones and riparian habitats wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

F. Provide construction buffers of at least 100 feet throughout the construction process. Construction buffers of 300 feet (on both sides of riparian corridors, for a total of 600 feet) are required when the red-legged frog or foothill yellow-legged frog occupy the project site. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. This buffer area should be marked with stakes, fencing or other materials which will be visible to construction workers, including heavy equipment operators.

These buffers may be reduced on a case-by-case basis by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Clifton Court Forebay (3712175) OR Union Island (3712174) OR Lathrop (3712173) OR Midway (3712165) OR Tracy (3712164) OR Vernalis (3712163))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Alkali Meadow Alkali Meadow	CTT45310CA	None	None	G3	S2.1	
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Anthicus sacramento Sacramento anthicid beetle	IICOL49010	None	None	G1	S1	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Caulanthus lemmonii Lemmon's jewelflower	PDBRA0M0E0	None	None	G3	S3	1B.2
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Cirsium crassicaule slough thistle	PDAST2E0U0	None	None	G1	S1	1B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hygrotus curvipes curved-foot hygrotus diving beetle	IICOL38030	None	None	G1	S1	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Neotoma fuscipes riparia riparian (=San Joaquin Valley) woodrat	AMAFF08081	Endangered	None	G5T1Q	S1	SSC
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Sylvilagus bachmani riparius riparian brush rabbit	AMAEB01021	Endangered	Endangered	G5T1	S1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Trichocoronis wrightii var. wrightii Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	
Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 72

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

31 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712164, 3712163, 3712175, 3712174 3712173 and 3712165;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	4.2	S4	G4
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	Mar-May	1B.2	S3?	G3?
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	Feb-May	1B.2	S3	G3
Cirsium crassicaule	slough thistle	Asteraceae	annual / perennial herb	May-Aug	1B.1	S1	G1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous	May-Aug	2B.1	S2	G4G5

			herb				
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S2	G2
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1

Suggested Citation

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IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

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

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

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Endangered species

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

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

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

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

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

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

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

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Mammals

NAME	STATUS
Riparian Brush Rabbit Sylvilagus bachmani riparius No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6189	Endangered
Riparian Woodrat (=san Joaquin Valley) Neotoma fuscipes riparia No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6191	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final designated** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final designated** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final designated** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly Callophrys mossii bayensis There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final designated** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final designated** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final designated** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final designated

Migratory birds

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

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.

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2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are USFWS Birds of Conservation Concern that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the E-bird data mapping tool (year-round bird sightings by birders and the general public) and Breeding Bird Survey (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the E-bird Explore Data Tool.

NAME	BREEDING SEASON
Black Rail Laterallus jamaicensis https://ecos.fws.gov/ecp/species/7717	Breeds Mar 1 to Sep 15
Burrowing Owl Athene cunicularia https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Costa's Hummingbird Calypte costae https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Lawrence's Goldfinch Carduelis lawrencei https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker Melanerpes lewis https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew Numenius americanus https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit Limosa fedoa https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Plover Charadrius alexandrinus	Breeds Mar 5 to Sep 15
Song Sparrow Melospiza melodia pusillula https://ecos.fws.gov/ecp/species/3509	Breeds Feb 20 to Sep 5

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Spotted Towhee Pipilo maculatus clementae https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird Agelaius tricolor https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Yellow-billed Magpie Pica nuttalli https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (▮)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

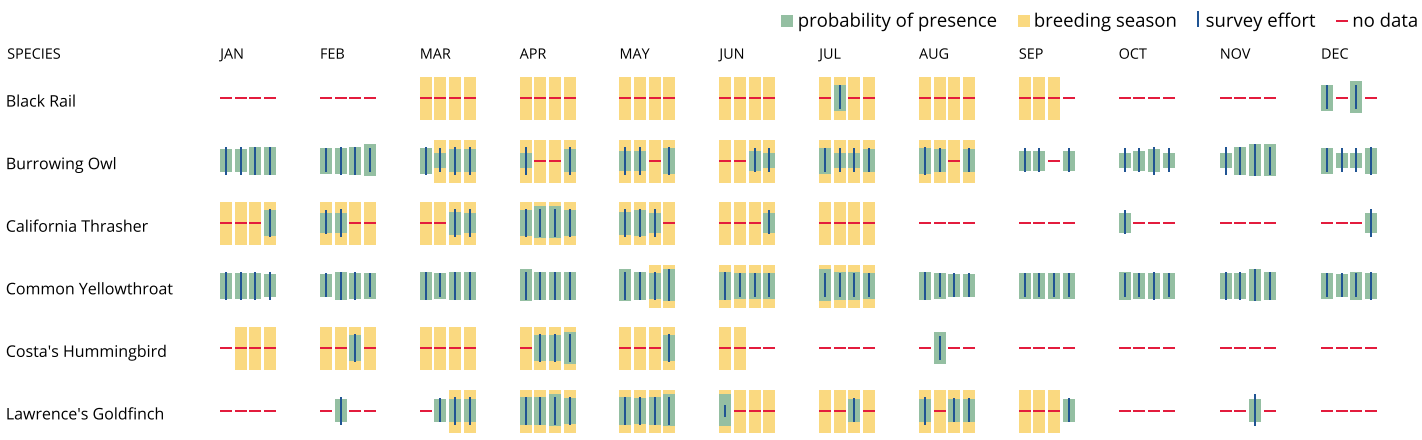
Breeding Season (▮)
Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



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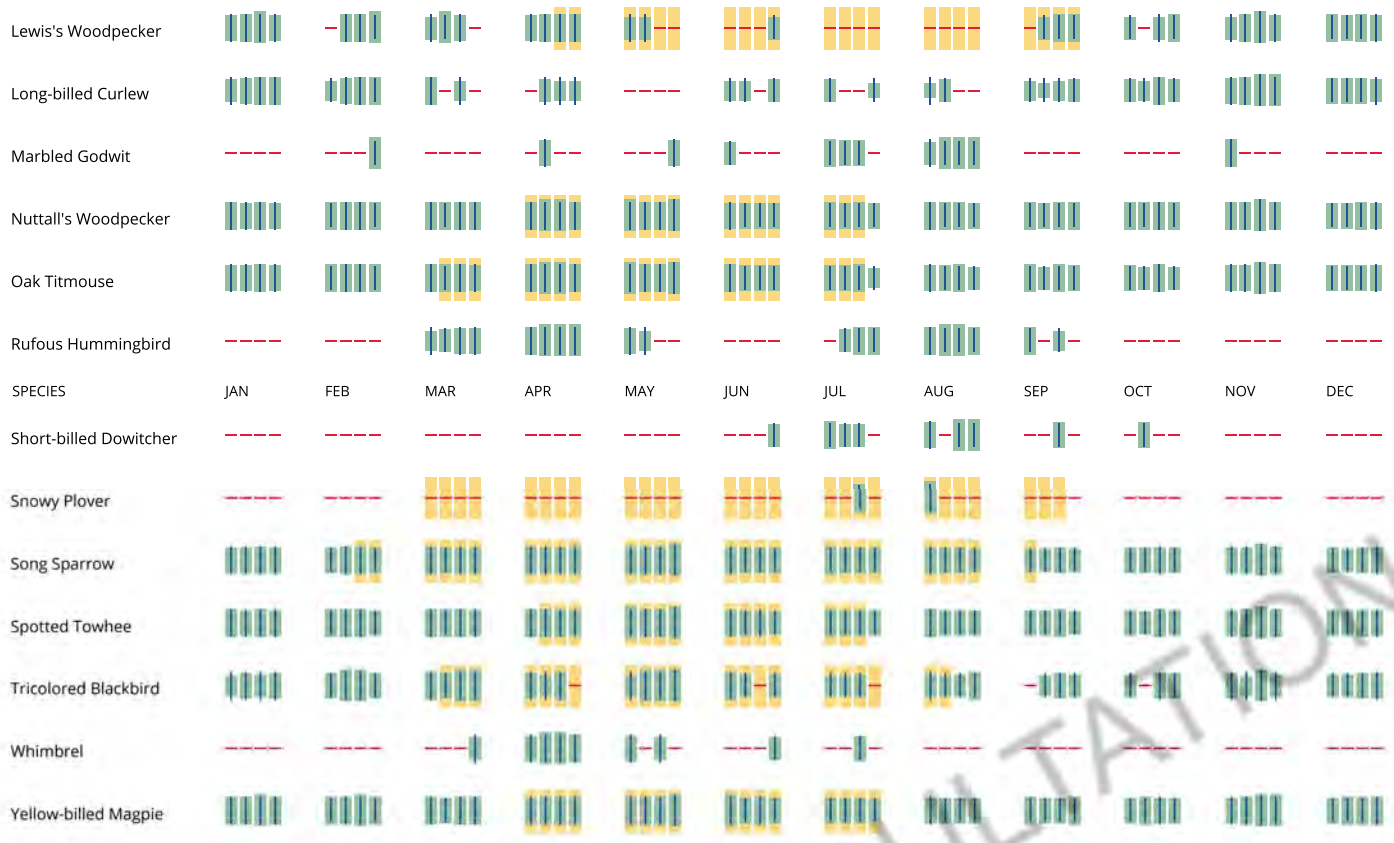

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in Birds of North America (BNA) Online under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a subscription. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the Endangered Species Act (ESA).

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets. The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

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

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

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Facilities

Wildlife refuges and fish hatcheries

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REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

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

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

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APPENDIX G

TRANSPORTATION OPERATIONS REPORT

Final Traffic Operations Report for the

GRANT LINE ROAD AND KASSON ROAD CORRIDOR PLAN

Prepared for:

San Joaquin County

Mark Thomas

November 2017

FEHR & PEERS

WC14-3104

Final Traffic Operations Report

Grant Line Road and Kasson Road Corridor Plan

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November 2017

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FEHR PEERS

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CHAPTER 1. INTRODUCTION

BACKGROUND

Grant Line Road is an east-west facility extending from Byron Highway in the City of Tracy to 11th Street in an unincorporated area of San Joaquin County. It's a four-lane roadway west of MacArthur Drive and a two-lane roadway east of MacArthur Drive through the unincorporated area of San Joaquin County. A two-lane roundabout exists at the Grant Line Road/11th Street intersection. Grant Line Road primarily runs south of and parallel to Interstate 205 (I-205).

Grant Line Road serves a mixture of local and regional traffic, including a high percentage of trucks. Planned development in San Joaquin County and the northeast area of the City of Tracy are expected to increase traffic demand on Grant Line Road and worsen traffic operations. San Joaquin County is proposing to build a new four-lane roadway south of Grant Line Road between the City of Tracy's eastern city limit and 11th Street to accommodate planned growth and improve local traffic circulation.

PROJECT DESCRIPTION

There is one project alternative under consideration (Alternative 3A). A conceptual layout of this alternative is presented in **Appendix A.**

Alternative 3A – Under Alternative 3A a new four-lane roadway would be constructed south of Grant Line Road between the City of Tracy/San Joaquin County boundary and 11th Street. The new roadway would have four local street connections at the following locations:

- Banta Road (right in/right out)
- F Street (full access)
- New connection to Bird Road (full access)
- 11th Street (full access)

The project would provide a wide shoulder on each side of the road that can be signed as a Class III bicycle route.

REPORT OUTLINE

The second chapter of this report describes the data collection and traffic analysis methodology. The third chapter describes existing traffic operations in the study area. The fourth chapter presents traffic forecasting, and the fifth chapter discusses year 2035 conditions and the effectiveness of the proposed project.

CHAPTER 2. DATA COLLECTION AND ANALYSIS METHODOLOGY

DATA COLLECTION

Figure 1 presents the project study locations. Morning (7:00 – 9:00 AM) and evening (4:00 – 6:00 PM) peak period traffic counts were collected at the following ten intersections on Tuesday, November 19, 2013:

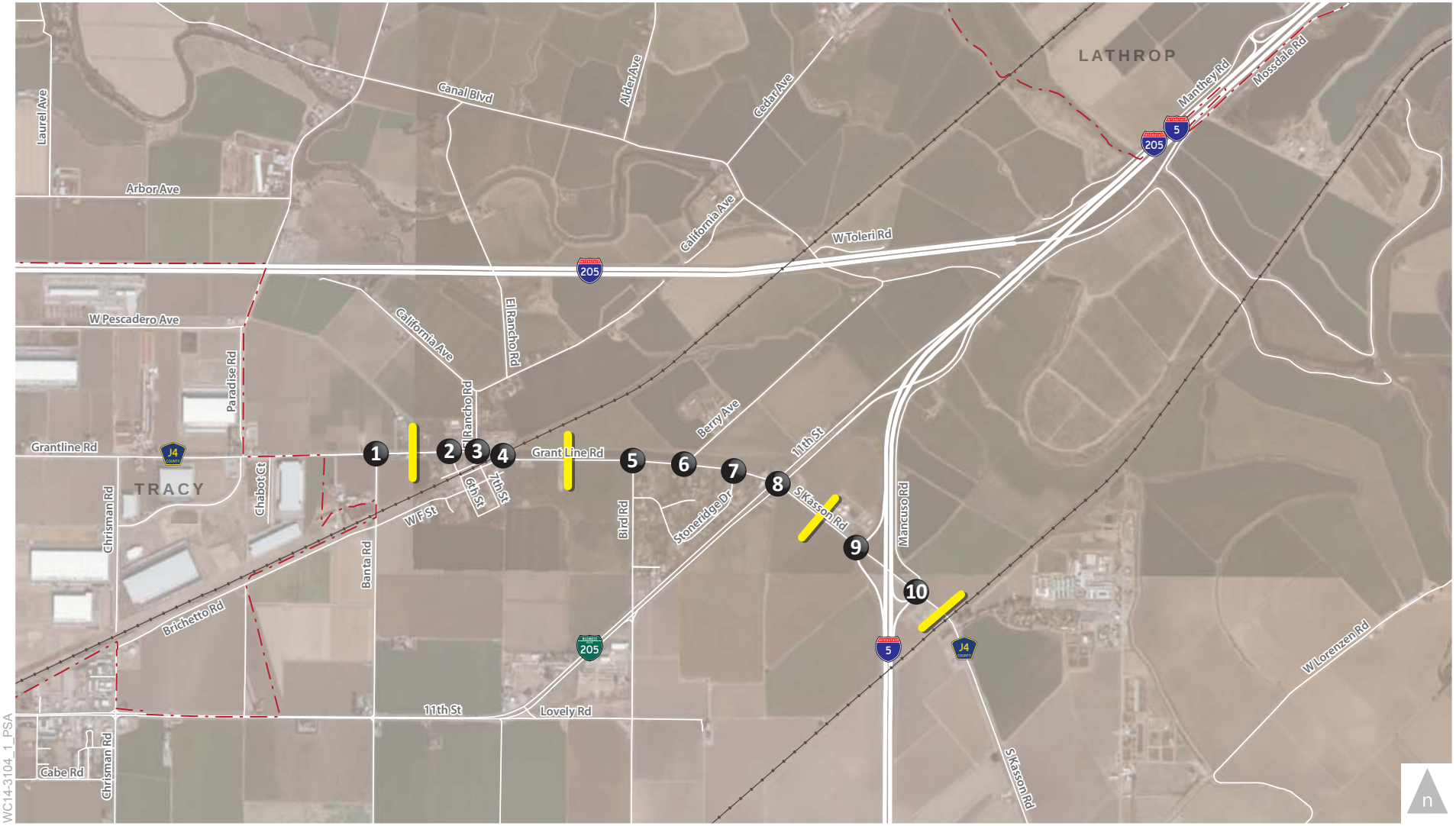
1. Banta Road/Grant Line Road
2. 6th Street/Grant Line Road
3. 7th Street/Grant Line Road
4. G Street/Grant Line Road
5. Bird Road/Grant Line Road
6. Berry Avenue/Grant Line Road
7. Stoneridge Drive/Grant Line Road
8. 11th Street/Grant Line Road/Kasson Road
9. I-5 Southbound Ramps/Kasson Road
10. I-5 Northbound Ramps/Kasson Road

Daily traffic classification counts were collected for three weekdays (November 19-21, 2013) at the following two locations to determine average daily traffic volumes along Grant Line Road and Kasson Road:

1. Grant Line Road just west of Bird Road
2. Kasson Road just east of 11th Street

The counts indicate the overall morning peak hour at the study locations is from 8:00 to 9:00 AM, while the evening peak hour is from 5:00 to 6:00 PM. The daily traffic classification counts indicate trucks make up about 16% and 9% of the AM and PM peak hour traffic, respectively. The overall peak hour factor in the morning is 0.88, while the evening peak hour factor is 0.81.

Figure 1 presents the existing traffic volumes, lane configurations, and intersection traffic control. **Appendix B** contains the traffic count data.



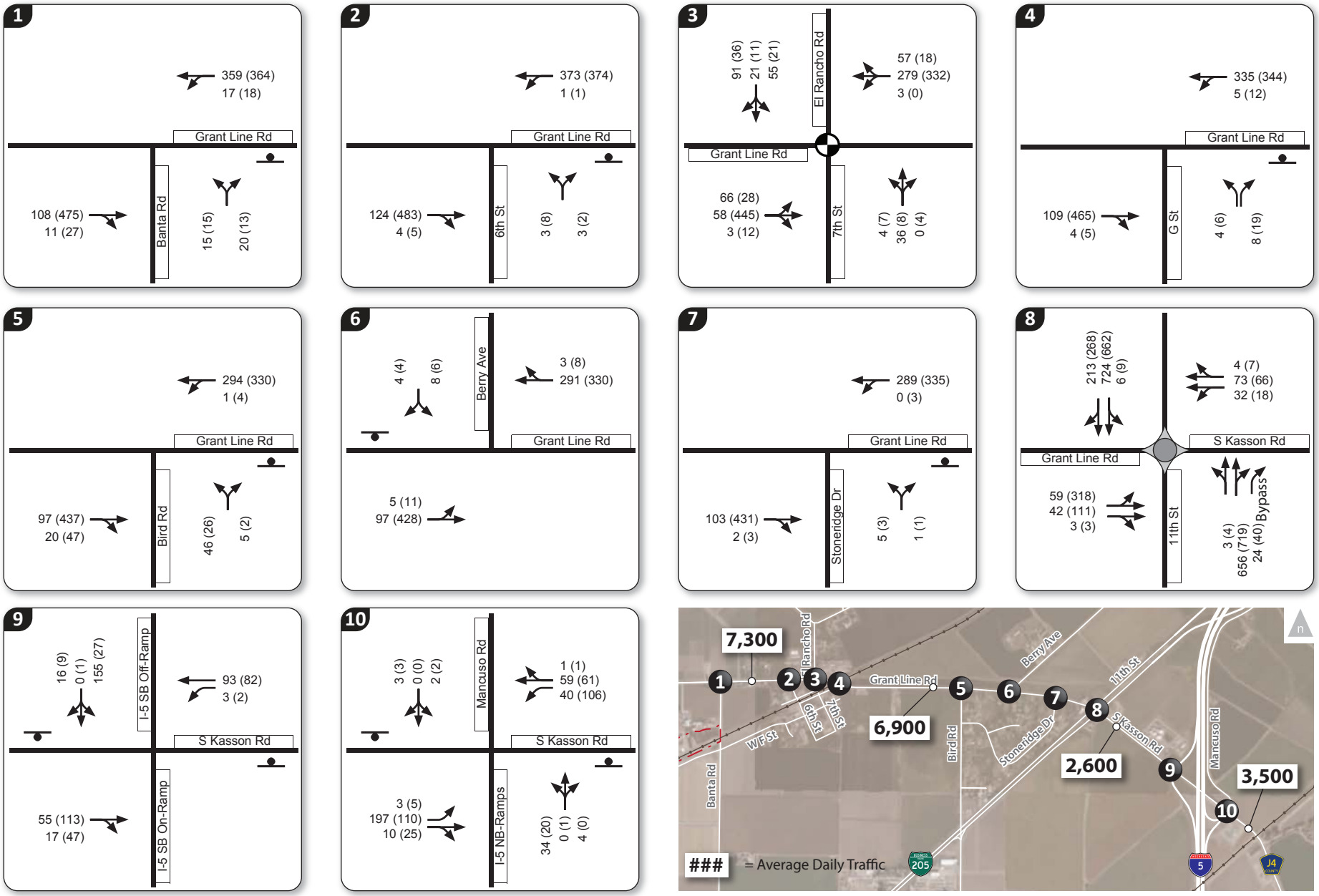
LEGEND

Study Intersection

Roadway Segment Analysis Location

Figure 1

Project Study Area



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LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Roundabout | # Study Intersection

Figure 2

Existing Condition
Traffic Volumes, Lane Configurations and Intersection Controls

The San Joaquin County Department of Public Works provided results of speed surveys they performed in in 2012, 2013, and 2014 on Grant Line Road. A total of 50 vehicle speeds were recorded at each location. The results are presented in **Table 1** below. The posted speed limit is 35 mph between Banta Road to G Street and 45 mph east of G Street. As shown in Table 1, the 85th percentile vehicle speeds on Grant Line Road are between 7 mph and 15 mph higher than the posted speed limit.

TABLE 1:
GRANT LINE ROAD SPEED SURVEY RESULTS

Location	Date	Direction	85th Percentile Speed (mph)	Posted Speed Limit (mph)
West of 7th Street	6/21/12	Eastbound	42	35
East of Banta Road	9/11/13	Westbound	46	35
East of 6th Street	2/20/14	Eastbound	50	35
West of Berry Avenue	2/20/14	Eastbound	58	45

Source: San Joaquin County Department of Public Works.

TRAFFIC OPERATIONS

Traffic operations are described using the qualitative term "level of service" (LOS). LOS is presented on a scale from A to F, with LOS A representing free-flow traffic conditions and LOS F representing heavily congested conditions. LOS is a qualitative measure of a number of factors on traffic conditions including speed, travel time, traffic delay, freedom to maneuver, safety, driving comfort, and convenience.

ROADWAY SEGMENTS

For this study, roadway segment level of service thresholds presented in the *San Joaquin County General Plan* and the City of Stockton (the largest city in San Joaquin County) were used to determine reasonable capacities for major arterials. **Table 2** presents the roadway segment level of service thresholds. The arterial thresholds distinguish between arterials with and without left-turning lanes because arterials with left-turn lanes have higher capacities than those without left-turn lanes.

TABLE 2:
ROADWAY SEGMENT LEVEL OF SERVICE THRESHOLDS (BI-DIRECTIONAL)

Facility Class	Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E
Arterial	Two-lanes *with no* turning lanes	9,100	10,000	12,500	15,400	18,000
	Two-lanes *with* turning lanes	11,000	12,100	15,000	18,500	21,600
	Four-lanes *with no* turning lanes	22,700	24,700	30,100	36,600	42,300
	Four-lanes *with* turning lanes	25,700	28,200	35,000	43,100	50,300

Source: *San Joaquin County 2035 General Plan* and *City of Stockton General Plan 2035*.

INTERSECTIONS

The study intersections were analyzed using procedures consistent with the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010). **Table 3** presents the HCM's delay thresholds for unsignalized and signalized intersections used to evaluate LOS for the study intersections.

TABLE 3:
INTERSECTION LOS THRESHOLDS

LOS	Average Delay[1]	
	Signalized	Unsignalized / Roundabout
A	< 10	< 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Note: 1. Measured in seconds per vehicle
Source: *Highway Capacity Manual* (Transportation Research Board, 2010)

Synchro/SimTraffic 9.0 micro-simulation traffic analysis software was used to evaluate all of the study locations except existing and planned roundabouts. Roundabout analysis was performed using SIDRA traffic analysis software.

CHAPTER 3. EXISTING CONDITIONS

STUDY AREA

The study area is along the Grant Line Road corridor in an unincorporated area of San Joaquin County just east of the City of Tracy. A description of the study area roadways is presented below.

Grant Line Road is an east-west facility extending from Byron Highway in the City of Tracy to 11th Street in an unincorporated area of San Joaquin County. In the unincorporated area of San Joaquin County the roadway provides two lanes (one lane in each direction). There are no turning lanes on the roadway and narrow shoulders are provided for most of its length. The roadway primarily runs south of and parallel to Interstate 205 (I-205). The roadway is predominantly side-street stop controlled at intersections except at 7th Street (traffic signal) and 11th Street (two-lane roundabout). Agricultural land uses are primarily provided on both sides of Grant Line Road except in the communities of Banta and Stoneridge (located just east of 11th Street) where there are single-family homes fronting the roadway. The posted speed limit is 35 mph within the community of Banta and 45 mph outside the community of Banta. East of 11th Street Grant Line Road becomes Kasson Road.

Kasson Road is a north-south two-lane arterial providing access to Interstate 5 (I-5) via a full access interchange. The roadway has a posted speed limit of 45 mph.

Banta Road is a north-south two-lane rural arterial extending from Grant Line Road in the north to Linne Road in the south. The roadway has no posted speed limit near Grant Line Road.

6th, 7th, *and* ***G Street*** are north-south two-lane residential streets within the community of Banta with direct access to Grant Line Road. These roadways have a de-facto speed limit of 25 mph.

Bird Road is a north-south two-lane arterial extending from Grant Line Road past Interstate 580 to the south. The roadway has no posted speed limit near Grant Line Road.

Berry Avenue is a north-south two-lane collector extending from Grant Line Road in the south to Canal Boulevard in the north. The roadway has no posted speed limit near Grant Line Road.

11th Street is the historic route of U.S. Highway 50 and is currently signed as Business Route 205. The four-lane arterial provides access to central Tracy and extends from I-205 west of Tracy to I-5. 11th Street serves as an alternate route to I-205 for traffic between Tracy and the central San Joaquin County cities of Lathrop, Manteca, and Stockton. The roadway has a posted speed limit of 55 mph near Grant Line Road.

The **Kasson Road/I-5 Interchange** has a hybrid configuration such that it provides a diamond configuration (Type L-2) on the west side and partial cloverleaf configuration (Type L-7) on the east side. The interchange provides full access to Interstate 5 via single lane ramps.

OPERATIONS ANALYSIS

ROADWAY SEGMENTS

Table 4 below presents the existing daily volume roadway segment analysis. As shown below, Grant Line Road (Kasson Road) currently operates at LOS A.

TABLE 4:
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE

Location	Facility Type	Daily Volume	Level of Service
Grant Line Road just east of Banta Road	Two-lanes *with no* turning lanes	7,300	A
Grant Line Road just west of Bird Road	Two-lanes *with no* turning lanes	6,900	A
Kasson Road just east of 11th Street	Two-lanes *with no* turning lanes	2,600	A
Kasson Road just east of I-5/Kasson Road interchange	Two-lanes *with no* turning lanes	3,500	A

Source: Fehr & Peers, 2017.

INTERSECTIONS

Table 5 presents the LOS and intersection delay in seconds for the study intersections (see **Appendix C** for detailed analysis results) based on the micro-simulation analysis results except at the Grant Line Road/11th Street roundabout intersection where analysis results from the SIDRA software were used. Under existing conditions, all of the study intersections operate at LOS B or better conditions during both the AM and PM peak hours, meeting the County's goal of LOS D or better. The analysis model results matched observed peak hour conditions.

TABLE 5:
EXISTING CONDITIONS OPERATIONS ANALYSIS

Intersection	Traffic Control	Peak Hour	LOS	Average Delay (Seconds)
1. Banta Road/Grant Line	Side-Street Stop	AM	A (A)	2 (4)
		PM	A (A)	2 (8)
2. 6th Street/Grant Line	Side-Street Stop	AM	A (A)	2 (7)
		PM	A (B)	2 (11)
3. 7th Street/Grant Line	Signal	AM	A	7
		PM	A	4
4. G Street/Grant Line	Side-Street Stop	AM	A (A)	2 (7)
		PM	A (A)	2 (8)
5. Bird Road/Grant Line	Side-Street Stop	AM	A (A)	1 (5)
		PM	A (A)	3 (7)
6. Berry Avenue/Grant Line	Side-Street Stop	AM	A (A)	1 (4)
		PM	A (A)	1 (5)
7. Stoneridge Drive/Grant Line	Side-Street Stop	AM	A (A)	1 (5)
		PM	A (A)	1 (6)
8. 11th Street/Grant Line	Roundabout	AM	A	9
		PM	A	8
9. I-5 SB Ramps/Kasson Road	Side-Street Stop	AM	A (A)	3 (6)
		PM	A (A)	1 (5)
10. I-5 NB Ramps/Kasson Road	Side-Street Stop	AM	A (A)	2 (4)
		PM	A (A)	1 (10)

Notes: For intersections controlled by a traffic signal or roundabout the overall intersection LOS and delay is presented. For side-street stop intersections the overall intersection delay is presented as well as the worst side-street movement LOS and delay in parenthesis. Delay is in seconds.
Source: Fehr & Peers, 2017.

Table 6 shows the 95th percentile queues in feet during the peak hours at each of study intersections based on the micro-simulation analysis results except at the Grant Line Road/11th Street roundabout intersection where analysis results from the SIDRA software were used. These queues are consistent with field observed conditions.

TABLE 6:
EXISTING PEAK HOUR QUEUING ANALYSIS

Intersection	Movement[1]	Available Storage (ft)	AM Peak Hour 95th Percentile Queue (ft)	PM Peak Hour 95th Percentile Queue (ft)
1. Banta Road / Grant Line	NB-LTR	>1,000	37	41
	EB-TR	>1,000	0	0
	WB-LT	1,430	13	40
2. 6th Street / Grant Line	NB-LTR	380	18	17
	EB-TR	1,430	0	0
	WB-LT	480	5	14
3. 7th Street / Grant Line	NB-LTR	260	51	33
	SB-LTR	400	98	59
	EB-LTR	480	86	142
	WB-LTR	480	147	109
4. G Street / Grant Line	NB-LTR	360	7	8
	EB-TR	480	0	0
	WB-LT	2,580	9	48
5. Bird / Grant Line	NB-LTR	690	44	39
	EB-TR	2,580	0	2
	WB-LT	1,020	0	12
6. Berry / Grant Line	SB-LTR	>1,000	5	6
	EB-LT	1,020	11	19
	WB-TR	900	0	0
7. Stoneridge / Grant Line	NB-LTR	490	28	22
	EB-TR	900	0	0
	WB-LT	730	0	15

TABLE 6:
EXISTING PEAK HOUR QUEUING ANALYSIS

Intersection	Movement[1]	Available Storage (ft)	AM Peak Hour 95th Percentile Queue (ft)	PM Peak Hour 95th Percentile Queue (ft)
8. 11th / Grant Line	NB-LTR	>1,000	53	57
	SB-LTR	>1,000	111	77
	EB-LTR	730	14	64
	WB-LTR	1,990	11	10
9. I-5 SB Ramps / Kasson	SB-LTR	550	104	57
	EB-TR	1,990	0	0
	WB-L	170	4	2
	WB-T	1,460	0	0
10. I-5 NB Ramps / Kasson	NB-LTR	630	60	40
	SB-LTR	290	18	17
	EB-L	120	4	4
	EB-TR	1,470	0	0
	WB-L	140	35	38
	WB-TR	>1,000	0	0

Notes: Results in bold denote locations where storage length is exceeded.

1. NB-northbound, SB-southbound, EB-eastbound, WB-westbound, L- left turn movement, T-through movement, R-right turn movement

Source: Fehr & Peers, 2017.

PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES

Sidewalks are not provided along the vast majority of Grant Line Road in the study area. Sidewalks and marked crosswalks are provided on some legs of the Grant Line Road intersections with 6th Street, 7th Street and 11th Street. The crosswalks at 6th Street and 7th Street are school crossings. The sidewalk/ school crosswalks on 6th Street and 7th Street are used often by pedestrian traffic traveling between residential units on the south side of Grant Line Road and the elementary school on the north side of Grant Line Road. There are no transit routes or facilities provided on Grant Line Road in the study area.

COLLISION ANALYSIS

Five years of collision data (January 1, 2009, through December 31, 2013) on Grant Line Road from the San Joaquin County Traffic Engineering Department were reviewed. **Table 7** summarizes the collision statistics recorded on Grant Line Road between Banta Road and 11th Street.

TABLE 7:
COLLISION HISTORY

Total Collisions	Total Fatalities	Total Injuries	Type of Collision			
			Sideswipe	Rear End	Broadside	Other
38	0	26	8	12	8	10

Source: San Joaquin County Traffic Engineering Department, 2014.

A total of 38 collisions were reported in the five-year period. Although no fatalities occurred, 26 people were injured in 14 of the 38 collisions. The majority of the collisions (12) were rear-end collisions. The next most frequent accident types were sideswipe and broadside collisions.

Table 8 shows the annual collision rate on Grant Line Road between Banta Road and 11th Street and the statewide average rate for similar roadways. The calculated collision rate is about 57% higher than the statewide average for rural two-lane conventional highways. The calculated injury rate is about 139% higher than the state average. High travel speeds (above posted speed limit) and lack of turn lanes at the intersections contribute to the above average collision rate on Grant Line Road as the majority of collisions were reported as rear-end collisions and over 35% of the collisions had "unsafe speed" listed as the primary collision factor.

TABLE 8:
COLLISION RATE

Grant Line Road Calculated Rate			Statewide Average Rate		
Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries
1.88	0.00	1.29	1.20	0.04	0.54

Note: Collision rate is the number of collisions per million vehicles miles of travel in a year. The statewide average rate is for a rural, two-lane state highway.

Source: Fehr & Peers, 2014. Caltrans, 2007.

CHAPTER 4. TRAVEL DEMAND FORECASTING

MODEL SELECTION AND ASSUMPTIONS

The City of Tracy travel demand model developed for the city's Transportation Master Plan was used to develop traffic forecasts for the study area. This model includes detailed roadway network and land use within the City of Tracy and also includes Grant Line Road and cross-streets in San Joaquin County. This model considers the following key roadway and land uses assumptions in the project area:

- I-205 is widened from a six-lane facility to an eight-lane facility by year 2035
- A new interchange is provided at I-205/Chrisman Road by year 2035
- Full buildout of the City of Tracy Northeast Industrial Area

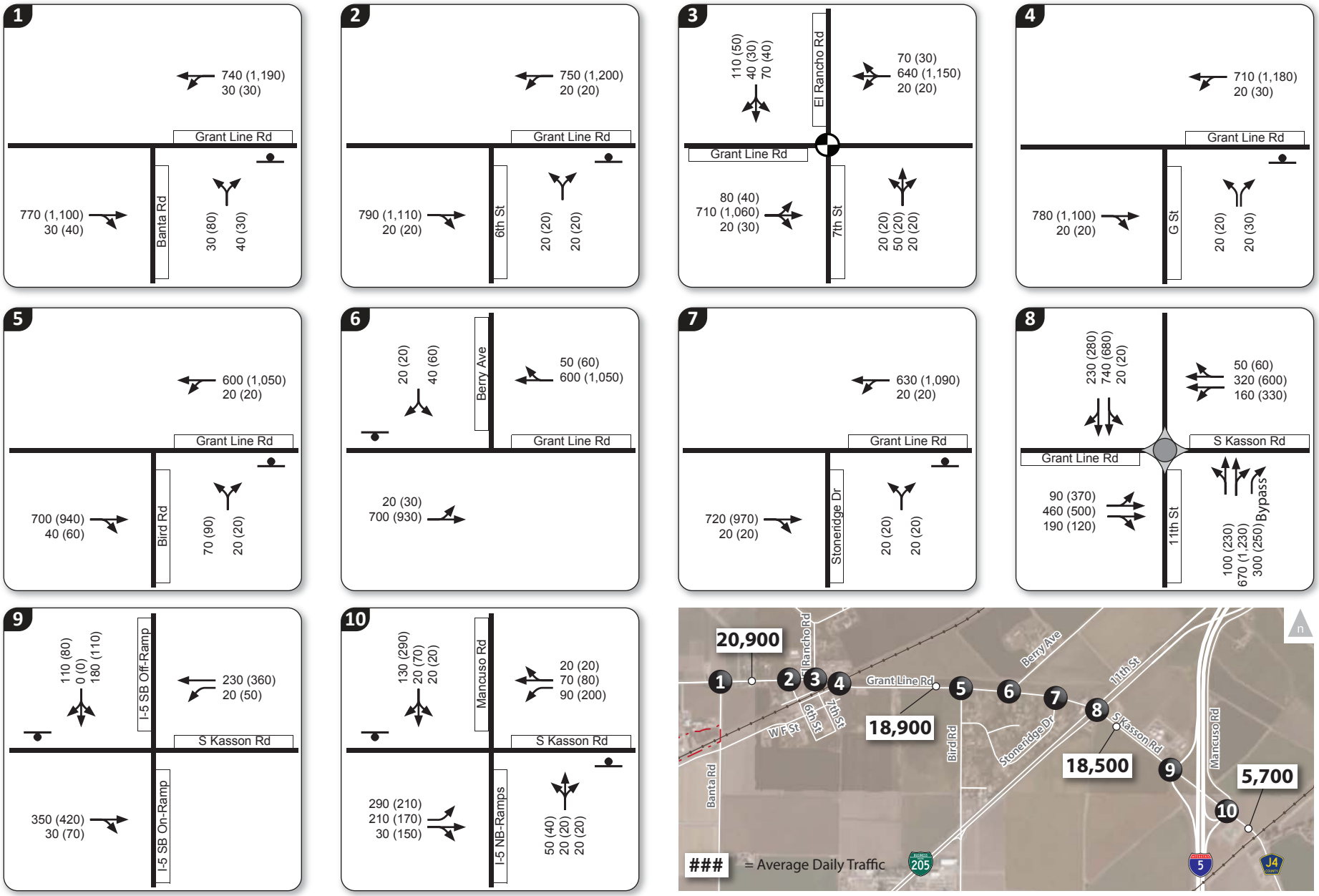
San Joaquin County staff provided the following information to include in the traffic forecasts:

- Approximately 396 acres of agricultural land use to be rezoned light industrial/commercial (located in the southeast quadrant of the 11th Street/Grant Line Road intersection)
- Approximately 107 acres of agricultural land use to be rezoned light industrial/commercial (located in the northeast quadrant of the Kasson Road/I-5 interchange)
- Approximately 115 acres of agricultural land use to be rezoned rural service/low density residential (located just east of G Street on the south side of Grant Line Road)

TRAFFIC FORECASTS

Figure 3 shows the year 2035 No Build Alternative traffic forecasts and lane configurations for the study intersections, while **Figure 4** shows the year 2035 Alternative 3A traffic forecasts and lane configurations for the study intersections.

Under the No Build scenario, intersection traffic volumes are expected to increase from existing conditions by approximately 158 percent (7.2 percent per year) during the AM peak hour and 153 percent (6.9 percent per year) during the PM peak hour. Average daily traffic volumes on Grant Line Road west of 11th Street are expected to increase from existing conditions by about 180 percent (8.2 percent per year). Under Alternative 3A the average daily traffic volumes on Grant Line Road would drop by about 90% as the roadway would primarily be used by local residents. It is anticipated that regional traffic including heavy trucks would shift to the new roadway under Alternative 3A.



WC14-3104_3_2035NBvol

LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Roundabout | # Study Intersection

Figure 3

2035 No Build
Traffic Volumes, Lane Configurations and Intersection Controls

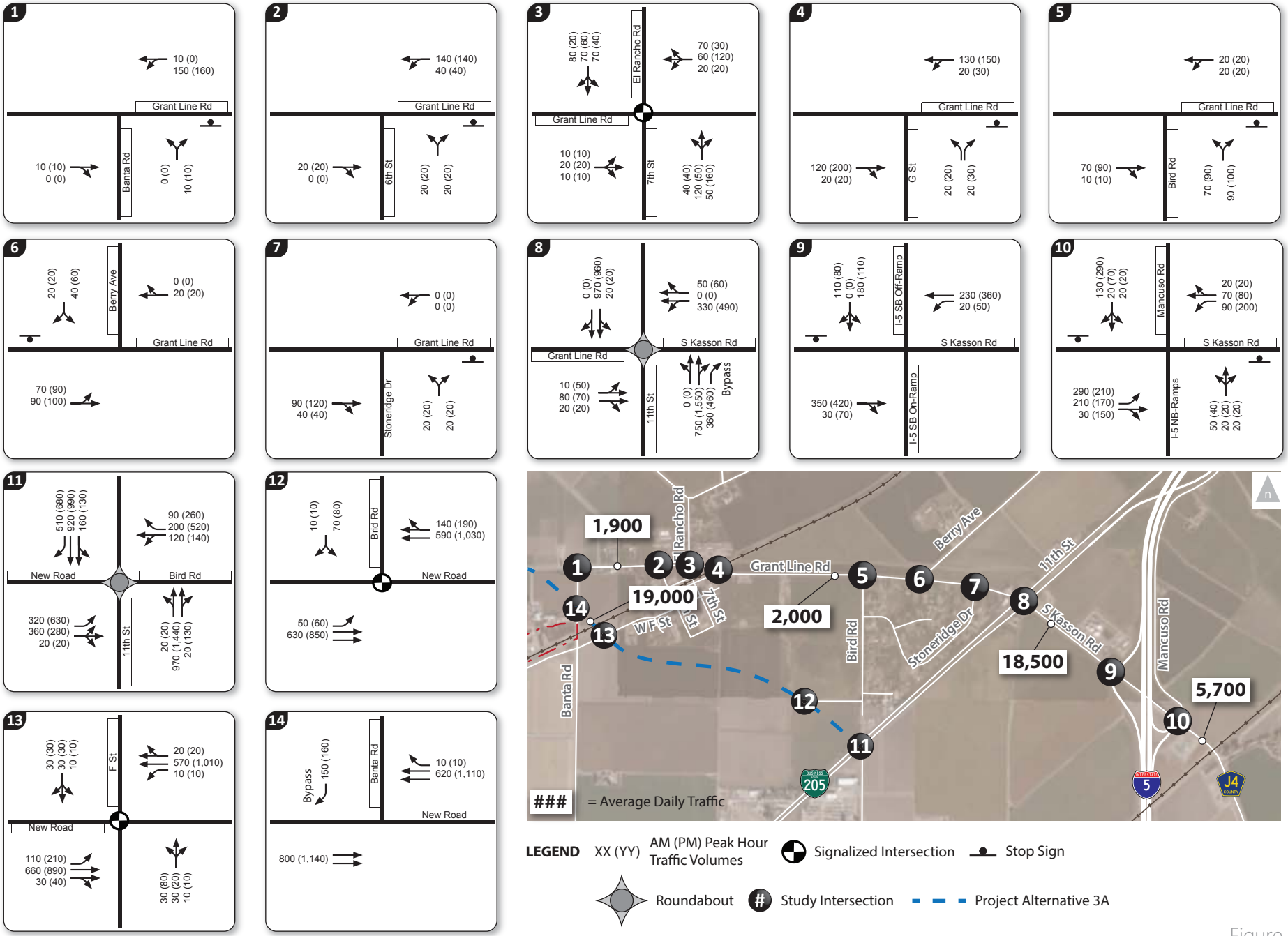


Figure 4

2035 Alternative 3A
Traffic Volumes, Lane Configurations and Intersection Controls

CHAPTER 5. YEAR 2035 CONDITIONS

ALTERNATIVES

The following alternatives were analyzed under year 2035 conditions.

- **No Build Alternative** – Grant Line Road east of 11th Street maintains the existing intersection traffic control and lane configuration.[1]
- **Build Alternative 3A** – Grant Line Road east of 11th Street maintains the existing intersection traffic control and lane configuration except that westbound access from the 11th Street/Grant Line Road roundabout is eliminated. Furthermore, under Alternative 3A a new four-lane roadway would be constructed south of Grant Line Road between the City of Tracy/San Joaquin County boundary and 11th Street. The new roadway would have four local street connections at the following locations:
    - Banta Road (right in/right out)
    - F Street (traffic signal controlled)
    - New connection to Bird Road (traffic signal control)
    - 11th Street (two-lane roundabout)

OPERATIONS ANALYSIS

ROADWAY SEGMENTS

Table 9 presents the year 2035 daily volume roadway segment analysis. As shown, Grant Line Road will operate at LOS F as a two-lane roadway under No Build conditions and would improve to LOS A under Alternative 3A as regional traffic and trucks divert to the new roadway. The new roadway under Alternative 3A would operate at LOS A as a four-lane facility.

[1] Under both the No Build and Build Alternatives it was assumed that the planned developments on the east side of 11th Street would provide improvements on Kasson Road. This study assumes that Kasson Road is widened to a four-lane roadway.

TABLE 9:
YEAR 2035 ROADWAY SEGMENT LEVEL OF SERVICE

Location	Alternative	Facility Type	Daily Volume	Level of Service
Grant Line Road just east of Banta Road	No Build	Two-lanes *with no* turning lanes	20,900	F
	Alternative 3A	Two-lanes *with no* turning lanes	1,900	A
Grant Line Road just west of Bird Road	No Build	Two-lanes *with no* turning lanes	18,900	F
	Alternative 3A	Two-lanes *with no* turning lanes	2,000	A
Kasson Road just east of 11th Street	No Build	Four-lanes *with* turning lanes[1]	18,500	A
	Alternative 3A	Four-lanes *with* turning lanes[1]	18,500	A
Kasson Road just east of I-5/ Kasson Road interchange	No Build	Two-lanes *with no* turning lanes	5,700	A
	Alternative 3A	Two-lanes *with no* turning lanes	5,700	A
New Roadway	Alternative 3A	Four-lanes *with* turning lanes	19,000	A

1. Assumes that proposed developments on the east side of 11th Street will widen roadway to four-lanes with our without the proposed project.
Source: Fehr & Peers, 2015.

INTERSECTION DELAY AND LOS

Table 10 shows the average delay in seconds and LOS for the alternatives under Year 2035 conditions (see **Appendices D** and **E** for detailed analysis results). As shown in Table 10, traffic operations at the intersections west of 11th Street are anticipated to deteriorate substantially by Year 2035 under No Build conditions. Many of the locations are projected to operate overall at unacceptable LOS F conditions and those intersections that do not operate at LOS F are projected to have side-street movements experiencing very high delays and operating at LOS F. The projected growth in traffic on Grant Line Road is expected to result in very few gaps in the eastbound and westbound through traffic streams to allow side-street traffic to turn onto Grant Line Road.

Under Alternative 3A conditions all of the study intersections on Grant Line Road and Kasson Road are anticipated to operate overall at acceptable LOS C or better conditions. With the exception of the two-lane roundabout on the New Roadway the new intersections under Alternative 3A are anticipated to operate at

acceptable LOS B or better conditions. The new two-lane roundabout at the New Roadway/11th Street intersection is anticipated to operate at LOS E and F during the AM and PM peak hour, respectively.

TABLE 10:
YEAR 2035 OPERATIONS ANALYSIS

Intersection	No Build			Build Alternative 3A	
	Control	AM	PM	AM	PM
1. Banta Road / Grant Line	Side-Street Stop	75/F (>120/F)	112/F (>120/F)	2/A (2/A)	2/A (2/A)
2. 6th Street / Grant Line	Side-Street Stop	91/F (>120/F)	80/F (>120/F)	2/A (4/A)	2/A (4/A)
3. 7th Street / Grant Line	Signal	>120/F[1]	>120/F[1]	6/A	5/A
4. G Street / Grant Line	Side-Street Stop	11/B (52/F)	>120/F (>120/F)	1/A (4/A)	2/A (4/A)
5. Bird Road / Grant Line	Side-Street Stop	5/A (19/C)	56/F (>120/F)	2/A (4/A)	2/A (5/A)
6. Berry Avenue / Grant Line	Side-Street Stop	4/A (23/C)	33/D (>120/F)	2/A (3/A)	2/A (4/A)
7. Stoneridge Drive / Grant Line	Side-Street Stop	2/A (19/C)	8/A (79/F)	2/A (4/A)	1/A (4/A)
8. 11th Street / Grant Line	Two-lane Roundabout	24/C	22/C	10/B	16/C
9. I-5 SB Ramps / Kasson Road	Side-Street Stop	7/A (16/C)	5/A (15/B)	6/A (12/B)	5/A (11/B)
10. I-5 NB Ramps / Kasson Road	Side-Street Stop	5/A (15/C)	9/A (29/D)	5/A (11/B)	11/B (24/C)
11. New Roadway / 11th Street	Two-lane Roundabout	-	-	43/E	113/F
12. New Roadway / Bird Road	Signal	-	-	5/A	6/A
13. New Roadway / 7th Street Extension	Side-Street Stop	-	-	7/A	11/B
14. New Roadway / Banta Road	None ("Free" Movements)	-	-	n/a	n/a

Notes: For intersections controlled by a traffic signal or roundabout the overall intersection delay/LOS is presented. For side-street stop intersections the overall intersection delay/LOS is presented, as well as the worst side-street movement delay/LOS in parenthesis. Delay is in seconds.

1 Includes EB through delay at 6th Street and WB through delay at G Street.

Source: Fehr & Peers, 2017.

New Roadway/11th Street Roundabout Sensitivity Analysis

The proposed two-lane roundabout at the New Roadway/11th Street intersection is anticipated to operate at LOS E and F during the AM and PM peak hour, respectively. As noted earlier, the traffic forecasts assume development of approximately 396 acres of light industrial/commercial use in the southeast quadrant of the 11th Street/Grant Line Road intersection that is currently agricultural use. The exact timing of the light industrial/commercial development is unknown, and it's conceivable that some or all of the development could occur after year 2035.

A sensitivity analysis was performed for the New Roadway/11th Street roundabout assuming the light industrial/commercial development *does not occur* by 2035. Under this land use scenario the traffic forecasts at the New Roadway/11th Street intersection would be about 34% lower in the AM and PM peak hour. **Table 11** shows the average delay in seconds and LOS for the New Roadway/11th Street intersection assuming the light industrial/commercial development does not occur by 2035. As shown in Table 11, the two-lane roundabout would operate at LOS C or better conditions.

TABLE 11:
NEW ROADWAY/11TH STREET SENSITIVITY ANALYSIS RESULTS

Intersection	Build Alternative 3A		
	Control	AM	PM
11. New Roadway / 11th Street	Two-lane Roundabout	7/A	18/C

Notes: Roundabout overall intersection delay/LOS is presented. Delay is in seconds.
Source: Fehr & Peers, 2017.

INTERSECTION 95TH PERCENTILE QUEUE LENGTHS

Table 12 shows the 95th percentile queue lengths at each of the study intersections under No Build and Alternative 3A conditions. As shown, the proposed project design for Alternative 3A would accommodate the 95th percentile queue lengths.

TABLE 12:
2035 PEAK HOUR QUEUING ANALYSIS

Intersection	No Build					Alternative 3A			
	Control	Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)		Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)	
				AM	PM			AM	PM
Banta Road/Grant Line	Side-Street Stop	NB-LTR	>1,000	256	894	NB-LTR	>1,000	30	28
		EB-TR	>1,000	2209	2304	EB-TR	>1,000	0	0
		WB-LT	1,430	162	431	WC-LT	1,430	14	12
6th Street / Grant Line	Side-Street Stop	NB-LTR	380	52	96	NB-LTR	380	37	37
		EB-TR	1,430	1911	**1828**	EB-TR	1,430	0	0
		WB-LT	480	271	350	WC-LT	480	8	12
7th Street / Grant Line	Signal	NB-LTR	260	92	79	NB-LTR	260	85	86
		SB-LTR	400	193	137	SB-LTR	400	92	67
		EB-LTR	480	**537**	**520**	EB-LTR	480	42	40
		WB-LTR	480	**558**	**601**	WB-LTR	480	68	73
G Street / Grant Line	Side-Street Stop	NB-LTR	360	35	307	NB-LTR	360	15	16
		EB-TR	480	3	5	EB-TR	480	0	0
		WB-LT	2,580	504	**3218**	WB-LT	2,580	18	32
Bird / Grant Line	Side-Street Stop	NB-LR	690	73	**792**	NB-LR	690	54	60
		EB-TR	2,580	2	58	EB-TR	2,580	0	0
		WB-LT	1,020	89	**1203**	WB-LT	1,020	10	12

TABLE 12:
2035 PEAK HOUR QUEUING ANALYSIS

Intersection	No Build					Alternative 3A			
	Control	Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)		Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)	
				AM	PM			AM	PM
Berry / Grant Line	Side-Street Stop	SB-LR	>1,000	46	318	SB-LR	>1,000	18	24
		EB-LT	1,020	126	408	EB-LT	1,020	14	10
		WB-TR	900	5	**934**	WB-TR	900	0	0
Stoneridge / Grant Line	Side-Street Stop	NB-LR	490	53	77	NB-LR	490	45	44
		EB-TR	900	7	3	EB-TR	900	0	0
		WB-LT	730	91	350	WB-LT	730	0	0
11th / Grant Line	Roundabout	NB-LTR	>1,000	99	178	NB-LTR	>1,000	55	154
		SB-LTR	>1,000	216	148	SB-LTR	>1,000	142	141
		EB-LTR	730	239	232	EB-LTR	730	18	20
		WB-LTR	1,990	86	113	WB-LTR	1,990	40	138
I-5 SB Ramps / Kasson	Side-Street Stop	SB-LTR	550	202	129	SB-LTR	550	172	121
		EB-TR	1,990	0	0	EB-TR	1,990	0	3
		WB-L	170	31	45	WB-L	170	32	48
		WB-T	1,460	7	3	WB-T	1,460	0	5
I-5 NB Ramps / Kasson	Side-Street Stop	NB-LTR	630	96	82	NB-LTR	630	85	79
		SB-LTR	290	114	246	SB-LTR	290	101	283
		EB-L	120	82	62	EB-L	120	68	56

TABLE 12:
2035 PEAK HOUR QUEUING ANALYSIS

Intersection	No Build					Alternative 3A			
	Control	Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)		Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)	
				AM	PM			AM	PM
		EB-TR	1,460	9	23	EB-TR	1,460	107	31
		WB-L	140	45	73	WB-L	140	44	74
		WB-TR	>1,000	5	8	WB-TR	>1,000	4	6
New Roadway/11th Street	Roundabout	-	-	-	-	NB-LTR	>4,000	643	3,015
						SB-LTR	>1,000	163	185
						EB-LTR	>1,000	283	447
						WB-LTR	>2,000	219	1,811
New Roadway/Bird Road	Signal	-	-	-	-	NB-T	>1,000	75	117
						NB-TR	>1,000	122	146
						SB-L	>1,000	60	71
						SB-T	>1,000	82	91
						WB-LR	>1,000	65	82
New Roadway /F Street	Signal	-	-	-	-	NB-L	200	30	33
						NB-T	>1,000	96	184
						NB-TR	>1,000	121	203
						SB-L	200	80	149
						SB-T	>1,000	80	95

TABLE 12:
2035 PEAK HOUR QUEUING ANALYSIS

Intersection	No Build					Alternative 3A			
	Control	Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)		Approach[1]	Available Storage (ft)	Peak Hour 95th Percentile Queue (ft)	
				AM	PM			AM	PM
						SB-TR	>1,000	91	118
						EB-LTR	>1,000	68	99
						WB-LTR	>1,000	67	73
New Roadway / Banta Road	"Free"	-	-	-	-	NB-TR	>1,000	0	0
						SB-T	>1,000	0	0
						WB-R	>1,000	0	0

Notes: Results in **bold** denote locations where storage length is exceeded.

1. NB-northbound, SB-southbound, EB-eastbound, WB-westbound, L- left turn movement, T-through movement, R-right turn movement

Source: Fehr & Peers, 2017.

APPENDIX A:
CONCEPTUAL LAYOUT OF ALTERNATIVE

GRANT LINE CORRIDOR - ALTERNATIVE 3A

REMOVE PAVEMENT

GRANT LINE ROAD TRAFFIC VOLUMES BETWEEN BANTA AND 6TH

EXISTING	7,300
2035 PROJECTION W/ NO PROJECT	20,900
2035 PROJECTION W/ ALT 3A	3,100

TRIGO
APN 250-050-11

EL RANCHO RD

AT-GRADE CROSSING CLOSED

EXISTING RIGHT OF WAY

GRANT LINE RD

REMOVE CONNECTION TO GRANT LINE ROAD

CASSETTARI
APN 250-050-10

YULAN ESTATE LLC
APN 250-030-05

110'

PROPOSED RIGHT OF WAY

INTERSECTION "A"

YULAN ESTATE LLC
APN 250-040-09

G ST

F ST

7TH ST

6TH ST

UPRR APN 250-040-10

UPRR APN 250-010-23

PLANT PROPERTIES LLC
APN 250-080-22

CHABOT CT

YULAN ESTATE LLC
APN 250-030-04

CITY LIMITS

CARNAHAN
APN 250-120-03

PROPERTY LINE

TONG
APN 250-090-09

GRANT LINE ROAD TRAFFIC VOLUMES BETWEEN G STREET AND BIRD

EXISTING	6,900
2035 PROJECTION W/ NO PROJECT	18,900
2035 PROJECTION W/ ALT 3A	3,100

EXISTING RIGHT OF WAY

PROPERTY LINE

S BIRD RD

PROPERTY LINE

110'

A

A

INTERSECTION "B"

PROPOSED RIGHT OF WAY

NEW GRANT LINE TRAFFIC VOLUMES DIVERTED TRAFFIC

EXISTING	0
2035 PROJECTION W/ NO PROJECT	0
2035 PROJECTION W/ ALT 3A	20,500

EXISTING RIGHT OF WAY

UPRR APN 250-010-03

REMOVE PAVEMENT

CITY LIMITS

BANTA RD

SANDHU
APN 250-090-06

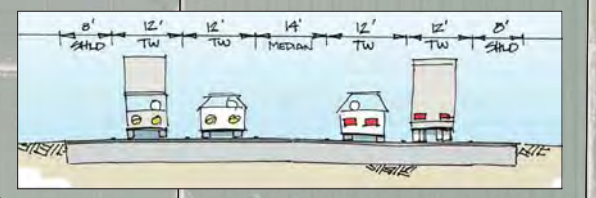
PROPOSED RIGHT OF WAY

B

B

50'

TONG
APN 250-090-09



SECTION A-A

INTERSECTION "C"

EXISTING RIGHT OF WAY

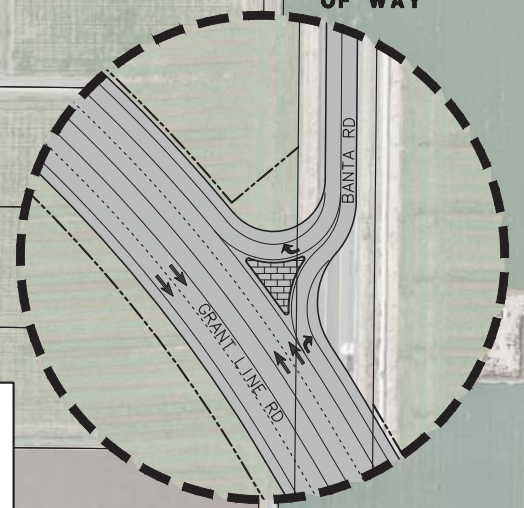
EDWARDS
APN 250-120-04

PROPOSED ROUNDABOUT

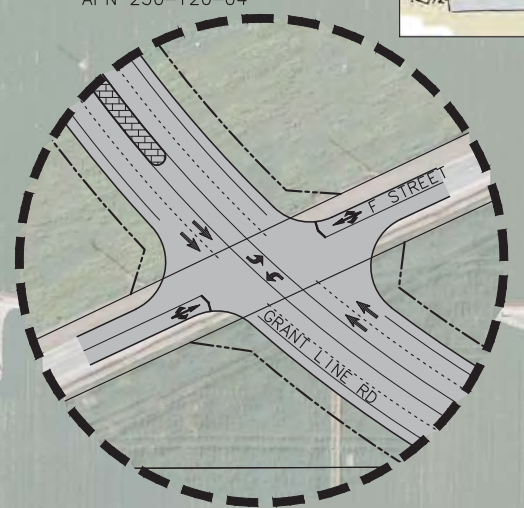
REMOVE CONNECTION TO 11TH STREET

EAST 11TH STREET

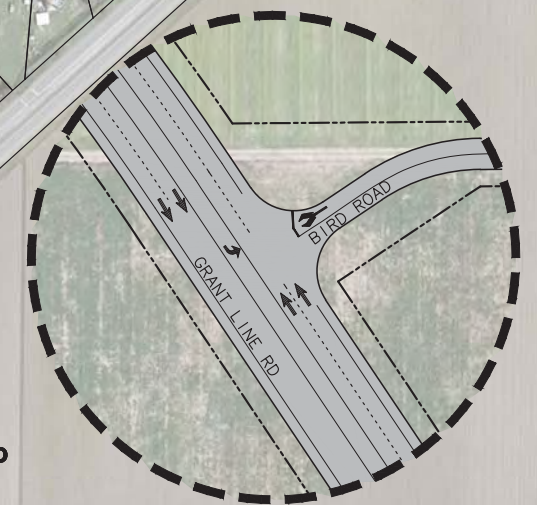
HALL
APN 250-100-01



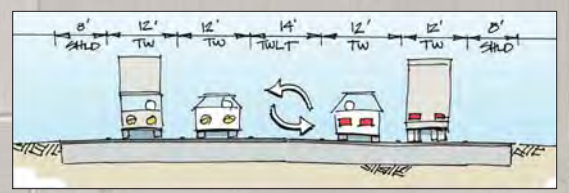
INTERSECTION "A"
GRANT LINE ROAD/BANTA ROAD



INTERSECTION "B"
GRANT LINE ROAD/F STREET



INTERSECTION "C"
GRANT LINE ROAD/BIRD ROAD



SECTION B-B

SCALE: 1"=250'
0ft 250ft 500ft

SAN JOAQUIN COUNTY CALIFORNIA

MARK THOMAS

APPENDIX B:
TRAFFIC DATA

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-010 I-5 Northbound Ramps-Kasson Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Mansruso Road Southbound					Kasson Road Westbound					I-5 Northbound Ramps Northbound					Kasson Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	1	0	1	10	11	1	0	22	6	0	1	0	7	0	43	3	0	46	76	0
07:15	1	0	1	0	2	7	16	0	0	23	8	0	0	0	8	1	41	1	0	43	76	0
07:30	1	0	1	0	2	14	17	0	0	31	9	0	2	0	11	2	63	3	0	68	112	0
07:45	0	0	0	0	0	9	15	0	0	24	11	0	1	0	12	0	48	3	0	51	87	0
Total	2	0	3	0	5	40	59	1	0	100	34	0	4	0	38	3	195	10	0	208	351	0
08:00	0	0	3	0	3	7	16	0	0	23	6	0	2	0	8	2	21	3	0	26	60	0
08:15	0	0	2	0	2	6	15	0	0	21	5	1	0	0	6	1	26	3	0	30	59	0
08:30	1	0	3	0	4	6	18	0	0	24	13	0	1	0	14	0	19	3	0	22	64	0
08:45	0	0	0	0	0	5	10	0	0	15	9	0	0	0	9	1	19	1	0	21	45	0
Total	1	0	8	0	9	24	59	0	0	83	33	1	3	0	37	4	85	10	0	99	228	0
16:00	2	0	1	0	3	44	13	0	0	57	8	0	0	0	8	3	27	2	0	32	100	0
16:15	0	0	1	0	1	19	13	0	0	32	3	0	0	0	3	0	24	6	0	30	66	0
16:30	0	0	1	0	1	28	15	0	0	43	3	1	0	0	4	2	19	9	0	30	78	0
16:45	0	0	0	0	0	15	15	1	0	31	4	0	0	0	4	0	25	5	0	30	65	0
Total	2	0	3	0	5	106	56	1	0	163	18	1	0	0	19	5	95	22	0	122	309	0
17:00	0	0	0	0	0	13	13	0	0	26	5	0	3	0	8	1	30	5	0	36	70	0
17:15	0	0	0	0	0	15	10	0	0	25	8	0	1	0	9	0	36	4	0	40	74	0
17:30	0	0	0	0	0	7	10	0	0	17	4	0	0	0	4	0	22	5	0	27	48	0
17:45	0	0	0	0	0	7	14	0	0	21	11	0	0	0	11	0	24	4	0	28	60	0
Total	0	0	0	0	0	42	47	0	0	89	28	0	4	0	32	1	112	18	0	131	252	0
Grand Total	5	0	14	0	19	212	221	2	0	435	113	2	11	0	126	13	487	60	0	560	1140	0
Apprch %	26.3%	0.0%	73.7%	0.0%		48.7%	50.8%	0.5%	0.0%		89.7%	1.6%	8.7%	0.0%		2.3%	87.0%	10.7%	0.0%			
Total %	0.4%	0.0%	1.2%	0.0%	1.7%	18.6%	19.4%	0.2%	0.0%	38.2%	9.9%	0.2%	1.0%	0.0%	11.1%	1.1%	42.7%	5.3%	0.0%	49.1%	100.0%	

AM PEAK HOUR	Mansruso Road Southbound					Kasson Road Westbound					I-5 Northbound Ramps Northbound					Kasson Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	0	0	1	0	1	10	11	1	0	22	6	0	1	0	7	0	43	3	0	46	76
07:15	1	0	1	0	2	7	16	0	0	23	8	0	0	0	8	1	41	1	0	43	76
07:30	1	0	1	0	2	14	17	0	0	31	9	0	2	0	11	2	63	3	0	68	112
07:45	0	0	0	0	0	9	15	0	0	24	11	0	1	0	12	0	48	3	0	51	87
Total Volume	2	0	3	0	5	40	59	1	0	100	34	0	4	0	38	3	195	10	0	208	351
% App Total	40.0%	0.0%	60.0%	0.0%		40.0%	59.0%	1.0%	0.0%		89.5%	0.0%	10.5%	0.0%		1.4%	93.8%	4.8%	0.0%		
PHF	.500	.000	.750	.000	.625	.714	.868	.250	.000	.806	.773	.000	.500	.000	.792	.375	.774	.833	.000	.765	.783

PM PEAK HOUR	Mansruso Road Southbound					Kasson Road Westbound					I-5 Northbound Ramps Northbound					Kasson Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	2	0	1	0	3	44	13	0	0	57	8	0	0	0	8	3	27	2	0	32	100
16:15	0	0	1	0	1	19	13	0	0	32	3	0	0	0	3	0	24	6	0	30	66
16:30	0	0	1	0	1	28	15	0	0	43	3	1	0	0	4	2	19	9	0	30	78
16:45	0	0	0	0	0	15	15	1	0	31	4	0	0	0	4	0	25	5	0	30	65
Total Volume	2	0	3	0	5	106	56	1	0	163	18	1	0	0	19	5	95	22	0	122	309
% App Total	40.0%	0.0%	60.0%	0.0%		65.0%	34.4%	0.6%	0.0%		94.7%	5.3%	0.0%	0.0%		4.1%	77.9%	18.0%	0.0%		
PHF	.250	.000	.750	.000	.417	.602	.933	.250	.000	.715	.563	.250	.000	.000	.594	.417	.880	.611	.000	.953	.773

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-009 I-5 Southbound Ramps-Kasson Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	I-5 Southbound Off Ramp Southbound					Kasson Road Westbound					I-5 Southbound On Ramp Northbound					Kasson Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	36	0	4	0	40	1	19	0	0	20	0	0	0	0	0	0	9	7	0	16	76	0
07:15	31	0	7	0	38	0	23	0	0	23	0	0	0	0	0	0	14	3	0	17	78	0
07:30	45	0	1	0	46	1	25	0	0	26	0	0	0	0	0	0	18	2	0	20	92	0
07:45	43	0	4	0	47	1	24	0	0	25	0	0	0	0	0	0	13	5	0	18	90	0
Total	155	0	16	0	171	3	91	0	0	94	0	0	0	0	0	0	54	17	0	71	336	0
08:00	13	0	2	0	15	3	24	0	0	27	0	0	0	0	0	0	14	6	0	20	62	0
08:15	13	0	3	0	16	0	22	0	0	22	0	0	0	0	0	0	15	4	0	19	57	0
08:30	9	0	1	0	10	0	34	0	0	34	0	0	0	0	0	0	14	2	0	16	60	0
08:45	11	0	1	0	12	0	18	0	0	18	0	0	0	0	0	0	10	7	0	17	47	0
Total	46	0	7	0	53	3	98	0	0	101	0	0	0	0	0	0	53	19	0	72	226	0
16:00	3	0	2	0	5	1	20	0	0	21	0	0	0	0	0	0	26	9	0	35	61	0
16:15	6	0	2	0	8	0	19	0	0	19	0	0	0	0	0	0	27	6	0	33	60	0
16:30	7	0	4	0	11	0	17	0	0	17	0	0	0	0	0	0	24	3	0	27	55	0
16:45	7	0	6	0	13	0	19	0	0	19	0	0	0	0	0	0	20	7	0	27	59	0
Total	23	0	14	0	37	1	75	0	0	76	0	0	0	0	0	0	97	25	0	122	235	0
17:00	9	0	2	0	11	1	18	0	0	19	0	0	0	0	0	0	28	5	0	33	63	0
17:15	9	0	3	0	12	0	16	0	0	16	0	0	0	0	0	0	32	9	0	41	69	0
17:30	4	0	2	0	6	1	13	0	0	14	0	0	0	0	0	0	21	12	0	33	53	0
17:45	5	1	2	0	8	0	26	0	0	26	0	0	0	0	0	0	23	21	0	44	78	0
Total	27	1	9	0	37	2	73	0	0	75	0	0	0	0	0	0	104	47	0	151	263	0
Grand Total	251	1	46	0	298	9	337	0	0	346	0	0	0	0	0	0	308	108	0	416	1060	0
Apprch %	84.2%	0.3%	15.4%	0.0%		2.6%	97.4%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	74.0%	26.0%	0.0%			
Total %	23.7%	0.1%	4.3%	0.0%	28.1%	0.8%	31.8%	0.0%	0.0%	32.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.1%	10.2%	0.0%	39.2%	100.0%	

AM PEAK HOUR	I-5 Southbound Off Ramp Southbound					Kasson Road Westbound					I-5 Southbound On Ramp Northbound					Kasson Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	36	0	4	0	40	1	19	0	0	20	0	0	0	0	0	0	9	7	0	16	76
07:15	31	0	7	0	38	0	23	0	0	23	0	0	0	0	0	0	14	3	0	17	78
07:30	45	0	1	0	46	1	25	0	0	26	0	0	0	0	0	0	18	2	0	20	92
07:45	43	0	4	0	47	1	24	0	0	25	0	0	0	0	0	0	13	5	0	18	90
Total Volume	155	0	16	0	171	3	91	0	0	94	0	0	0	0	0	0	54	17	0	71	336
% App Total	90.6%	0.0%	9.4%	0.0%		3.2%	96.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	76.1%	23.9%	0.0%		
PHF	.861	.000	.571	.000	.910	.750	.910	.000	.000	.904	.000	.000	.000	.000	.000	.000	.750	.607	.000	.888	.913

PM PEAK HOUR	I-5 Southbound Off Ramp Southbound					Kasson Road Westbound					I-5 Southbound On Ramp Northbound					Kasson Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	9	0	2	0	11	1	18	0	0	19	0	0	0	0	0	0	28	5	0	33	63
17:15	9	0	3	0	12	0	16	0	0	16	0	0	0	0	0	0	32	9	0	41	69
17:30	4	0	2	0	6	1	13	0	0	14	0	0	0	0	0	0	21	12	0	33	53
17:45	5	1	2	0	8	0	26	0	0	26	0	0	0	0	0	0	23	21	0	44	78
Total Volume	27	1	9	0	37	2	73	0	0	75	0	0	0	0	0	0	104	47	0	151	263
% App Total	73.0%	2.7%	24.3%	0.0%		2.7%	97.3%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	68.9%	31.1%	0.0%		
PHF	.750	.250	.750	.000	.771	.500	.702	.000	.000	.721	.000	.000	.000	.000	.000	.000	.813	.560	.000	.858	.843

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-008 11th Street-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	11th Street Southbound					Kasson Road Westbound					11th Street Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	1	118	24	0	143	5	14	0	0	19	0	126	4	0	130	7	11	0	0	18	310	0
07:15	1	169	30	0	200	10	14	0	0	24	2	161	3	0	166	12	11	0	0	23	413	0
07:30	4	210	56	1	271	7	16	1	0	24	0	197	5	1	203	18	9	1	0	28	526	2
07:45	0	222	45	1	268	8	15	2	0	25	1	176	9	0	186	16	6	0	0	22	501	1
Total	6	719	155	2	882	30	59	3	0	92	3	660	21	1	685	53	37	1	0	91	1750	3
08:00	1	123	30	1	155	7	20	1	0	28	0	122	7	0	129	13	12	2	0	27	339	1
08:15	3	142	58	1	204	9	16	2	0	27	0	147	8	1	156	13	8	0	0	21	408	2
08:30	1	118	59	0	178	10	22	1	0	33	1	139	3	0	143	14	11	0	0	25	379	0
08:45	1	121	73	1	196	5	14	1	0	20	0	116	7	0	123	16	8	0	0	24	363	1
Total	6	504	220	3	733	31	72	5	0	108	1	524	25	1	551	56	39	2	0	97	1489	4
16:00	1	150	12	1	164	5	15	2	0	22	0	150	19	0	169	32	25	3	0	60	415	1
16:15	0	139	13	0	152	8	11	2	0	21	0	170	15	0	185	18	13	1	0	32	390	0
16:30	1	156	12	0	169	4	9	3	0	16	1	220	12	0	233	48	17	0	0	65	483	0
16:45	0	167	23	0	190	7	18	1	0	26	0	174	11	0	185	33	13	1	0	47	448	0
Total	2	612	60	1	675	24	53	8	0	85	1	714	57	0	772	131	68	5	0	204	1736	1
17:00	1	176	32	1	210	8	13	2	0	23	1	223	12	1	237	85	21	0	0	106	576	2
17:15	2	189	81	0	272	3	15	3	0	21	0	196	15	1	212	40	21	0	0	61	566	1
17:30	5	157	97	1	260	3	13	2	0	18	0	164	6	1	171	65	22	1	0	88	537	2
17:45	1	140	57	1	199	4	24	0	0	28	3	136	7	0	146	128	29	2	0	159	532	1
Total	9	662	267	3	941	18	65	7	0	90	4	719	40	3	766	318	93	3	0	414	2211	6
Grand Total	23	2497	702	9	3231	103	249	23	0	375	9	2617	143	5	2774	558	237	11	0	806	7186	14
Apprch %	0.7%	77.3%	21.7%	0.3%		27.5%	66.4%	6.1%	0.0%		0.3%	94.3%	5.2%	0.2%		69.2%	29.4%	1.4%	0.0%			
Total %	0.3%	34.7%	9.8%	0.1%	45.0%	1.4%	3.5%	0.3%	0.0%	5.2%	0.1%	36.4%	2.0%	0.1%	38.6%	7.8%	3.3%	0.2%	0.0%	11.2%	100.0%	

AM PEAK HOUR	11th Street Southbound					Kasson Road Westbound					11th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	1	169	30	0	200	10	14	0	0	24	2	161	3	0	166	12	11	0	0	23	413
07:30	4	210	56	1	271	7	16	1	0	24	0	197	5	1	203	18	9	1	0	28	526
07:45	0	222	45	1	268	8	15	2	0	25	1	176	9	0	186	16	6	0	0	22	501
08:00	1	123	30	1	155	7	20	1	0	28	0	122	7	0	129	13	12	2	0	27	339
Total Volume	6	724	161	3	894	32	65	4	0	101	3	656	24	1	684	59	38	3	0	100	1779
% App Total	0.7%	81.0%	18.0%	0.3%		31.7%	64.4%	4.0%	0.0%		0.4%	95.9%	3.5%	0.1%		59.0%	38.0%	3.0%	0.0%		
PHF	.375	.815	.719	.750	.825	.800	.813	.500	.000	.902	.375	.832	.667	.250	.842	.819	.792	.375	.000	.893	.846

PM PEAK HOUR	11th Street Southbound					Kasson Road Westbound					11th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	176	32	1	210	8	13	2	0	23	1	223	12	1	237	85	21	0	0	106	576
17:15	2	189	81	0	272	3	15	3	0	21	0	196	15	1	212	40	21	0	0	61	566
17:30	5	157	97	1	260	3	13	2	0	18	0	164	6	1	171	65	22	1	0	88	537
17:45	1	140	57	1	199	4	24	0	0	28	3	136	7	0	146	128	29	2	0	159	532
Total Volume	9	662	267	3	941	18	65	7	0	90	4	719	40	3	766	318	93	3	0	414	2211
% App Total	1.0%	70.4%	28.4%	0.3%		20.0%	72.2%	7.8%	0.0%		0.5%	93.9%	5.2%	0.4%		76.8%	22.5%	0.7%	0.0%		
PHF	.450	.876	.688	.750	.865	.563	.677	.583	.000	.804	.333	.806	.667	.750	.808	.621	.802	.375	.000	.651	.960

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-007 Stoneridge Drive-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Southbound					Grant Line Road Westbound					Stoneridge Drive Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	0	19	0	0	19	57	0
07:15	0	0	0	0	0	0	44	0	0	44	1	0	1	0	2	0	22	1	0	23	69	0
07:30	0	0	0	0	0	0	74	0	0	74	2	0	1	0	3	0	26	0	0	26	103	0
07:45	0	0	0	0	0	0	59	0	0	59	1	0	2	0	3	0	21	1	0	22	84	0
Total	0	0	0	0	0	0	215	0	0	215	4	0	4	0	8	0	88	2	0	90	313	0
08:00	0	0	0	0	0	0	51	0	0	51	2	0	0	0	2	0	29	1	0	30	83	0
08:15	0	0	0	0	0	0	71	0	0	71	3	0	0	0	3	0	21	1	0	22	96	0
08:30	0	0	0	0	0	0	83	0	0	83	0	0	1	0	1	0	24	0	0	24	108	0
08:45	0	0	0	0	0	0	84	0	0	84	0	0	0	0	0	0	23	0	0	23	107	0
Total	0	0	0	0	0	0	289	0	0	289	5	0	1	0	6	0	97	2	0	99	394	0
16:00	0	0	0	0	0	1	24	0	0	25	1	0	0	0	1	0	59	4	0	63	89	0
16:15	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	29	0	0	29	53	0
16:30	0	0	0	0	0	2	18	0	0	20	3	0	0	0	3	0	62	3	0	65	88	0
16:45	0	0	0	0	0	2	37	0	0	39	0	0	1	0	1	0	46	0	0	46	86	0
Total	0	0	0	0	0	5	103	0	0	108	4	0	1	0	5	0	196	7	0	203	316	0
17:00	0	0	0	0	0	1	49	0	0	50	1	0	0	0	1	0	101	1	0	102	153	0
17:15	0	0	0	0	0	1	90	0	0	91	0	0	0	0	0	0	57	1	0	58	149	0
17:30	0	0	0	0	0	1	113	0	0	114	0	0	0	0	0	0	95	0	0	95	209	0
17:45	0	0	0	0	0	0	81	0	0	81	2	0	1	0	3	0	156	1	0	157	241	0
Total	0	0	0	0	0	3	333	0	0	336	3	0	1	0	4	0	409	3	0	412	752	0
Grand Total	0	0	0	0	0	8	940	0	0	948	16	0	7	0	23	0	790	14	0	804	1775	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.8%	99.2%	0.0%	0.0%		69.6%	0.0%	30.4%	0.0%		0.0%	98.3%	1.7%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	53.0%	0.0%	0.0%	53.4%	0.9%	0.0%	0.4%	0.0%	1.3%	0.0%	44.5%	0.8%	0.0%	45.3%	100.0%	

AM PEAK HOUR	Southbound					Grant Line Road Westbound					Stoneridge Drive Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	0	51	0	0	51	2	0	0	0	2	0	29	1	0	30	83
08:15	0	0	0	0	0	0	71	0	0	71	3	0	0	0	3	0	21	1	0	22	96
08:30	0	0	0	0	0	0	83	0	0	83	0	0	1	0	1	0	24	0	0	24	108
08:45	0	0	0	0	0	0	84	0	0	84	0	0	0	0	0	0	23	0	0	23	107
Total Volume	0	0	0	0	0	0	289	0	0	289	5	0	1	0	6	0	97	2	0	99	394
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		83.3%	0.0%	16.7%	0.0%		0.0%	98.0%	2.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.860	.000	.000	.860	.417	.000	.250	.000	.500	.000	.836	.500	.000	.825	.912

PM PEAK HOUR	Southbound					Grant Line Road Westbound					Stoneridge Drive Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	1	49	0	0	50	1	0	0	0	1	0	101	1	0	102	153
17:15	0	0	0	0	0	1	90	0	0	91	0	0	0	0	0	0	57	1	0	58	149
17:30	0	0	0	0	0	1	113	0	0	114	0	0	0	0	0	0	95	0	0	95	209
17:45	0	0	0	0	0	0	81	0	0	81	2	0	1	0	3	0	156	1	0	157	241
Total Volume	0	0	0	0	0	3	333	0	0	336	3	0	1	0	4	0	409	3	0	412	752
% App Total	0.0%	0.0%	0.0%	0.0%		0.9%	99.1%	0.0%	0.0%		75.0%	0.0%	25.0%	0.0%		0.0%	99.3%	0.7%	0.0%		
PHF	.000	.000	.000	.000	.000	.750	.737	.000	.000	.737	.375	.000	.250	.000	.333	.000	.655	.750	.000	.656	.780

ALL TRAFFIC DATA

San Joaquin County
(916) 771-8700
orders@atdtraffic.com

All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

File Name : 13-7686-006 Berry Avenue-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Berry Avenue Southbound					Grant Line Road Westbound					Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	2	0	1	0	3	0	42	0	0	42	0	0	0	0	0	0	18	0	0	18	63	0
07:15	4	0	2	0	6	0	44	1	0	45	0	0	0	0	0	2	22	0	0	24	75	0
07:30	1	0	0	0	1	0	73	2	0	75	0	0	0	0	0	0	21	0	0	21	97	0
07:45	2	0	1	0	3	0	63	0	0	63	0	0	0	0	0	1	21	0	0	22	88	0
Total	9	0	4	0	13	0	222	3	0	225	0	0	0	0	0	3	82	0	0	85	323	0
08:00	1	0	2	0	3	0	51	0	0	51	0	0	0	0	0	0	29	0	0	29	83	0
08:15	1	0	0	0	1	0	72	0	0	72	0	0	0	0	0	2	22	0	0	24	97	0
08:30	5	0	1	0	6	0	78	2	0	80	0	0	0	0	0	2	21	0	0	23	109	0
08:45	1	0	1	0	2	0	86	1	0	87	0	0	0	0	0	1	19	0	0	20	109	0
Total	8	0	4	0	12	0	287	3	0	290	0	0	0	0	0	5	91	0	0	96	398	0
16:00	3	0	2	0	5	0	24	1	0	25	0	0	0	0	0	1	58	0	0	59	89	0
16:15	0	0	1	0	1	0	23	1	0	24	0	0	0	0	0	1	29	0	0	30	55	0
16:30	6	0	1	0	7	0	19	3	0	22	0	0	0	0	0	2	63	0	0	65	94	0
16:45	5	0	1	0	6	0	36	1	0	37	0	0	0	0	0	1	38	0	0	39	82	0
Total	14	0	5	0	19	0	102	6	0	108	0	0	0	0	0	5	188	0	0	193	320	0
17:00	1	0	0	0	1	0	50	2	0	52	0	0	0	0	0	2	99	0	0	101	154	0
17:15	1	0	3	0	4	0	79	3	0	82	0	0	0	0	0	6	65	0	0	71	157	0
17:30	2	0	1	0	3	0	115	2	0	117	0	0	0	0	0	3	86	0	0	89	209	0
17:45	2	0	0	0	2	0	84	1	0	85	0	0	0	0	0	0	162	0	0	162	249	0
Total	6	0	4	0	10	0	328	8	0	336	0	0	0	0	0	11	412	0	0	423	769	0
Grand Total	37	0	17	0	54	0	939	20	0	959	0	0	0	0	0	24	773	0	0	797	1810	0
Apprch %	68.5%	0.0%	31.5%	0.0%		0.0%	97.9%	2.1%	0.0%		0.0%	0.0%	0.0%	0.0%		3.0%	97.0%	0.0%	0.0%			
Total %	2.0%	0.0%	0.9%	0.0%	3.0%	0.0%	51.9%	1.1%	0.0%	53.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	42.7%	0.0%	0.0%	44.0%	100.0%	

AM PEAK HOUR	Berry Avenue Southbound					Grant Line Road Westbound					Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	1	0	2	0	3	0	51	0	0	51	0	0	0	0	0	0	29	0	0	29	83
08:15	1	0	0	0	1	0	72	0	0	72	0	0	0	0	0	2	22	0	0	24	97
08:30	5	0	1	0	6	0	78	2	0	80	0	0	0	0	0	2	21	0	0	23	109
08:45	1	0	1	0	2	0	86	1	0	87	0	0	0	0	0	1	19	0	0	20	109
Total Volume	8	0	4	0	12	0	287	3	0	290	0	0	0	0	0	5	91	0	0	96	398
% App Total	66.7%	0.0%	33.3%	0.0%		0.0%	99.0%	1.0%	0.0%		0.0%	0.0%	0.0%	0.0%		5.2%	94.8%	0.0%	0.0%		
PHF	.400	.000	.500	.000	.500	.000	.834	.375	.000	.833	.000	.000	.000	.000	.000	.625	.784	.000	.000	.828	.913

PM PEAK HOUR	Berry Avenue Southbound					Grant Line Road Westbound					Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	0	0	0	1	0	50	2	0	52	0	0	0	0	0	2	99	0	0	101	154
17:15	1	0	3	0	4	0	79	3	0	82	0	0	0	0	0	6	65	0	0	71	157
17:30	2	0	1	0	3	0	115	2	0	117	0	0	0	0	0	3	86	0	0	89	209
17:45	2	0	0	0	2	0	84	1	0	85	0	0	0	0	0	0	162	0	0	162	249
Total Volume	6	0	4	0	10	0	328	8	0	336	0	0	0	0	0	11	412	0	0	423	769
% App Total	60.0%	0.0%	40.0%	0.0%		0.0%	97.6%	2.4%	0.0%		0.0%	0.0%	0.0%	0.0%		2.6%	97.4%	0.0%	0.0%		
PHF	.750	.000	.333	.000	.625	.000	.713	.667	.000	.718	.000	.000	.000	.000	.000	.458	.636	.000	.000	.653	.772

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-005 Bird Road-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Southbound					Grant Line Road Westbound					Bird Road Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	39	0	0	39	7	0	2	0	9	0	19	1	0	20	68	0
07:15	0	0	0	0	0	2	45	0	0	47	5	0	2	0	7	0	19	5	0	24	78	0
07:30	0	0	0	0	0	1	75	0	0	76	12	0	0	0	12	0	23	1	0	24	112	0
07:45	0	0	0	0	0	1	62	0	0	63	14	0	3	0	17	0	20	3	0	23	103	0
Total	0	0	0	0	0	4	221	0	0	225	38	0	7	0	45	0	81	10	0	91	361	0
08:00	0	0	0	0	0	0	57	0	0	57	14	0	1	0	15	0	32	6	0	38	110	0
08:15	0	0	0	0	0	0	72	0	0	72	11	0	1	0	12	0	20	4	0	24	108	0
08:30	0	0	0	0	0	0	82	0	0	82	9	0	2	0	11	0	22	5	0	27	120	0
08:45	0	0	0	0	0	1	83	0	0	84	12	0	1	0	13	0	21	5	0	26	123	0
Total	0	0	0	0	0	1	294	0	0	295	46	0	5	0	51	0	95	20	0	115	461	0
16:00	0	0	0	0	0	0	27	0	0	27	6	0	0	0	6	0	63	4	0	67	100	0
16:15	0	0	0	0	0	0	24	0	0	24	5	0	1	0	6	0	32	13	0	45	75	0
16:30	0	0	0	0	0	2	16	0	0	18	9	0	1	0	10	0	67	11	0	78	106	0
16:45	0	0	0	0	0	0	40	0	0	40	8	0	0	0	8	0	35	7	0	42	90	0
Total	0	0	0	0	0	2	107	0	0	109	28	0	2	0	30	0	197	35	0	232	371	0
17:00	0	0	0	0	0	1	47	0	0	48	6	0	0	0	6	0	109	12	0	121	175	0
17:15	0	0	0	0	0	1	88	0	0	89	11	0	1	0	12	0	59	7	0	66	167	0
17:30	0	0	0	0	0	1	111	0	0	112	5	0	0	0	5	0	100	7	0	107	224	0
17:45	0	0	0	0	0	1	80	0	0	81	4	0	1	0	5	0	162	20	0	182	268	0
Total	0	0	0	0	0	4	326	0	0	330	26	0	2	0	28	0	430	46	0	476	834	0
Grand Total	0	0	0	0	0	11	948	0	0	959	138	0	16	0	154	0	803	111	0	914	2027	0
Apprch %	0.0%	0.0%	0.0%	0.0%		1.1%	98.9%	0.0%	0.0%		89.6%	0.0%	10.4%	0.0%		0.0%	87.9%	12.1%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	46.8%	0.0%	0.0%	47.3%	6.8%	0.0%	0.8%	0.0%	7.6%	0.0%	39.6%	5.5%	0.0%	45.1%	100.0%	

AM PEAK HOUR	Southbound					Grant Line Road Westbound					Bird Road Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	0	57	0	0	57	14	0	1	0	15	0	32	6	0	38	110
08:15	0	0	0	0	0	0	72	0	0	72	11	0	1	0	12	0	20	4	0	24	108
08:30	0	0	0	0	0	0	82	0	0	82	9	0	2	0	11	0	22	5	0	27	120
08:45	0	0	0	0	0	1	83	0	0	84	12	0	1	0	13	0	21	5	0	26	123
Total Volume	0	0	0	0	0	1	294	0	0	295	46	0	5	0	51	0	95	20	0	115	461
% App Total	0.0%	0.0%	0.0%	0.0%		0.3%	99.7%	0.0%	0.0%		90.2%	0.0%	9.8%	0.0%		0.0%	82.6%	17.4%	0.0%		
PHF	.000	.000	.000	.000	.000	.250	.886	.000	.000	.878	.821	.000	.625	.000	.850	.000	.742	.833	.000	.757	.937

PM PEAK HOUR	Southbound					Grant Line Road Westbound					Bird Road Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	1	47	0	0	48	6	0	0	0	6	0	109	12	0	121	175
17:15	0	0	0	0	0	1	88	0	0	89	11	0	1	0	12	0	59	7	0	66	167
17:30	0	0	0	0	0	1	111	0	0	112	5	0	0	0	5	0	100	7	0	107	224
17:45	0	0	0	0	0	1	80	0	0	81	4	0	1	0	5	0	162	20	0	182	268
Total Volume	0	0	0	0	0	4	326	0	0	330	26	0	2	0	28	0	430	46	0	476	834
% App Total	0.0%	0.0%	0.0%	0.0%		1.2%	98.8%	0.0%	0.0%		92.9%	0.0%	7.1%	0.0%		0.0%	90.3%	9.7%	0.0%		
PHF	.000	.000	.000	.000	.000	1.000	.734	.000	.000	.737	.591	.000	.500	.000	.583	.000	.664	.575	.000	.654	.778

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-004 G Street-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Southbound					Grant Line Road Westbound					G Street Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	1	50	0	0	51	0	0	2	0	2	0	19	0	0	19	72	0
07:15	0	0	0	0	0	2	44	0	0	46	0	0	2	0	2	0	22	0	0	22	70	0
07:30	0	0	0	0	0	5	78	0	0	83	0	0	1	0	1	0	23	0	0	23	107	0
07:45	0	0	0	0	0	4	78	0	0	82	0	0	3	0	3	0	19	0	0	19	104	0
Total	0	0	0	0	0	12	250	0	0	262	0	0	8	0	8	0	83	0	0	83	353	0
08:00	0	0	0	0	0	1	67	0	0	68	0	0	1	0	1	0	37	1	0	38	107	0
08:15	0	0	0	0	0	1	80	0	0	81	0	0	2	0	2	0	24	1	0	25	108	0
08:30	0	0	0	0	0	2	86	0	0	88	2	0	3	0	5	0	24	1	0	25	118	0
08:45	0	0	0	0	0	1	96	0	0	97	2	0	2	0	4	0	24	1	0	25	126	0
Total	0	0	0	0	0	5	329	0	0	334	4	0	8	0	12	0	109	4	0	113	459	0
16:00	0	0	0	0	0	4	29	0	0	33	1	0	4	0	5	0	64	0	0	64	102	0
16:15	0	0	0	0	0	3	25	0	0	28	1	0	5	0	6	0	40	2	0	42	76	0
16:30	0	0	0	0	0	0	26	0	0	26	2	0	8	0	10	0	70	2	0	72	108	0
16:45	0	0	0	0	0	2	42	0	0	44	0	0	4	0	4	0	37	2	0	39	87	0
Total	0	0	0	0	0	9	122	0	0	131	4	0	21	0	25	0	211	6	0	217	373	0
17:00	0	0	0	0	0	4	50	0	0	54	2	0	4	0	6	0	117	3	0	120	180	0
17:15	0	0	0	0	0	5	88	0	0	93	2	0	8	0	10	0	62	1	0	63	166	0
17:30	0	0	0	0	0	1	116	0	0	117	2	0	3	0	5	0	101	1	0	102	224	0
17:45	0	0	0	0	0	2	86	0	0	88	0	0	4	0	4	0	176	0	0	176	268	0
Total	0	0	0	0	0	12	340	0	0	352	6	0	19	0	25	0	456	5	0	461	838	0
Grand Total	0	0	0	0	0	38	1041	0	0	1079	14	0	56	0	70	0	859	15	0	874	2023	0
Apprch %	0.0%	0.0%	0.0%	0.0%		3.5%	96.5%	0.0%	0.0%		20.0%	0.0%	80.0%	0.0%		0.0%	98.3%	1.7%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	51.5%	0.0%	0.0%	53.3%	0.7%	0.0%	2.8%	0.0%	3.5%	0.0%	42.5%	0.7%	0.0%	43.2%	100.0%	

AM PEAK HOUR	Southbound					Grant Line Road Westbound					G Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	1	67	0	0	68	0	0	1	0	1	0	37	1	0	38	107
08:15	0	0	0	0	0	1	80	0	0	81	0	0	2	0	2	0	24	1	0	25	108
08:30	0	0	0	0	0	2	86	0	0	88	2	0	3	0	5	0	24	1	0	25	118
08:45	0	0	0	0	0	1	96	0	0	97	2	0	2	0	4	0	24	1	0	25	126
Total Volume	0	0	0	0	0	5	329	0	0	334	4	0	8	0	12	0	109	4	0	113	459
% App Total	0.0%	0.0%	0.0%	0.0%		1.5%	98.5%	0.0%	0.0%		33.3%	0.0%	66.7%	0.0%		0.0%	96.5%	3.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.625	.857	.000	.000	.861	.500	.000	.667	.000	.600	.000	.736	1.000	.000	.743	.911

PM PEAK HOUR	Southbound					Grant Line Road Westbound					G Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	4	50	0	0	54	2	0	4	0	6	0	117	3	0	120	180
17:15	0	0	0	0	0	5	88	0	0	93	2	0	8	0	10	0	62	1	0	63	166
17:30	0	0	0	0	0	1	116	0	0	117	2	0	3	0	5	0	101	1	0	102	224
17:45	0	0	0	0	0	2	86	0	0	88	0	0	4	0	4	0	176	0	0	176	268
Total Volume	0	0	0	0	0	12	340	0	0	352	6	0	19	0	25	0	456	5	0	461	838
% App Total	0.0%	0.0%	0.0%	0.0%		3.4%	96.6%	0.0%	0.0%		24.0%	0.0%	76.0%	0.0%		0.0%	98.9%	1.1%	0.0%		
PHF	.000	.000	.000	.000	.000	.600	.733	.000	.000	.752	.750	.000	.594	.000	.625	.000	.648	.417	.000	.655	.782

ALL TRAFFIC DATA

San Joaquin County
(916) 771-8700
orders@atdtraffic.com

All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

File Name : 13-7686-003 7th Street-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	El Rancho Road Southbound					Grant Line Road Westbound					7th Street Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	2	2	6	0	10	0	42	7	0	49	0	0	0	0	0	2	17	2	0	21	80	0
07:15	1	2	5	0	8	0	43	2	0	45	0	1	0	0	1	6	21	0	0	27	81	0
07:30	4	3	8	0	15	0	69	6	0	75	2	4	0	0	6	5	19	1	0	25	121	0
07:45	9	4	18	0	31	1	69	12	0	82	0	11	0	0	11	15	11	1	0	27	151	0
Total	16	11	37	0	64	1	223	27	0	251	2	16	0	0	18	28	68	4	0	100	433	0
08:00	24	4	31	0	59	0	40	24	0	64	3	14	0	0	17	31	16	1	0	48	188	0
08:15	12	11	32	0	55	2	67	13	0	82	0	10	0	0	10	16	13	1	0	30	177	0
08:30	9	2	10	0	21	0	81	4	0	85	1	1	0	0	2	4	16	0	0	20	128	0
08:45	4	3	3	0	10	1	93	6	0	100	3	0	0	0	3	3	21	0	0	24	137	0
Total	49	20	76	0	145	3	281	47	0	331	7	25	0	0	32	54	66	2	0	122	630	0
16:00	6	6	6	0	18	1	25	2	0	28	0	4	0	0	4	7	56	3	0	66	116	0
16:15	2	3	6	0	11	0	24	4	0	28	1	0	0	0	1	12	41	1	0	54	94	0
16:30	11	4	25	0	40	0	28	3	0	31	0	2	0	0	2	9	61	2	0	72	145	0
16:45	6	4	8	0	18	0	38	2	0	40	2	1	0	0	3	4	33	2	0	39	100	0
Total	25	17	45	0	87	1	115	11	0	127	3	7	0	0	10	32	191	8	0	231	455	0
17:00	10	2	7	0	19	0	48	5	0	53	2	0	0	0	2	9	111	2	0	122	196	0
17:15	3	0	3	0	6	0	83	6	0	89	2	2	3	0	7	6	58	2	0	66	168	0
17:30	2	3	5	0	10	0	109	6	0	115	2	0	0	0	2	7	104	2	0	113	240	0
17:45	6	6	21	0	33	0	92	1	0	93	1	6	1	0	8	6	172	6	0	184	318	0
Total	21	11	36	0	68	0	332	18	0	350	7	8	4	0	19	28	445	12	0	485	922	0
Grand Total	111	59	194	0	364	5	951	103	0	1059	19	56	4	0	79	142	770	26	0	938	2440	0
Apprch %	30.5%	16.2%	53.3%	0.0%		0.5%	89.8%	9.7%	0.0%		24.1%	70.9%	5.1%	0.0%		15.1%	82.1%	2.8%	0.0%			
Total %	4.5%	2.4%	8.0%	0.0%	14.9%	0.2%	39.0%	4.2%	0.0%	43.4%	0.8%	2.3%	0.2%	0.0%	3.2%	5.8%	31.6%	1.1%	0.0%	38.4%	100.0%	

AM PEAK HOUR	El Rancho Road Southbound					Grant Line Road Westbound					7th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	9	4	18	0	31	1	69	12	0	82	0	11	0	0	11	15	11	1	0	27	151
08:00	24	4	31	0	59	0	40	24	0	64	3	14	0	0	17	31	16	1	0	48	188
08:15	12	11	32	0	55	2	67	13	0	82	0	10	0	0	10	16	13	1	0	30	177
08:30	9	2	10	0	21	0	81	4	0	85	1	1	0	0	2	4	16	0	0	20	128
Total Volume	54	21	91	0	166	3	257	53	0	313	4	36	0	0	40	66	56	3	0	125	644
% App Total	32.5%	12.7%	54.8%	0.0%		1.0%	82.1%	16.9%	0.0%		10.0%	90.0%	0.0%	0.0%		52.8%	44.8%	2.4%	0.0%		
PHF	.563	.477	.711	.000	.703	.375	.793	.552	.000	.921	.333	.643	.000	.000	.588	.532	.875	.750	.000	.651	.856

PM PEAK HOUR	El Rancho Road Southbound					Grant Line Road Westbound					7th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	10	2	7	0	19	0	48	5	0	53	2	0	0	0	2	9	111	2	0	122	196
17:15	3	0	3	0	6	0	83	6	0	89	2	2	3	0	7	6	58	2	0	66	168
17:30	2	3	5	0	10	0	109	6	0	115	2	0	0	0	2	7	104	2	0	113	240
17:45	6	6	21	0	33	0	92	1	0	93	1	6	1	0	8	6	172	6	0	184	318
Total Volume	21	11	36	0	68	0	332	18	0	350	7	8	4	0	19	28	445	12	0	485	922
% App Total	30.9%	16.2%	52.9%	0.0%		0.0%	94.9%	5.1%	0.0%		36.8%	42.1%	21.1%	0.0%		5.8%	91.8%	2.5%	0.0%		
PHF	.525	.458	.429	.000	.515	.000	.761	.750	.000	.761	.875	.333	.333	.000	.594	.778	.647	.500	.000	.659	.725

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-002 6th Street-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Southbound					Grant Line Road Westbound					6th Street Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	47	0	0	47	2	0	0	0	2	0	19	1	0	20	69	0
07:15	0	0	0	0	0	0	47	0	0	47	1	0	0	0	1	0	25	0	0	25	73	0
07:30	0	0	0	0	0	1	80	0	0	81	1	0	0	0	1	0	25	1	0	26	108	0
07:45	0	0	0	0	0	0	87	0	0	87	2	0	1	0	3	0	29	1	0	30	120	0
Total	0	0	0	0	0	1	261	0	0	262	6	0	1	0	7	0	98	3	0	101	370	0
08:00	0	0	0	0	0	1	78	0	0	79	1	0	1	0	2	0	42	2	0	44	125	0
08:15	0	0	0	0	0	0	97	0	0	97	0	0	1	0	1	0	30	1	0	31	129	0
08:30	0	0	0	0	0	0	91	0	0	91	2	0	1	0	3	0	19	0	0	19	113	0
08:45	0	0	0	0	0	0	99	0	0	99	0	0	0	0	0	0	23	1	0	24	123	0
Total	0	0	0	0	0	1	365	0	0	366	3	0	3	0	6	0	114	4	0	118	490	0
16:00	0	0	0	0	0	0	33	0	0	33	2	0	0	0	2	0	65	1	0	66	101	0
16:15	0	0	0	0	0	0	28	0	0	28	0	0	1	0	1	0	49	0	0	49	78	0
16:30	0	0	0	0	0	1	54	0	0	55	0	0	0	0	0	0	70	1	0	71	126	0
16:45	0	0	0	0	0	1	47	0	0	48	2	0	0	0	2	0	41	0	0	41	91	0
Total	0	0	0	0	0	2	162	0	0	164	4	0	1	0	5	0	225	2	0	227	396	0
17:00	0	0	0	0	0	1	56	0	0	57	3	0	0	0	3	0	119	1	0	120	180	0
17:15	0	0	0	0	0	0	90	0	0	90	0	0	1	0	1	0	63	0	0	63	154	0
17:30	0	0	0	0	0	0	118	0	0	118	2	0	0	0	2	0	120	3	0	123	243	0
17:45	0	0	0	0	0	0	107	0	0	107	2	0	1	0	3	0	176	1	0	177	287	0
Total	0	0	0	0	0	1	371	0	0	372	7	0	2	0	9	0	478	5	0	483	864	0
Grand Total	0	0	0	0	0	5	1159	0	0	1164	20	0	7	0	27	0	915	14	0	929	2120	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.4%	99.6%	0.0%	0.0%		74.1%	0.0%	25.9%	0.0%		0.0%	98.5%	1.5%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	54.7%	0.0%	0.0%	54.9%	0.9%	0.0%	0.3%	0.0%	1.3%	0.0%	43.2%	0.7%	0.0%	43.8%	100.0%	

AM PEAK HOUR	Southbound					Grant Line Road Westbound					6th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	1	78	0	0	79	1	0	1	0	2	0	42	2	0	44	125
08:15	0	0	0	0	0	0	97	0	0	97	0	0	1	0	1	0	30	1	0	31	129
08:30	0	0	0	0	0	0	91	0	0	91	2	0	1	0	3	0	19	0	0	19	113
08:45	0	0	0	0	0	0	99	0	0	99	0	0	0	0	0	0	23	1	0	24	123
Total Volume	0	0	0	0	0	1	365	0	0	366	3	0	3	0	6	0	114	4	0	118	490
% App Total	0.0%	0.0%	0.0%	0.0%		0.3%	99.7%	0.0%	0.0%		50.0%	0.0%	50.0%	0.0%		0.0%	96.6%	3.4%	0.0%		
PHF	.000	.000	.000	.000	.000	.250	.922	.000	.000	.924	.375	.000	.750	.000	.500	.000	.679	.500	.000	.670	.950

PM PEAK HOUR	Southbound					Grant Line Road Westbound					6th Street Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	1	56	0	0	57	3	0	0	0	3	0	119	1	0	120	180
17:15	0	0	0	0	0	0	90	0	0	90	0	0	1	0	1	0	63	0	0	63	154
17:30	0	0	0	0	0	0	118	0	0	118	2	0	0	0	2	0	120	3	0	123	243
17:45	0	0	0	0	0	0	107	0	0	107	2	0	1	0	3	0	176	1	0	177	287
Total Volume	0	0	0	0	0	1	371	0	0	372	7	0	2	0	9	0	478	5	0	483	864
% App Total	0.0%	0.0%	0.0%	0.0%		0.3%	99.7%	0.0%	0.0%		77.8%	0.0%	22.2%	0.0%		0.0%	99.0%	1.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.250	.786	.000	.000	.788	.583	.000	.500	.000	.750	.000	.679	.417	.000	.682	.753

ALL TRAFFIC DATA

San Joaquin County
All Vehicles on Unshifted
Heavy Trucks on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7686-001 Banta Road-Grant Line Road.ppd
Date : 11/19/2013

Unshifted Count = All Vehicles

	Southbound					Grant Line Road Westbound					Banta Road Northbound					Grant Line Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	5	44	0	0	49	2	0	1	0	3	0	20	1	0	21	73	0
07:15	0	0	0	0	0	3	48	0	0	51	3	0	1	0	4	0	29	4	0	33	88	0
07:30	0	0	0	0	0	6	69	0	0	75	7	0	4	0	11	0	22	1	0	23	109	0
07:45	0	0	0	0	0	3	92	0	0	95	3	0	4	0	7	0	23	3	0	26	128	0
Total	0	0	0	0	0	17	253	0	0	270	15	0	10	0	25	0	94	9	0	103	398	0
08:00	0	0	0	0	0	5	67	0	0	72	0	0	5	0	5	0	42	4	0	46	123	0
08:15	0	0	0	0	0	5	99	0	0	104	5	0	9	0	14	0	21	1	0	22	140	0
08:30	0	0	0	0	0	6	85	0	0	91	6	0	3	0	9	0	16	3	0	19	119	0
08:45	0	0	0	0	0	1	102	0	0	103	4	0	2	0	6	0	23	3	0	26	135	0
Total	0	0	0	0	0	17	353	0	0	370	15	0	19	0	34	0	102	11	0	113	517	0
16:00	0	0	0	0	0	1	36	0	0	37	5	0	5	0	10	0	61	10	0	71	118	0
16:15	0	0	0	0	0	1	25	0	0	26	5	0	1	0	6	0	50	7	0	57	89	0
16:30	0	0	0	0	0	6	49	0	0	55	3	0	4	0	7	0	69	7	0	76	138	0
16:45	0	0	0	0	0	1	50	0	0	51	4	0	1	0	5	0	39	5	0	44	100	0
Total	0	0	0	0	0	9	160	0	0	169	17	0	11	0	28	0	219	29	0	248	445	0
17:00	0	0	0	0	0	5	56	0	0	61	2	0	5	0	7	0	115	8	0	123	191	0
17:15	0	0	0	0	0	2	81	0	0	83	5	0	2	0	7	0	64	4	0	68	158	0
17:30	0	0	0	0	0	5	113	0	0	118	5	0	3	0	8	0	117	8	0	125	251	0
17:45	0	0	0	0	0	6	114	0	0	120	3	0	3	0	6	0	171	7	0	178	304	0
Total	0	0	0	0	0	18	364	0	0	382	15	0	13	0	28	0	467	27	0	494	904	0
Grand Total	0	0	0	0	0	61	1130	0	0	1191	62	0	53	0	115	0	882	76	0	958	2264	0
Apprch %	0.0%	0.0%	0.0%	0.0%		5.1%	94.9%	0.0%	0.0%		53.9%	0.0%	46.1%	0.0%		0.0%	92.1%	7.9%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	49.9%	0.0%	0.0%	52.6%	2.7%	0.0%	2.3%	0.0%	5.1%	0.0%	39.0%	3.4%	0.0%	42.3%	100.0%	

AM PEAK HOUR	Southbound					Grant Line Road Westbound					Banta Road Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	5	67	0	0	72	0	0	5	0	5	0	42	4	0	46	123
08:15	0	0	0	0	0	5	99	0	0	104	5	0	9	0	14	0	21	1	0	22	140
08:30	0	0	0	0	0	6	85	0	0	91	6	0	3	0	9	0	16	3	0	19	119
08:45	0	0	0	0	0	1	102	0	0	103	4	0	2	0	6	0	23	3	0	26	135
Total Volume	0	0	0	0	0	17	353	0	0	370	15	0	19	0	34	0	102	11	0	113	517
% App Total	0.0%	0.0%	0.0%	0.0%		4.6%	95.4%	0.0%	0.0%		44.1%	0.0%	55.9%	0.0%		0.0%	90.3%	9.7%	0.0%		
PHF	.000	.000	.000	.000	.000	.708	.865	.000	.000	.889	.625	.000	.528	.000	.607	.000	.607	.688	.000	.614	.923

PM PEAK HOUR	Southbound					Grant Line Road Westbound					Banta Road Northbound					Grant Line Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	5	56	0	0	61	2	0	5	0	7	0	115	8	0	123	191
17:15	0	0	0	0	0	2	81	0	0	83	5	0	2	0	7	0	64	4	0	68	158
17:30	0	0	0	0	0	5	113	0	0	118	5	0	3	0	8	0	117	8	0	125	251
17:45	0	0	0	0	0	6	114	0	0	120	3	0	3	0	6	0	171	7	0	178	304
Total Volume	0	0	0	0	0	18	364	0	0	382	15	0	13	0	28	0	467	27	0	494	904
% App Total	0.0%	0.0%	0.0%	0.0%		4.7%	95.3%	0.0%	0.0%		53.6%	0.0%	46.4%	0.0%		0.0%	94.5%	5.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.750	.798	.000	.000	.796	.750	.000	.650	.000	.875	.000	.683	.844	.000	.694	.743

Volumes for: Thursday, November 21, 2013 City: San Joaquin County Project #: 13-7687-002
Location: Kasson Road just east of 11th Street

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	25			0	17				
12:15	1	28			6	22				
12:30	2	44			2	18				
12:45	3	26	12	123	2	9	10	66	22	189
1:00	3	12			0	8				
1:15	3	29			3	9				
1:30	3	19			2	14				
1:45	3	22	12	82	0	17	5	48	17	130
2:00	1	26			2	24				
2:15	0	19			4	16				
2:30	10	33			5	20				
2:45	8	23	19	101	6	13	17	73	36	174
3:00	19	27			1	14				
3:15	14	25			5	18				
3:30	4	27			10	23				
3:45	3	20	40	99	3	18	19	73	59	172
4:00	3	19			8	26				
4:15	4	25			9	15				
4:30	5	28			9	23				
4:45	7	21	19	93	21	20	47	84	66	177
5:00	0	37			7	27				
5:15	15	27			7	21				
5:30	13	29			11	22				
5:45	6	26	34	119	23	12	48	82	82	201
6:00	8	17			14	16				
6:15	13	23			22	14				
6:30	16	13			26	9				
6:45	21	13	58	66	20	8	82	47	140	113
7:00	16	11			18	15				
7:15	18	11			21	22				
7:30	17	5			24	20				
7:45	19	9	70	36	19	9	82	66	152	102
8:00	20	11			24	4				
8:15	14	10			24	12				
8:30	15	10			27	4				
8:45	14	5	63	36	18	5	93	25	156	61
9:00	14	9			20	4				
9:15	14	14			13	9				
9:30	20	10			18	6				
9:45	11	10	59	43	19	6	70	25	129	68
10:00	11	2			15	10				
10:15	13	11			10	2				
10:30	19	12			13	6				
10:45	14	7	57	32	18	2	56	20	113	52
11:00	10	4			19	2				
11:15	19	9			9	4				
11:30	20	5			18	3				
11:45	22	2	71	20	19	3	65	12	136	32
Total	514	850	514	850	594	621	594	621	1108	1471
Combined Total	1364		1364		1215		1215		2579	
AM Peak	11:45 AM				7:45 AM					
Vol.	119				94					
P.H.F.	0.676				0.870					
PM Peak		12:00 PM				4:30 PM				
Vol.		123				91				
P.H.F.		0.699				0.843				
Percentage	37.7%	62.3%			48.9%	51.1%				

Volumes for: Wednesday, November 20, 2013 City: San Joaquin County Project #: 13-7687-002
Location: Kasson Road just east of 11th Street

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	10			1	17				
12:15	3	16			2	20				
12:30	12	23			1	15				
12:45	3	19	21	68	0	10	4	62	25	130
1:00	1	15			4	23				
1:15	1	34			2	14				
1:30	3	22			2	15				
1:45	3	16	8	87	2	24	10	76	18	163
2:00	2	28			1	27				
2:15	2	13			3	22				
2:30	4	30			4	13				
2:45	6	26	14	97	3	12	11	74	25	171
3:00	14	20			6	16				
3:15	14	22			4	19				
3:30	4	32			10	14				
3:45	3	26	35	100	3	13	23	62	58	162
4:00	3	29			6	15				
4:15	3	31			9	17				
4:30	10	33			15	12				
4:45	8	22	24	115	19	18	49	62	73	177
5:00	10	29			7	9				
5:15	10	21			4	24				
5:30	10	35			12	27				
5:45	13	32	43	117	22	29	45	89	88	206
6:00	6	24			16	25				
6:15	9	41			16	13				
6:30	12	17			23	12				
6:45	20	6	47	88	15	13	70	63	117	151
7:00	18	14			15	5				
7:15	13	13			22	7				
7:30	17	7			28	5				
7:45	18	13	66	47	22	3	87	20	153	67
8:00	19	9			22	7				
8:15	17	12			27	8				
8:30	10	11			27	7				
8:45	16	10	62	42	28	7	104	29	166	71
9:00	15	8			30	7				
9:15	12	7			15	4				
9:30	14	6			15	10				
9:45	16	7	57	28	17	3	77	24	134	52
10:00	9	5			11	9				
10:15	13	5			16	5				
10:30	18	2			13	2				
10:45	13	5	53	17	20	2	60	18	113	35
11:00	16	5			21	1				
11:15	18	2			18	2				
11:30	16	7			17	3				
11:45	20	9	70	23	7	5	63	11	133	34
Total	500	829	500	829	603	590	603	590	1103	1419
Combined Total	1329		1329		1193		1193		2522	
AM Peak	7:30 AM				8:15 AM					
Vol.	71				112					
P.H.F.	0.934				0.933					
PM Peak		5:30 PM				5:15 PM				
Vol.		132				105				
P.H.F.		0.805				0.905				
Percentage	37.6%	62.4%			50.5%	49.5%				

Volumes for: Tuesday, November 19, 2013 City: San Joaquin County Project #: 13-7687-002
Location: Kasson Road just east of 11th Street

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	15			5	20				
12:15	2	22			1	14				
12:30	2	18			3	12				
12:45	2	18	8	73	2	17	11	63	19	136
1:00	1	25			4	14				
1:15	2	18			1	16				
1:30	0	18			0	19				
1:45	2	21	5	82	3	13	8	62	13	144
2:00	3	20			0	21				
2:15	2	24			2	16				
2:30	10	24			2	15				
2:45	2	31	17	99	4	16	8	68	25	167
3:00	7	25			7	19				
3:15	15	21			9	20				
3:30	6	40			10	26				
3:45	2	24	30	110	8	27	34	92	64	202
4:00	4	30			10	19				
4:15	3	27			10	24				
4:30	4	30			17	16				
4:45	6	28	17	115	15	25	52	84	69	199
5:00	9	32			6	23				
5:15	5	32			15	17				
5:30	6	28			16	17				
5:45	12	45	32	137	19	28	56	85	88	222
6:00	8	37			11	23				
6:15	8	34			20	8				
6:30	7	16			22	16				
6:45	15	20	38	107	12	9	65	56	103	163
7:00	13	9			18	10				
7:15	16	10			27	7				
7:30	19	9			24	6				
7:45	15	8	63	36	28	7	97	30	160	66
8:00	16	6			27	4				
8:15	19	13			24	6				
8:30	15	10			37	4				
8:45	14	9	64	38	20	5	108	19	172	57
9:00	10	6			16	6				
9:15	13	10			19	6				
9:30	15	6			18	5				
9:45	15	7	53	29	19	4	72	21	125	50
10:00	14	5			11	9				
10:15	17	2			14	4				
10:30	16	4			10	2				
10:45	17	6	64	17	10	3	45	18	109	35
11:00	21	6			19	3				
11:15	12	1			19	7				
11:30	17	3			18	2				
11:45	18	4	68	14	9	2	65	14	133	28
Total	459	857	459	857	621	612	621	612	1080	1469
Combined Total	1316		1316		1233		1233		2549	
AM Peak	11:45 AM				7:45 AM					
Vol.	73				116					
P.H.F.	0.830				0.784					
PM Peak		5:30 PM				3:30 PM				
Vol.		144				96				
P.H.F.		0.800				0.889				
Percentage	34.9%	65.1%			50.4%	49.6%				

Volumes for: Thursday, November 21, 2013 City: San Joaquin County Project #: 13-7687-001
Location: Grant Line Road just west of Bird Road

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	11	84			6	83				
12:15	4	156			5	57				
12:30	12	117			4	44				
12:45	6	59	33	416	7	36	22	220	55	636
1:00	4	35			1	29				
1:15	5	57			7	31				
1:30	11	81			6	45				
1:45	13	39	33	212	3	37	17	142	50	354
2:00	10	64			6	34				
2:15	14	55			6	30				
2:30	97	117			3	54				
2:45	45	50	166	286	7	44	22	162	188	448
3:00	115	59			4	25				
3:15	56	65			4	42				
3:30	11	113			13	54				
3:45	2	48	184	285	30	33	51	154	235	439
4:00	6	50			20	28				
4:15	10	53			42	31				
4:30	5	62			72	32				
4:45	11	57	32	222	96	40	230	131	262	353
5:00	7	113			36	38				
5:15	18	73			53	38				
5:30	15	58			96	66				
5:45	6	51	46	295	71	37	256	179	302	474
6:00	17	31			37	52				
6:15	17	36			76	34				
6:30	29	22			99	17				
6:45	33	26	96	115	98	16	310	119	406	234
7:00	28	18			47	27				
7:15	37	32			44	96				
7:30	35	26			62	130				
7:45	30	17	130	93	87	53	240	306	370	399
8:00	32	21			72	12				
8:15	32	27			69	11				
8:30	30	23			75	10				
8:45	33	13	127	84	64	18	280	51	407	135
9:00	34	20			52	11				
9:15	30	14			48	16				
9:30	36	24			34	19				
9:45	28	10	128	68	35	14	169	60	297	128
10:00	27	17			30	10				
10:15	35	19			25	8				
10:30	25	20			37	13				
10:45	24	8	111	64	44	7	136	38	247	102
11:00	33	18			43	5				
11:15	26	29			29	6				
11:30	36	35			44	5				
11:45	26	8	121	90	72	3	188	19	309	109
Total	1207	2230	1207	2230	1921	1581	1921	1581	3128	3811
Combined Total	3437		3437		3502		3502		6939	
AM Peak	11:45 AM				6:15 AM					
Vol.	383				320					
P.H.F.	0.614				0.808					
PM Peak		12:00 PM				7:00 PM				
Vol.		416				306				
P.H.F.		0.667				0.588				
Percentage	35.1%	64.9%			54.9%	45.1%				

Volumes for: Wednesday, November 20, 2013 City: San Joaquin County Project #: 13-7687-001
Location: Grant Line Road just west of Bird Road

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	40			4	37				
12:15	20	24			5	35				
12:30	66	51			4	43				
12:45	11	51	98	166	0	42	13	157	111	323
1:00	3	44			7	24				
1:15	3	57			5	31				
1:30	4	82			6	43				
1:45	7	48	17	231	9	39	27	137	44	368
2:00	8	41			4	56				
2:15	10	40			9	50				
2:30	49	111			9	50				
2:45	42	62	109	254	6	45	28	201	137	455
3:00	51	69			9	36				
3:15	60	57			9	41				
3:30	15	96			16	49				
3:45	4	79	130	301	26	25	60	151	190	452
4:00	4	72			25	25				
4:15	3	52			37	33				
4:30	48	62			100	30				
4:45	47	53	102	239	94	33	256	121	358	360
5:00	25	112			32	53				
5:15	13	46			42	69				
5:30	22	122			77	143				
5:45	18	124	78	404	101	86	252	351	330	755
6:00	14	97			49	96				
6:15	15	148			64	46				
6:30	28	44			103	29				
6:45	27	16	84	305	78	25	294	196	378	501
7:00	24	34			39	14				
7:15	24	38			54	14				
7:30	22	16			68	9				
7:45	24	22	94	110	79	7	240	44	334	154
8:00	38	16			67	9				
8:15	37	20			72	7				
8:30	20	21			109	9				
8:45	20	17	115	74	99	19	347	44	462	118
9:00	27	25			96	16				
9:15	31	15			42	6				
9:30	26	13			41	20				
9:45	26	11	110	64	20	21	199	63	309	127
10:00	16	13			29	7				
10:15	18	9			30	11				
10:30	36	24			33	7				
10:45	28	14	98	60	39	9	131	34	229	94
11:00	34	12			36	6				
11:15	23	9			32	5				
11:30	24	36			30	5				
11:45	24	14	105	71	29	8	127	24	232	95
Total	1140	2279	1140	2279	1974	1523	1974	1523	3114	3802
Combined Total	3419		3419		3497		3497		6916	
AM Peak	2:30 AM				8:15 AM					
Vol.	202				376					
P.H.F.	0.842				0.862					
PM Peak		5:30 PM				5:15 PM				
Vol.		491				394				
P.H.F.		0.829				0.689				
Percentage	33.3%	66.7%			56.4%	43.6%				

Volumes for: Tuesday, November 19, 2013 City: San Joaquin County Project #: 13-7687-001
Location: Grant Line Road just west of Bird Road

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	34			6	43				
12:15	5	39			5	41				
12:30	7	51			3	29				
12:45	5	45	22	169	7	36	21	149	43	318
1:00	4	33			6	29				
1:15	6	30			3	34				
1:30	6	66			6	39				
1:45	4	47	20	176	14	44	29	146	49	322
2:00	8	50			2	40				
2:15	12	31			8	41				
2:30	37	111			5	54				
2:45	15	89	72	281	10	52	25	187	97	468
3:00	36	56			3	47				
3:15	86	55			8	61				
3:30	16	121			18	80				
3:45	6	66	144	298	29	41	58	229	202	527
4:00	7	62			20	34				
4:15	9	45			36	29				
4:30	33	72			100	26				
4:45	33	48	82	227	95	42	251	131	333	358
5:00	20	116			30	55				
5:15	9	72			46	90				
5:30	10	97			94	109				
5:45	21	181	60	466	81	97	251	351	311	817
6:00	18	139			39	87				
6:15	21	146			63	28				
6:30	17	42			122	18				
6:45	35	32	91	359	81	18	305	151	396	510
7:00	17	38			50	12				
7:15	25	21			48	12				
7:30	23	21			73	14				
7:45	23	8	88	88	89	16	260	54	348	142
8:00	38	20			65	6				
8:15	27	24			84	10				
8:30	26	17			86	7				
8:45	28	12	119	73	100	7	335	30	454	103
9:00	22	14			96	6				
9:15	27	10			74	12				
9:30	30	13			33	19				
9:45	15	6	94	43	42	5	245	42	339	85
10:00	25	14			31	9				
10:15	24	11			27	7				
10:30	28	12			27	8				
10:45	22	17	99	54	33	7	118	31	217	85
11:00	39	19			27	3				
11:15	23	8			33	6				
11:30	25	35			32	8				
11:45	31	1	118	63	41	2	133	19	251	82
Total	1009	2297	1009	2297	2031	1520	2031	1520	3040	3817
Combined Total	3306		3306		3551		3551		6857	
AM Peak	2:30 AM				8:15 AM					
Vol.	174				366					
P.H.F.	0.506				0.915					
PM Peak		5:30 PM				5:15 PM				
Vol.		563				383				
P.H.F.		0.778				0.878				
Percentage	30.5%	69.5%			57.2%	42.8%				

APPENDIX C:
EXISTING OPERATIONS ANALYSIS RESULTS

1: Banta Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	0.7	0.4	2.0	1.6	4.3	1.8	1.5
Travel Dist (mi)	48.1	5.4	4.3	102.1	3.1	5.5	168.5
Travel Time (hr)	1.1	0.1	0.1	2.6	0.1	0.2	4.2
Avg Speed (mph)	44	41	35	40	33	35	41
Vehicles Entered	103	12	15	358	12	21	521
Vehicles Exited	103	11	15	359	12	21	521
Hourly Exit Rate	103	11	15	359	12	21	521
Input Volume	108	11	17	362	15	20	532
% of Volume	95	102	90	99	81	105	98

2: 6th St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0		0.0	0.1	3.9	0.1
Total Del/Veh (s)	0.7	0.2		1.8	6.6	2.7	1.6
Travel Dist (mi)	33.9	1.2	0.0	36.8	0.2	0.3	72.3
Travel Time (hr)	0.8	0.0	0.0	1.4	0.0	0.0	2.2
Avg Speed (mph)	42	39	23	27	15	17	32
Vehicles Entered	123	4	0	383	2	4	516
Vehicles Exited	123	4	0	384	2	4	517
Hourly Exit Rate	123	4	0	384	2	4	517
Input Volume	127	4	1	386	3	3	524
% of Volume	97	94	0	100	67	133	99

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1
Total Del/Veh (s)	9.5	5.0	5.5	6.3	6.0	3.7	11.3	11.3	13.1	14.4	6.4	7.2
Travel Dist (mi)	6.2	6.3	0.3	0.3	29.7	6.1	0.2	1.7	4.2	1.5	6.9	63.4
Travel Time (hr)	0.4	0.3	0.0	0.0	1.3	0.3	0.0	0.2	0.4	0.1	0.5	3.5
Avg Speed (mph)	16	23	19	19	22	21	9	10	11	11	14	18
Vehicles Entered	62	66	3	3	285	58	4	35	56	20	90	682
Vehicles Exited	62	66	3	3	284	58	4	35	56	20	90	681
Hourly Exit Rate	62	66	3	3	284	58	4	35	56	20	90	681
Input Volume	66	67	3	3	286	57	4	36	55	21	91	689
% of Volume	94	99	100	100	99	102	94	98	102	95	99	99

4: G St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	4.2	0.1
Total Del/Veh (s)	1.2	0.8	2.7	2.2	6.7	2.1	2.0
Travel Dist (mi)	10.8	0.5	3.0	166.8	0.3	0.6	181.9
Travel Time (hr)	0.4	0.0	0.1	4.0	0.0	0.0	4.6
Avg Speed (mph)	28	22	38	42	14	17	40
Vehicles Entered	113	5	6	340	4	8	476
Vehicles Exited	113	5	6	340	4	8	476
Hourly Exit Rate	113	5	6	340	4	8	476
Input Volume	116	4	5	340	4	8	478
% of Volume	98	118	114	100	94	97	100

5: Bird Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0		0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.2	0.5		0.7	4.5	2.2	1.2
Travel Dist (mi)	46.8	10.1	0.1	60.6	5.8	0.8	124.1
Travel Time (hr)	1.1	0.2	0.0	1.4	0.2	0.0	3.1
Avg Speed (mph)	42	40	36	42	26	28	41
Vehicles Entered	94	20	0	295	45	6	460
Vehicles Exited	94	20	0	295	45	6	460
Hourly Exit Rate	94	20	0	295	45	6	460
Input Volume	99	20	1	295	46	5	467
% of Volume	95	100	0	100	98	114	99

6: Grant Line Rd & Berry Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.9	0.5	0.6	0.2	4.2	1.8	0.7
Travel Dist (mi)	0.8	19.1	52.7	0.6	0.7	0.4	74.2
Travel Time (hr)	0.0	0.4	1.3	0.0	0.0	0.0	1.8
Avg Speed (mph)	34	43	42	37	23	25	41
Vehicles Entered	4	94	291	3	7	4	403
Vehicles Exited	4	94	290	3	7	4	402
Hourly Exit Rate	4	94	290	3	7	4	402
Input Volume	5	97	292	3	8	4	410
% of Volume	76	97	99	100	85	94	98

7: Stoneridge Dr & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	0.4	0.1	0.7	5.2	3.9	0.7
Travel Dist (mi)	18.2	0.3	31.6	0.6	0.1	50.8
Travel Time (hr)	0.4	0.0	0.8	0.0	0.0	1.3
Avg Speed (mph)	43	37	39	17	18	40
Vehicles Entered	100	2	288	6	1	397
Vehicles Exited	100	2	289	6	1	398
Hourly Exit Rate	100	2	289	6	1	398
Input Volume	104	2	290	5	1	402
% of Volume	96	100	100	114	100	99

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Total Del/Veh (s)	1.0	0.4	1.5	1.0	5.7	4.9	3.3
Travel Dist (mi)	16.4	5.4	0.8	26.2	15.8	1.7	66.2
Travel Time (hr)	0.4	0.1	0.0	0.7	0.8	0.1	2.1
Avg Speed (mph)	42	39	35	39	21	21	32
Vehicles Entered	55	18	3	91	152	16	335
Vehicles Exited	55	18	3	92	152	16	336
Hourly Exit Rate	55	18	3	92	152	16	336
Input Volume	56	17	3	93	155	16	339
% of Volume	99	107	100	99	98	102	99

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	4.0	0.2	0.1	0.1	0.1	0.1	0.1	0.5
Total Del/Veh (s)	2.4	1.9	1.5	1.4	0.5	0.0	4.3	2.4	4.1	2.1	1.8
Travel Dist (mi)	0.6	55.8	3.0	7.3	10.1	0.2	3.9	0.6	0.1	0.2	81.9
Travel Time (hr)	0.0	1.6	0.1	0.3	0.2	0.0	0.2	0.0	0.0	0.0	2.4
Avg Speed (mph)	34	36	33	34	43	37	25	27	16	18	35
Vehicles Entered	2	194	10	41	57	1	33	5	2	3	348
Vehicles Exited	2	195	11	41	57	1	32	5	2	3	349
Hourly Exit Rate	2	195	11	41	57	1	32	5	2	3	349
Input Volume	3	197	10	40	59	1	34	4	2	3	353
% of Volume	67	99	107	103	97	100	95	118	100	100	99

Total Zone Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	129.2
Travel Dist (mi)	883.4
Travel Time (hr)	25.0
Avg Speed (mph)	35
Vehicles Entered	800
Vehicles Exited	58
Hourly Exit Rate	58
Input Volume	4193
% of Volume	1

Intersection: 1: Banta Rd & Grant Line Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	29	32
Average Queue (ft)	2	17
95th Queue (ft)	13	37
Link Distance (ft)	1432	1397
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: 6th St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	5	17	29
Average Queue (ft)	0	2	3
95th Queue (ft)	5	10	18
Link Distance (ft)	473	376	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			15
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	112	194	65	115
Average Queue (ft)	38	71	20	55
95th Queue (ft)	86	147	51	98
Link Distance (ft)	473	480	258	402
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	WB	NB
Directions Served	LT	L
Maximum Queue (ft)	18	12
Average Queue (ft)	1	1
95th Queue (ft)	9	7
Link Distance (ft)	2582	359
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Bird Rd & Grant Line Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	23
95th Queue (ft)	44
Link Distance (ft)	686
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	21	7
Average Queue (ft)	1	1
95th Queue (ft)	11	5
Link Distance (ft)	1015	498
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	490
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	WB	SB
Directions Served	L	LTR
Maximum Queue (ft)	5	127
Average Queue (ft)	0	58
95th Queue (ft)	4	104
Link Distance (ft)		547
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	170	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	7	57	71	25
Average Queue (ft)	0	8	25	4
95th Queue (ft)	4	35	60	18
Link Distance (ft)			634	285
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	140		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_EX AM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	4	16.0	0.331	6.5	LOS A	1.9	52.2	0.37	0.23	35.8
8	T1	772	16.0	0.331	6.2	LOS A	1.9	53.4	0.36	0.22	35.8
18	R2	28	16.0	0.021	2.9	LOS A	0.1	2.7	0.18	0.06	35.8
Approach		804	16.0	0.331	6.1	LOS A	1.9	53.4	0.35	0.21	35.8
East: KASSON											
1	L2	38	16.0	0.106	7.7	LOS A	0.4	11.1	0.61	0.61	33.1
6	T1	86	16.0	0.106	7.0	LOS A	0.4	11.4	0.60	0.59	34.8
16	R2	5	16.0	0.106	6.8	LOS A	0.4	11.4	0.60	0.59	34.0
Approach		128	16.0	0.106	7.2	LOS A	0.4	11.4	0.60	0.60	34.2
North: 11TH											
7	L2	7	16.0	0.551	10.6	LOS B	3.9	110.7	0.49	0.33	33.7
4	T1	852	16.0	0.551	10.6	LOS B	3.9	110.7	0.49	0.33	33.5
14	R2	251	16.0	0.551	10.6	LOS B	3.9	110.7	0.49	0.33	32.0
Approach		1109	16.0	0.551	10.6	LOS B	3.9	110.7	0.49	0.33	33.1
West: GRANT LINE											
5	L2	69	16.0	0.119	7.6	LOS A	0.5	14.2	0.66	0.65	32.1
2	T1	49	16.0	0.108	8.7	LOS A	0.4	12.2	0.66	0.66	34.5
12	R2	4	16.0	0.108	8.7	LOS A	0.4	12.2	0.66	0.66	33.0
Approach		122	16.0	0.119	8.1	LOS A	0.5	14.2	0.66	0.65	33.0
All Vehicles		2164	16.0	0.551	8.6	LOS A	3.9	110.7	0.46	0.32	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1: Banta Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.1	0.1	0.2
Total Del/Veh (s)	2.0	1.5	3.9	2.1	8.3	3.8	2.2
Travel Dist (mi)	146.8	9.8	4.6	103.6	2.1	1.7	268.7
Travel Time (hr)	3.6	0.3	0.1	2.6	0.1	0.1	6.8
Avg Speed (mph)	41	36	33	40	21	26	40
Vehicles Entered	478	32	16	364	16	13	919
Vehicles Exited	478	32	17	364	16	13	920
Hourly Exit Rate	478	32	17	364	16	13	920
Input Volume	475	27	18	366	15	13	914
% of Volume	101	119	93	100	105	100	101

2: 6th St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	4.8	0.0
Total Del/Veh (s)	2.1	1.0	5.5	1.4	11.4	4.2	1.9
Travel Dist (mi)	136.9	1.4	0.1	37.1	0.4	0.1	176.0
Travel Time (hr)	3.4	0.0	0.0	1.3	0.0	0.0	4.7
Avg Speed (mph)	41	37	18	30	10	14	37
Vehicles Entered	488	5	1	374	7	2	877
Vehicles Exited	487	5	1	373	7	2	875
Hourly Exit Rate	487	5	1	373	7	2	875
Input Volume	484	5	1	376	8	2	876
% of Volume	101	95	100	99	90	100	100

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	6.4	4.2	2.4	3.5	1.8	12.0	8.6	2.9	10.3	10.3	4.4	4.2
Travel Dist (mi)	2.9	46.9	1.2	35.7	2.0	0.3	0.4	0.2	1.6	0.9	2.5	94.6
Travel Time (hr)	0.1	1.9	0.1	1.4	0.1	0.0	0.0	0.0	0.1	0.1	0.2	4.0
Avg Speed (mph)	19	25	23	26	23	9	12	15	12	13	16	24
Vehicles Entered	28	451	12	336	19	6	7	4	22	12	32	929
Vehicles Exited	28	451	12	336	19	6	7	4	21	12	32	928
Hourly Exit Rate	28	451	12	336	19	6	7	4	21	12	32	928
Input Volume	28	447	12	333	18	7	8	4	21	11	36	925
% of Volume	99	101	100	101	104	89	90	94	101	109	90	100

4: G St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	4.2	0.1
Total Del/Veh (s)	1.7	1.1	6.6	2.8	7.6	4.2	2.3
Travel Dist (mi)	47.7	0.5	6.2	173.7	0.4	1.3	229.8
Travel Time (hr)	1.6	0.0	0.2	4.2	0.0	0.1	6.2
Avg Speed (mph)	29	24	35	41	13	15	37
Vehicles Entered	471	5	12	349	6	18	861
Vehicles Exited	471	5	12	349	6	18	861
Hourly Exit Rate	471	5	12	349	6	18	861
Input Volume	466	5	12	346	6	19	855
% of Volume	101	95	100	101	96	94	101

5: Bird Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.9	2.8	2.8	0.8	7.1	3.8	2.7
Travel Dist (mi)	222.6	23.2	1.0	68.9	3.2	0.4	319.2
Travel Time (hr)	5.6	0.6	0.0	1.6	0.1	0.0	8.1
Avg Speed (mph)	40	37	32	42	22	26	40
Vehicles Entered	442	46	5	335	25	3	856
Vehicles Exited	442	46	5	335	25	3	856
Hourly Exit Rate	442	46	5	335	25	3	856
Input Volume	439	47	4	330	26	2	848
% of Volume	101	98	118	102	96	150	101

6: Grant Line Rd & Berry Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.5	1.8	0.6	0.2	5.4	3.0	1.4
Travel Dist (mi)	2.2	87.7	61.0	1.2	0.6	0.4	153.1
Travel Time (hr)	0.1	2.2	1.4	0.0	0.0	0.0	3.8
Avg Speed (mph)	33	40	42	37	21	24	41
Vehicles Entered	11	432	338	7	6	4	798
Vehicles Exited	11	431	337	7	6	4	796
Hourly Exit Rate	11	431	337	7	6	4	796
Input Volume	11	428	331	8	6	4	788
% of Volume	100	101	102	90	96	94	101

7: Stoneridge Dr & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.2	0.8	3.7	0.6	5.6	5.1	1.0
Travel Dist (mi)	79.8	0.7	0.3	37.5	0.2	0.2	118.7
Travel Time (hr)	1.9	0.0	0.0	0.9	0.0	0.0	2.9
Avg Speed (mph)	41	35	25	40	16	16	40
Vehicles Entered	433	4	2	343	3	2	787
Vehicles Exited	433	4	2	343	3	2	787
Hourly Exit Rate	433	4	2	343	3	2	787
Input Volume	432	3	3	336	3	1	778
% of Volume	100	123	62	102	92	200	101

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1		0.1	0.0
Total Del/Veh (s)	1.3	0.6	1.0	0.5	4.6		1.8	1.3
Travel Dist (mi)	33.2	13.8	0.2	23.9	1.7	0.0	0.5	73.4
Travel Time (hr)	0.8	0.4	0.0	0.6	0.1	0.0	0.0	1.9
Avg Speed (mph)	42	38	37	42	16	17	19	39
Vehicles Entered	112	46	1	83	29	0	9	280
Vehicles Exited	112	46	1	83	29	0	9	280
Hourly Exit Rate	112	46	1	83	29	0	9	280
Input Volume	114	47	2	82	27	1	9	282
% of Volume	98	98	50	101	107	0	103	99

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	3.9	0.3	0.2	0.1	0.1	0.1	0.1	1.3
Total Del/Veh (s)	1.4	1.2	0.6	1.6	0.8	0.5	4.0	9.9	3.7	1.7	1.4
Travel Dist (mi)	1.2	31.6	7.4	15.3	9.3	0.1	2.0	0.1	0.1	0.2	67.4
Travel Time (hr)	0.0	0.8	0.2	0.6	0.2	0.0	0.1	0.0	0.0	0.0	1.9
Avg Speed (mph)	35	41	37	31	42	34	25	24	16	18	37
Vehicles Entered	4	110	26	103	62	1	16	1	2	4	329
Vehicles Exited	4	111	26	103	63	1	16	1	2	4	331
Hourly Exit Rate	4	111	26	103	63	1	16	1	2	4	331
Input Volume	5	110	25	106	61	1	20	1	2	3	334
% of Volume	76	101	104	97	104	100	81	100	100	123	99

Total Zone Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	281.4
Travel Dist (mi)	1500.8
Travel Time (hr)	40.3
Avg Speed (mph)	37
Vehicles Entered	940
Vehicles Exited	20
Hourly Exit Rate	20
Input Volume	6600
% of Volume	0

Intersection: 1: Banta Rd & Grant Line Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	70	48
Average Queue (ft)	8	17
95th Queue (ft)	40	41
Link Distance (ft)	1432	696
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: 6th St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	29	22	29
Average Queue (ft)	1	4	2
95th Queue (ft)	14	17	14
Link Distance (ft)	473	281	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			15
Storage Blk Time (%)		2	0
Queuing Penalty (veh)		0	0

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	189	149	35	68
Average Queue (ft)	64	45	10	25
95th Queue (ft)	142	109	33	59
Link Distance (ft)	473	480	269	402
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	2	94	14	3
Average Queue (ft)	0	10	2	0
95th Queue (ft)	0	48	8	2
Link Distance (ft)	480	2582	350	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Bird Rd & Grant Line Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	26	44
Average Queue (ft)	0	2	16
95th Queue (ft)	2	12	39
Link Distance (ft)	2582	1015	686
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	31	9
Average Queue (ft)	3	1
95th Queue (ft)	19	6
Link Distance (ft)	1015	498
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	31
Average Queue (ft)	1	4
95th Queue (ft)	15	22
Link Distance (ft)	523	470
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	WB	SB
Directions Served	L	LTR
Maximum Queue (ft)	2	72
Average Queue (ft)	0	26
95th Queue (ft)	2	57
Link Distance (ft)		302
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	170	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	7	58	56	24
Average Queue (ft)	0	10	12	4
95th Queue (ft)	4	38	40	17
Link Distance (ft)			634	283
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	140		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_EX PM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	4	9.0	0.378	8.3	LOS A	2.0	54.2	0.61	0.55	35.1
8	T1	749	9.0	0.378	7.7	LOS A	2.1	57.1	0.60	0.53	35.1
18	R2	42	9.0	0.031	2.9	LOS A	0.1	3.8	0.26	0.11	35.9
Approach		795	9.0	0.378	7.4	LOS A	2.1	57.1	0.58	0.50	35.1
East: KASSON											
1	L2	19	9.0	0.085	8.1	LOS A	0.3	9.3	0.67	0.67	33.7
6	T1	69	9.0	0.085	7.4	LOS A	0.4	9.7	0.67	0.65	34.7
16	R2	7	9.0	0.085	7.0	LOS A	0.4	9.7	0.67	0.64	34.0
Approach		95	9.0	0.085	7.5	LOS A	0.4	9.7	0.67	0.65	34.4
North: 11TH											
7	L2	9	9.0	0.436	7.8	LOS A	2.9	76.7	0.36	0.20	35.3
4	T1	690	9.0	0.436	7.8	LOS A	2.9	76.7	0.36	0.20	34.9
14	R2	279	9.0	0.436	7.8	LOS A	2.9	76.7	0.36	0.20	33.4
Approach		978	9.0	0.436	7.8	LOS A	2.9	76.7	0.36	0.20	34.5
West: GRANT LINE											
5	L2	331	9.0	0.439	10.7	LOS B	2.4	64.1	0.69	0.72	31.0
2	T1	116	9.0	0.237	10.6	LOS B	1.0	25.8	0.64	0.64	33.6
12	R2	3	9.0	0.237	10.6	LOS B	1.0	25.8	0.64	0.64	32.3
Approach		450	9.0	0.439	10.6	LOS B	2.4	64.1	0.67	0.70	31.6
All Vehicles		2318	9.0	0.439	8.2	LOS A	2.9	76.7	0.51	0.42	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX D:
YEAR 2035 NO BUILD ALTERNATIVE ANALYSIS RESULTS

1: Banta Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	102.5	113.9	0.0	0.0	0.1	0.1	50.6
Total Del/Veh (s)	144.5	150.8	10.1	6.0	104.6	86.8	74.8
Travel Dist (mi)	206.5	8.3	8.1	209.1	3.9	5.1	440.9
Travel Time (hr)	54.7	2.4	0.3	6.1	1.0	1.1	65.6
Avg Speed (mph)	6	6	27	34	4	4	10
Vehicles Entered	696	28	28	731	30	38	1551
Vehicles Exited	651	26	28	732	29	38	1504
Hourly Exit Rate	651	26	28	732	29	38	1504
Input Volume	770	30	30	741	30	40	1640
% of Volume	85	87	94	99	97	96	92

2: 6th St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	3.3	0.0	0.0	0.1	0.1	4.2	1.6
Total Del/Veh (s)	186.5	200.6	15.6	6.2	46.1	48.7	90.9
Travel Dist (mi)	183.9	4.9	2.1	74.0	1.0	0.9	266.8
Travel Time (hr)	40.3	1.1	0.2	3.6	0.3	0.3	45.7
Avg Speed (mph)	5	4	13	21	4	3	6
Vehicles Entered	671	18	21	756	18	17	1501
Vehicles Exited	639	17	21	756	19	17	1469
Hourly Exit Rate	639	17	21	756	19	17	1469
Input Volume	791	20	20	766	20	20	1638
% of Volume	81	84	104	99	94	84	90

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.3	1.9	2.7	0.1	0.2	0.4	0.1	0.1	0.2	0.3	0.2	0.3
Total Del/Veh (s)	78.0	65.1	65.2	40.1	27.9	22.8	31.1	28.0	15.7	30.7	32.6	23.2
Travel Dist (mi)	6.9	59.3	2.0	2.2	68.0	7.2	1.0	2.4	1.0	5.1	3.0	8.1
Travel Time (hr)	1.8	12.7	0.4	0.3	7.1	0.7	0.2	0.5	0.1	0.8	0.5	1.1
Avg Speed (mph)	4	5	5	7	10	10	5	5	7	6	6	8
Vehicles Entered	67	579	19	21	644	68	20	50	21	67	39	106
Vehicles Exited	67	575	19	21	646	69	20	50	21	68	38	107
Hourly Exit Rate	67	575	19	21	646	69	20	50	21	68	38	107
Input Volume	80	720	20	20	650	70	20	50	20	70	40	110
% of Volume	83	80	94	104	99	98	99	100	104	97	96	97

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	42.7
Travel Dist (mi)	166.3
Travel Time (hr)	26.2
Avg Speed (mph)	6
Vehicles Entered	1701
Vehicles Exited	1701
Hourly Exit Rate	1701
Input Volume	1872
% of Volume	91

4: G St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.2	4.1	0.1
Total Del/Veh (s)	4.2	3.2	20.6	16.7	51.8	7.6	11.4
Travel Dist (mi)	64.7	1.8	9.7	336.6	1.6	1.5	415.8
Travel Time (hr)	2.7	0.1	0.4	11.0	0.4	0.1	14.6
Avg Speed (mph)	24	21	27	31	4	12	29
Vehicles Entered	645	18	20	703	23	20	1429
Vehicles Exited	645	18	20	701	23	20	1427
Hourly Exit Rate	645	18	20	701	23	20	1427
Input Volume	790	20	20	710	20	20	1582
% of Volume	82	89	99	99	114	99	90

5: Bird Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	5.3	4.1	6.3	2.6	18.8	10.0	4.8
Travel Dist (mi)	302.9	16.8	4.1	123.3	8.7	2.6	458.5
Travel Time (hr)	7.9	0.5	0.1	3.2	0.6	0.1	12.5
Avg Speed (mph)	38	36	28	38	14	19	37
Vehicles Entered	623	33	20	599	67	20	1362
Vehicles Exited	625	34	20	599	67	20	1365
Hourly Exit Rate	625	34	20	599	67	20	1365
Input Volume	760	40	20	600	70	20	1510
% of Volume	82	86	99	100	95	99	90

6: Grant Line Rd & Berry Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	9.7	3.6	2.6	1.3	22.5	10.2	3.8
Travel Dist (mi)	3.6	117.3	109.1	9.3	3.8	2.2	245.3
Travel Time (hr)	0.1	3.2	2.9	0.3	0.4	0.1	7.1
Avg Speed (mph)	24	36	37	33	10	15	35
Vehicles Entered	18	577	602	51	39	22	1309
Vehicles Exited	18	578	601	51	38	22	1308
Hourly Exit Rate	18	578	601	51	38	22	1308
Input Volume	20	700	604	50	40	20	1434
% of Volume	89	83	100	102	96	109	91

7: Stoneridge Dr & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.5	1.3	5.0	1.4	18.9	8.1	2.4
Travel Dist (mi)	110.8	2.9	1.1	34.6	1.7	1.8	152.9
Travel Time (hr)	3.0	0.1	0.1	1.1	0.2	0.1	4.5
Avg Speed (mph)	37	33	15	33	10	14	34
Vehicles Entered	602	16	20	633	19	20	1310
Vehicles Exited	602	16	20	633	19	20	1310
Hourly Exit Rate	602	16	20	633	19	20	1310
Input Volume	722	20	20	633	20	20	1436
% of Volume	83	79	99	100	94	99	91

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.1
Total Del/Veh (s)	4.8	3.5	3.8	2.0	15.6	10.9	7.0
Travel Dist (mi)	71.0	6.7	5.6	65.5	9.9	6.5	165.2
Travel Time (hr)	2.1	0.2	0.2	1.9	1.2	0.7	6.3
Avg Speed (mph)	34	31	31	35	9	10	27
Vehicles Entered	314	30	19	228	177	117	885
Vehicles Exited	315	30	19	228	177	117	886
Hourly Exit Rate	315	30	19	228	177	117	886
Input Volume	350	30	20	230	180	110	920
% of Volume	90	101	94	99	98	106	96

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.9	0.4	0.3	0.1	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	4.9	3.9	2.7	2.0	2.0	0.5	13.7	14.8	5.1	14.4	14.7	5.2
Travel Dist (mi)	78.1	56.1	7.2	12.7	10.1	3.2	5.5	2.5	2.6	0.9	1.1	7.3
Travel Time (hr)	2.6	1.6	0.2	0.5	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.6
Avg Speed (mph)	31	36	32	31	38	32	16	18	22	9	10	13
Vehicles Entered	272	196	25	86	68	22	46	21	22	16	21	134
Vehicles Exited	273	196	25	85	68	22	45	21	22	16	21	134
Hourly Exit Rate	273	196	25	85	68	22	45	21	22	16	21	134
Input Volume	290	211	30	90	70	20	50	20	20	20	20	130
% of Volume	94	93	84	95	97	109	90	104	109	79	104	103

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	5.2
Travel Dist (mi)	187.3
Travel Time (hr)	6.6
Avg Speed (mph)	29
Vehicles Entered	929
Vehicles Exited	928
Hourly Exit Rate	928
Input Volume	972
% of Volume	95

Total Zone Performance

Denied Del/Veh (s)	38.1
Total Del/Veh (s)	1254.5
Travel Dist (mi)	2499.1
Travel Time (hr)	189.1
Avg Speed (mph)	15
Vehicles Entered	2203
Vehicles Exited	110
Hourly Exit Rate	110
Input Volume	13005
% of Volume	1

Intersection: 1: Banta Rd & Grant Line Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	1682	303	212
Average Queue (ft)	1010	39	76
95th Queue (ft)	2209	162	256
Link Distance (ft)	1619	1432	695
Upstream Blk Time (%)	39		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 6th St & Grant Line Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	1447	428	80	40
Average Queue (ft)	1252	65	17	15
95th Queue (ft)	1911	271	52	41
Link Distance (ft)	1432	473	281	
Upstream Blk Time (%)	21	0		
Queuing Penalty (veh)	168	3		
Storage Bay Dist (ft)				15
Storage Blk Time (%)			18	18
Queuing Penalty (veh)			4	4

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	491	495	108	240
Average Queue (ft)	472	318	49	108
95th Queue (ft)	537	558	92	193
Link Distance (ft)	473	480	258	402
Upstream Blk Time (%)	32	6		
Queuing Penalty (veh)	262	44		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	4	704	53	22
Average Queue (ft)	0	154	11	1
95th Queue (ft)	3	504	35	12
Link Distance (ft)	480	2582	359	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			1	0
Queuing Penalty (veh)			0	0

Intersection: 5: Bird Rd & Grant Line Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	157	91
Average Queue (ft)	0	20	39
95th Queue (ft)	2	89	73
Link Distance (ft)	2582	1015	686
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	229	9	70
Average Queue (ft)	28	0	15
95th Queue (ft)	126	5	46
Link Distance (ft)	1015	902	498
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	EB	WB	B30	B30	NB
Directions Served	TR	LT	T		LR
Maximum Queue (ft)	7	153	26	7	65
Average Queue (ft)	0	19	0	0	25
95th Queue (ft)	7	91	8	6	53
Link Distance (ft)	902	234	471	471	466
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		1			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	WB	WB	SB
Directions Served	L	T	LTR
Maximum Queue (ft)	59	10	276
Average Queue (ft)	6	0	106
95th Queue (ft)	31	7	202
Link Distance (ft)		1463	290
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	170		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	105	12	67	9	130	147
Average Queue (ft)	32	1	14	0	47	60
95th Queue (ft)	82	9	45	5	96	114
Link Distance (ft)		1463		777	634	283
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	120		140			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Zone Summary

Zone wide Queuing Penalty: 487

1: Banta Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	220.8	211.8	0.0	0.0	185.8	203.6	120.5
Total Del/Veh (s)	143.1	148.5	19.7	11.1	827.9	810.7	111.9
Travel Dist (mi)	271.6	10.2	6.5	279.9	7.7	3.2	579.1
Travel Time (hr)	109.3	4.1	0.3	9.5	21.0	8.6	152.7
Avg Speed (mph)	6	6	22	29	0	0	7
Vehicles Entered	908	34	23	980	68	28	2041
Vehicles Exited	862	33	23	978	50	20	1966
Hourly Exit Rate	862	33	23	978	50	20	1966
Input Volume	1100	40	30	1191	80	30	2470
% of Volume	78	83	77	82	62	67	80

2: 6th St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	1.0	0.0	0.0	0.1	0.2	4.1	0.5
Total Del/Veh (s)	158.8	158.1	22.8	8.2	118.8	104.9	80.1
Travel Dist (mi)	240.2	4.3	1.6	99.1	1.0	1.1	347.3
Travel Time (hr)	44.9	0.8	0.2	5.2	0.6	0.7	52.4
Avg Speed (mph)	5	5	10	19	2	2	7
Vehicles Entered	867	16	16	992	17	20	1928
Vehicles Exited	841	16	16	989	17	19	1898
Hourly Exit Rate	841	16	16	989	17	19	1898
Input Volume	1110	20	20	1204	20	20	2395
% of Volume	76	79	79	82	84	94	79

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.2	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	77.9	50.6	46.8	60.9	36.6	32.9	38.4	35.1	22.0	34.7	34.9	26.9
Travel Dist (mi)	3.0	84.3	2.3	1.7	99.6	2.7	1.0	1.0	1.0	3.1	2.3	4.2
Travel Time (hr)	0.8	14.0	0.4	0.3	12.5	0.3	0.3	0.2	0.2	0.5	0.4	0.6
Avg Speed (mph)	4	6	6	5	8	8	4	4	6	6	6	7
Vehicles Entered	29	810	22	16	932	25	20	19	19	41	31	55
Vehicles Exited	28	806	22	16	932	25	20	19	19	40	31	56
Hourly Exit Rate	28	806	22	16	932	25	20	19	19	40	31	56
Input Volume	40	1062	30	20	1152	30	20	20	20	40	30	50
% of Volume	70	76	74	79	81	84	99	94	94	101	104	112

3: 7th St/El Rancho Rd & Grant Line Rd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	42.6
Travel Dist (mi)	206.3
Travel Time (hr)	30.5
Avg Speed (mph)	7
Vehicles Entered	2019
Vehicles Exited	2014
Hourly Exit Rate	2014
Input Volume	2513
% of Volume	80

4: G St & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	82.2	69.5	26.7	52.2	39.1
Total Del/Veh (s)	4.7	3.6	212.8	209.2	599.7	215.8	123.5
Travel Dist (mi)	86.5	1.6	13.0	489.4	1.3	2.0	593.7
Travel Time (hr)	3.7	0.1	2.6	92.2	3.4	2.3	104.3
Avg Speed (mph)	24	21	7	7	0	1	7
Vehicles Entered	852	15	27	1018	19	29	1960
Vehicles Exited	854	16	25	956	16	26	1893
Hourly Exit Rate	854	16	25	956	16	26	1893
Input Volume	1102	20	30	1180	20	30	2382
% of Volume	78	79	84	81	79	87	79

5: Bird Rd & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	162.2	165.0	9.3
Total Del/Veh (s)	6.2	5.2	52.6	50.2	590.8	464.4	56.2
Travel Dist (mi)	398.0	23.6	3.8	203.2	8.7	1.9	639.4
Travel Time (hr)	10.6	0.7	0.4	18.6	17.8	3.3	51.4
Avg Speed (mph)	37	36	10	11	1	1	14
Vehicles Entered	832	47	19	998	78	17	1991
Vehicles Exited	834	47	18	976	56	14	1945
Hourly Exit Rate	834	47	18	976	56	14	1945
Input Volume	1070	60	20	1050	90	20	2310
% of Volume	78	78	89	93	62	69	84

6: Grant Line Rd & Berry Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.2	0.2	0.1
Total Del/Veh (s)	24.0	10.3	33.0	27.4	258.0	253.4	33.0
Travel Dist (mi)	4.2	147.9	183.5	10.2	5.3	1.9	353.0
Travel Time (hr)	0.3	5.5	13.5	0.7	4.3	1.5	25.7
Avg Speed (mph)	16	27	14	14	1	1	14
Vehicles Entered	21	731	1014	56	56	20	1898
Vehicles Exited	21	728	1001	56	49	18	1873
Hourly Exit Rate	21	728	1001	56	49	18	1873
Input Volume	30	931	1052	60	60	20	2154
% of Volume	71	78	95	93	82	89	87

7: Stoneridge Dr & Grant Line Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.5	2.3	13.9	10.3	79.0	26.8	8.4
Travel Dist (mi)	140.4	2.7	1.0	58.0	1.7	1.9	205.7
Travel Time (hr)	4.0	0.1	0.1	4.3	0.5	0.3	9.3
Avg Speed (mph)	35	31	9	13	3	8	22
Vehicles Entered	763	15	18	1058	19	21	1894
Vehicles Exited	764	15	18	1053	19	22	1891
Hourly Exit Rate	764	15	18	1053	19	22	1891
Input Volume	973	20	20	1092	20	20	2146
% of Volume	79	74	89	96	94	109	88

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.2	0.1
Total Del/Veh (s)	5.2	3.3	4.4	2.0	15.3	8.4	5.3
Travel Dist (mi)	82.1	14.0	13.4	102.1	6.3	4.7	222.6
Travel Time (hr)	2.5	0.4	0.5	3.0	0.7	0.4	7.5
Avg Speed (mph)	33	32	29	35	9	11	30
Vehicles Entered	363	62	47	358	111	83	1024
Vehicles Exited	364	62	47	357	111	83	1024
Hourly Exit Rate	364	62	47	357	111	83	1024
Input Volume	420	70	50	361	110	80	1092
% of Volume	87	88	94	99	101	103	94

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.7	0.6	0.6	0.2	0.2	0.2	1.4	1.0	0.9
Total Del/Veh (s)	4.7	5.0	2.6	4.3	3.2	1.2	16.6	18.6	6.0	26.1	28.6	16.3
Travel Dist (mi)	54.9	44.5	36.5	29.2	11.6	3.1	4.2	2.2	2.6	1.2	3.8	15.9
Travel Time (hr)	1.7	1.3	1.1	1.3	0.3	0.1	0.3	0.1	0.1	0.2	0.7	2.2
Avg Speed (mph)	31	35	33	27	35	31	15	15	22	6	6	8
Vehicles Entered	192	156	128	197	78	21	35	18	22	22	69	290
Vehicles Exited	191	156	127	197	78	21	35	18	22	22	69	290
Hourly Exit Rate	191	156	127	197	78	21	35	18	22	22	69	290
Input Volume	210	171	150	200	80	20	40	20	20	20	70	290
% of Volume	91	91	85	99	97	104	88	89	109	109	98	100

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	9.3
Travel Dist (mi)	209.6
Travel Time (hr)	9.5
Avg Speed (mph)	23
Vehicles Entered	1228
Vehicles Exited	1226
Hourly Exit Rate	1226
Input Volume	1291
% of Volume	95

Total Zone Performance

Denied Del/Veh (s)	133.7
Total Del/Veh (s)	1747.7
Travel Dist (mi)	3356.5
Travel Time (hr)	443.2
Avg Speed (mph)	10
Vehicles Entered	2494
Vehicles Exited	116
Hourly Exit Rate	116
Input Volume	18754
% of Volume	1

Intersection: 1: Banta Rd & Grant Line Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	1678	764	725
Average Queue (ft)	1197	92	539
95th Queue (ft)	2304	431	894
Link Distance (ft)	1619	1432	696
Upstream Blk Time (%)	44		46
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 6th St & Grant Line Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	1446	457	126	40
Average Queue (ft)	1286	90	31	19
95th Queue (ft)	1828	350	96	45
Link Distance (ft)	1432	473	281	
Upstream Blk Time (%)	19	1		
Queuing Penalty (veh)	209	17		
Storage Bay Dist (ft)				15
Storage Blk Time (%)			31	33
Queuing Penalty (veh)			6	7

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	490	495	85	168
Average Queue (ft)	470	444	38	76
95th Queue (ft)	520	601	79	137
Link Distance (ft)	473	480	269	402
Upstream Blk Time (%)	27	14		
Queuing Penalty (veh)	306	164		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	14	2588	255	70
Average Queue (ft)	0	2015	109	15
95th Queue (ft)	5	3218	307	63
Link Distance (ft)	480	2582	350	
Upstream Blk Time (%)		6	9	
Queuing Penalty (veh)		65	0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			51	1
Queuing Penalty (veh)			15	0

Intersection: 5: Bird Rd & Grant Line Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	41	932	667
Average Queue (ft)	3	449	379
95th Queue (ft)	58	1203	792
Link Distance (ft)	2582	1015	686
Upstream Blk Time (%)		4	26
Queuing Penalty (veh)		43	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	626	644	316
Average Queue (ft)	103	286	133
95th Queue (ft)	408	934	318
Link Distance (ft)	1015	902	498
Upstream Blk Time (%)	0	3	
Queuing Penalty (veh)	1	35	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	EB	WB	B30	B30	B30	NB
Directions Served	TR	LT	T			LR
Maximum Queue (ft)	5	309	361	302	363	101
Average Queue (ft)	0	115	112	89	116	34
95th Queue (ft)	3	350	373	297	457	77
Link Distance (ft)	902	234	459	459	459	466
Upstream Blk Time (%)		16	5	0	13	
Queuing Penalty (veh)		172	18	0	46	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	EB	WB	WB	SB
Directions Served	R	L	T	LTR
Maximum Queue (ft)	1	73	3	170
Average Queue (ft)	0	13	0	68
95th Queue (ft)	1	45	3	129
Link Distance (ft)	1112		1462	296
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)		170		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	83	38	97	12	110	295
Average Queue (ft)	22	4	34	1	40	128
95th Queue (ft)	62	23	73	8	82	246
Link Distance (ft)		1462		777	634	283
Upstream Blk Time (%)						2
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	120		140			
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Zone Summary

Zone wide Queuing Penalty: 1104

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_2035 No Build AM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	105	16.0	0.519	13.3	LOS B	3.3	92.8	0.76	0.81	31.6
8	T1	705	16.0	0.519	11.9	LOS B	3.5	99.0	0.76	0.79	32.6
18	R2	316	16.0	0.338	7.5	LOS A	1.8	51.0	0.63	0.58	33.3
Approach		1126	16.0	0.519	10.8	LOS B	3.5	99.0	0.72	0.73	32.7
East: KASSON											
1	L2	168	16.0	0.539	18.6	LOS C	2.9	82.8	0.79	0.86	28.7
6	T1	337	16.0	0.539	17.0	LOS C	3.1	86.4	0.79	0.86	30.2
16	R2	53	16.0	0.539	16.5	LOS C	3.1	86.4	0.79	0.86	29.7
Approach		558	16.0	0.539	17.5	LOS C	3.1	86.4	0.79	0.86	29.7
North: 11TH											
7	L2	21	16.0	0.798	28.5	LOS D	7.5	210.3	0.90	1.08	26.7
4	T1	779	16.0	0.798	27.9	LOS D	7.7	216.1	0.90	1.08	26.7
14	R2	242	16.0	0.798	26.8	LOS D	7.7	216.1	0.90	1.08	26.1
Approach		1042	16.0	0.798	27.7	LOS D	7.7	216.1	0.90	1.08	26.6
West: GRANT LINE											
5	L2	95	16.0	0.856	46.3	LOS E	7.9	222.7	0.95	1.22	21.9
2	T1	484	16.0	0.856	44.1	LOS E	8.5	239.2	0.95	1.23	22.3
12	R2	200	16.0	0.856	41.5	LOS E	8.5	239.2	0.96	1.24	22.3
Approach		779	16.0	0.856	43.7	LOS E	8.5	239.2	0.95	1.23	22.3
All Vehicles		3505	16.0	0.856	24.2	LOS C	8.5	239.2	0.84	0.97	27.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_2035 No Build PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	21	9.0	0.729	23.3	LOS C	6.0	159.8	0.90	1.03	28.5
8	T1	1031	9.0	0.729	20.8	LOS C	6.6	177.8	0.91	1.03	29.3
18	R2	104	9.0	0.092	4.0	LOS A	0.5	12.6	0.47	0.32	35.3
Approach		1156	9.0	0.729	19.3	LOS C	6.6	177.8	0.87	0.97	29.7
East: KASSON											
1	L2	83	9.0	0.632	32.8	LOS D	3.8	101.0	0.91	1.03	24.9
6	T1	344	9.0	0.632	28.5	LOS D	4.2	112.5	0.91	1.03	26.4
16	R2	21	9.0	0.632	26.4	LOS D	4.2	112.5	0.91	1.04	26.4
Approach		448	9.0	0.632	29.2	LOS D	4.2	112.5	0.91	1.03	26.1
North: 11TH											
7	L2	21	9.0	0.672	16.6	LOS C	5.5	146.9	0.79	0.86	31.1
4	T1	740	9.0	0.672	16.4	LOS C	5.5	148.5	0.79	0.85	30.8
14	R2	333	9.0	0.672	16.0	LOS C	5.5	148.5	0.78	0.84	29.8
Approach		1094	9.0	0.672	16.3	LOS C	5.5	148.5	0.79	0.85	30.5
West: GRANT LINE											
5	L2	521	9.0	0.827	31.3	LOS D	8.6	231.8	0.95	1.18	24.5
2	T1	323	9.0	0.659	22.5	LOS C	4.7	125.6	0.86	0.97	28.6
12	R2	21	9.0	0.659	22.5	LOS C	4.7	125.6	0.86	0.97	27.7
Approach		865	9.0	0.827	27.8	LOS D	8.6	231.8	0.91	1.10	25.9
All Vehicles		3563	9.0	0.827	21.7	LOS C	8.6	231.8	0.86	0.97	28.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX E:
YEAR 2035 BUILD ALTERNATIVE ANALYSIS RESULTS

1: Banta Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NE	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	0.4	1.5	1.8	1.5
Travel Dist (mi)	0.7	47.3	0.8	48.8
Travel Time (hr)	0.0	1.3	0.0	1.4
Avg Speed (mph)	42	36	20	35
Vehicles Entered	10	160	11	181
Vehicles Exited	10	160	11	181
Hourly Exit Rate	10	160	11	181
Input Volume	10	161	10	181
% of Volume	98	100	107	100

2: 6th St & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.2	0.3
Total Del/Veh (s)	0.4	1.5	3.6	1.7
Travel Dist (mi)	6.0	17.7	2.1	25.9
Travel Time (hr)	0.2	0.7	0.2	1.0
Avg Speed (mph)	39	24	15	25
Vehicles Entered	21	180	38	239
Vehicles Exited	21	181	38	240
Hourly Exit Rate	21	181	38	240
Input Volume	20	180	40	241
% of Volume	102	101	94	100

3: 7th St/El Rancho Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	6.0	5.6	5.4	5.8	5.6
Travel Dist (mi)	4.0	16.3	10.9	17.3	48.5
Travel Time (hr)	0.2	0.8	0.8	1.1	3.0
Avg Speed (mph)	18	20	14	15	16
Vehicles Entered	40	155	213	226	634
Vehicles Exited	40	155	213	226	634
Hourly Exit Rate	40	155	213	226	634
Input Volume	41	152	210	221	623
% of Volume	98	102	102	102	102

4: G St & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	2.1	0.3
Total Del/Veh (s)	0.9	1.0	3.8	1.3
Travel Dist (mi)	14.4	60.0	2.8	77.2
Travel Time (hr)	0.6	1.5	0.2	2.3
Avg Speed (mph)	25	40	16	34
Vehicles Entered	144	150	40	334
Vehicles Exited	144	151	39	334
Hourly Exit Rate	144	151	39	334
Input Volume	141	150	40	332
% of Volume	102	100	96	101

5: Bird Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	0.7	0.7	3.9	2.2
Travel Dist (mi)	57.2	8.8	20.5	86.4
Travel Time (hr)	1.4	0.3	0.8	2.5
Avg Speed (mph)	41	33	25	35
Vehicles Entered	141	44	157	342
Vehicles Exited	142	42	157	341
Hourly Exit Rate	142	42	157	341
Input Volume	140	40	160	341
% of Volume	101	104	98	100

6: Grant Line Rd & Berry Ave Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.1	0.7	2.8	1.5
Travel Dist (mi)	31.6	3.9	5.9	41.4
Travel Time (hr)	0.9	0.1	0.2	1.3
Avg Speed (mph)	33	33	24	32
Vehicles Entered	158	21	60	239
Vehicles Exited	156	21	60	237
Hourly Exit Rate	156	21	60	237
Input Volume	160	20	60	240
% of Volume	98	104	100	99

7: Stoneridge Dr & Grant Line Rd Performance by approach

Approach	EB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	0.8	3.7	1.5
Travel Dist (mi)	24.0	3.8	27.8
Travel Time (hr)	0.6	0.2	0.9
Avg Speed (mph)	37	18	32
Vehicles Entered	130	42	172
Vehicles Exited	130	42	172
Hourly Exit Rate	130	42	172
Input Volume	130	40	170
% of Volume	100	104	101

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	0.1
Total Del/Veh (s)	4.8	2.0	11.9	6.2
Travel Dist (mi)	83.9	72.2	16.7	172.9
Travel Time (hr)	2.5	2.1	1.7	6.3
Avg Speed (mph)	33	35	10	28
Vehicles Entered	387	252	290	929
Vehicles Exited	386	251	290	927
Hourly Exit Rate	386	251	290	927
Input Volume	395	250	290	936
% of Volume	98	100	100	99

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.0	0.2	0.2	0.4
Total Del/Veh (s)	4.1	1.9	11.3	6.9	4.9
Travel Dist (mi)	148.6	26.1	11.2	9.3	195.2
Travel Time (hr)	4.5	0.9	0.6	0.8	6.7
Avg Speed (mph)	33	33	18	13	29
Vehicles Entered	520	177	92	171	960
Vehicles Exited	521	176	93	171	961
Hourly Exit Rate	521	176	93	171	961
Input Volume	531	180	90	171	972
% of Volume	98	98	103	100	99

12: Bird Road & Bypass Road Performance by approach

Approach	WB	SE	NW	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	14.6	4.5	4.3	4.9
Travel Dist (mi)	14.6	263.7	66.0	344.3
Travel Time (hr)	0.7	6.8	2.6	10.2
Avg Speed (mph)	20	39	25	34
Vehicles Entered	78	692	766	1536
Vehicles Exited	78	693	766	1537
Hourly Exit Rate	78	693	766	1537
Input Volume	80	684	749	1514
% of Volume	97	101	102	102

13: F Street & Bypass Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	14.2	11.2	7.4	4.8	6.5
Travel Dist (mi)	7.4	8.2	245.1	147.4	408.1
Travel Time (hr)	0.5	0.5	6.8	4.6	12.3
Avg Speed (mph)	15	18	36	32	33
Vehicles Entered	69	73	607	826	1575
Vehicles Exited	69	74	607	827	1577
Hourly Exit Rate	69	74	607	827	1577
Input Volume	70	70	604	819	1562
% of Volume	99	106	101	101	101

14: Bypass Road & Banta Rd Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.8	0.3	0.2	1.3
Travel Dist (mi)	116.2	68.2	10.2	194.6
Travel Time (hr)	3.2	1.6	0.4	5.2
Avg Speed (mph)	36	43	24	37
Vehicles Entered	635	804	149	1588
Vehicles Exited	635	805	148	1588
Hourly Exit Rate	635	805	148	1588
Input Volume	635	800	150	1584
% of Volume	100	101	99	100

Total Zone Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	208.2
Travel Dist (mi)	1671.1
Travel Time (hr)	53.1
Avg Speed (mph)	32
Vehicles Entered	1864
Vehicles Exited	132
Hourly Exit Rate	132
Input Volume	8696
% of Volume	2

Intersection: 1: Banta Rd & Grant Line Rd

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	25	29
Average Queue (ft)	1	9
95th Queue (ft)	14	30
Link Distance (ft)	1497	319
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: 6th St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	18	29	30
Average Queue (ft)	1	10	13
95th Queue (ft)	8	27	37
Link Distance (ft)	473	281	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			15
Storage Blk Time (%)		2	1
Queuing Penalty (veh)		0	0

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	49	95	109	114
Average Queue (ft)	16	37	48	52
95th Queue (ft)	42	68	85	92
Link Distance (ft)	473	480	269	402
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	34	14	4
Average Queue (ft)	3	5	0
95th Queue (ft)	18	15	2
Link Distance (ft)	2582	350	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Bird Rd & Grant Line Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	21	69
Average Queue (ft)	1	34
95th Queue (ft)	10	54
Link Distance (ft)	1015	686
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	32	32
Average Queue (ft)	2	7
95th Queue (ft)	14	18
Link Distance (ft)	1015	498
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	45
Average Queue (ft)	22
95th Queue (ft)	45
Link Distance (ft)	466
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	WB	SB
Directions Served	L	LTR
Maximum Queue (ft)	57	228
Average Queue (ft)	7	95
95th Queue (ft)	32	172
Link Distance (ft)		302
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	170	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	91	12	61	10	101	126
Average Queue (ft)	28	1	14	0	45	55
95th Queue (ft)	68	7	44	4	85	101
Link Distance (ft)		1463		777	634	283
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	120		140			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 12: Bird Road & Bypass Road

Movement	WB	SE	SE	SE	NW	NW
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	87	74	87	104	90	151
Average Queue (ft)	33	30	13	32	32	64
95th Queue (ft)	65	60	52	82	75	122
Link Distance (ft)	982		1984	1984	413	413
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 13: F Street & Bypass Road

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	90	90	39	120	150	96	99	114
Average Queue (ft)	33	32	9	45	66	43	34	38
95th Queue (ft)	68	67	30	96	121	80	80	91
Link Distance (ft)	561	586		2088	2088		911	911
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			200			200		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 14: Bypass Road & Banta Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 1

1: Banta Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NE	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	0.4	1.8	1.9	1.7
Travel Dist (mi)	0.7	47.6	0.9	49.2
Travel Time (hr)	0.0	1.3	0.0	1.4
Avg Speed (mph)	42	35	19	35
Vehicles Entered	11	160	11	182
Vehicles Exited	11	160	11	182
Hourly Exit Rate	11	160	11	182
Input Volume	10	160	10	181
% of Volume	107	100	107	101

2: 6th St & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.0	0.3
Total Del/Veh (s)	0.4	2.0	3.7	2.1
Travel Dist (mi)	6.4	17.7	2.2	26.3
Travel Time (hr)	0.2	0.7	0.2	1.0
Avg Speed (mph)	39	26	15	27
Vehicles Entered	22	178	41	241
Vehicles Exited	22	178	41	241
Hourly Exit Rate	22	178	41	241
Input Volume	20	181	40	242
% of Volume	107	98	101	100

3: 7th St/El Rancho Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.2	0.1
Total Del/Veh (s)	5.7	6.2	4.4	5.8	5.3
Travel Dist (mi)	4.1	17.9	12.6	9.2	43.9
Travel Time (hr)	0.2	0.9	0.9	0.6	2.6
Avg Speed (mph)	19	21	14	16	17
Vehicles Entered	40	169	248	120	577
Vehicles Exited	40	169	247	120	576
Hourly Exit Rate	40	169	247	120	576
Input Volume	41	170	250	120	580
% of Volume	98	99	99	100	99

4: G St & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	2.5	0.3
Total Del/Veh (s)	0.9	1.5	4.0	1.5
Travel Dist (mi)	21.5	70.8	3.4	95.8
Travel Time (hr)	0.9	1.8	0.3	2.9
Avg Speed (mph)	24	40	15	33
Vehicles Entered	218	178	47	443
Vehicles Exited	218	176	48	442
Hourly Exit Rate	218	176	48	442
Input Volume	220	180	50	450
% of Volume	99	98	96	98

5: Bird Rd & Grant Line Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	0.7	0.7	4.5	2.2
Travel Dist (mi)	82.3	8.1	24.2	114.6
Travel Time (hr)	2.0	0.2	1.0	3.2
Avg Speed (mph)	41	34	25	36
Vehicles Entered	224	42	185	451
Vehicles Exited	224	42	186	452
Hourly Exit Rate	224	42	186	452
Input Volume	230	42	190	462
% of Volume	98	99	98	98

6: Grant Line Rd & Berry Ave Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.2	0.7	3.5	1.8
Travel Dist (mi)	37.3	3.7	7.7	48.7
Travel Time (hr)	1.1	0.1	0.3	1.6
Avg Speed (mph)	33	33	23	31
Vehicles Entered	192	22	78	292
Vehicles Exited	192	22	78	292
Hourly Exit Rate	192	22	78	292
Input Volume	196	22	80	299
% of Volume	98	99	97	98

7: Stoneridge Dr & Grant Line Rd Performance by approach

Approach	EB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	0.8	3.7	1.4
Travel Dist (mi)	28.9	3.7	32.7
Travel Time (hr)	0.8	0.2	1.0
Avg Speed (mph)	37	18	33
Vehicles Entered	164	42	206
Vehicles Exited	164	41	205
Hourly Exit Rate	164	41	205
Input Volume	166	40	207
% of Volume	98	101	99

9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.1
Total Del/Veh (s)	5.4	2.5	11.4	5.4
Travel Dist (mi)	109.7	117.9	11.3	238.8
Travel Time (hr)	3.5	3.5	1.1	8.1
Avg Speed (mph)	32	34	10	30
Vehicles Entered	539	412	196	1147
Vehicles Exited	539	413	195	1147
Hourly Exit Rate	539	413	195	1147
Input Volume	544	411	190	1146
% of Volume	99	100	102	100

10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	0.1	1.6	1.1
Total Del/Veh (s)	4.4	4.0	16.1	24.2	11.0
Travel Dist (mi)	152.0	44.3	9.9	21.2	227.3
Travel Time (hr)	4.6	1.8	0.7	3.7	10.8
Avg Speed (mph)	33	29	15	6	22
Vehicles Entered	533	299	82	388	1302
Vehicles Exited	532	300	81	387	1300
Hourly Exit Rate	532	300	81	387	1300
Input Volume	530	300	80	380	1291
% of Volume	100	100	101	102	101

12: Bird Road & Bypass Road Performance by approach

Approach	WB	SE	NW	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	21.5	5.3	5.5	6.1
Travel Dist (mi)	16.7	348.6	77.5	442.8
Travel Time (hr)	1.0	9.3	3.9	14.1
Avg Speed (mph)	17	38	20	31
Vehicles Entered	89	915	1212	2216
Vehicles Exited	89	913	1211	2213
Hourly Exit Rate	89	913	1211	2213
Input Volume	90	913	1233	2236
% of Volume	98	100	98	99

13: F Street & Bypass Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	25.4	17.4	13.1	8.0	11.3
Travel Dist (mi)	11.7	7.9	414.0	209.0	642.5
Travel Time (hr)	1.1	0.6	13.1	7.5	22.3
Avg Speed (mph)	10	14	32	28	29
Vehicles Entered	111	70	1022	1158	2361
Vehicles Exited	110	70	1019	1156	2355
Hourly Exit Rate	110	70	1019	1156	2355
Input Volume	111	70	1042	1157	2380
% of Volume	99	100	98	100	99

14: Bypass Road & Banta Rd Performance by approach

Approach	NB	SB	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	0.4	0.2	2.0
Travel Dist (mi)	202.5	96.9	10.9	310.4
Travel Time (hr)	5.9	2.3	0.5	8.7
Avg Speed (mph)	34	42	24	36
Vehicles Entered	1103	1144	159	2406
Vehicles Exited	1105	1143	160	2408
Hourly Exit Rate	1105	1143	160	2408
Input Volume	1126	1140	160	2426
% of Volume	98	100	100	99

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	224.1
Travel Dist (mi)	2272.9
Travel Time (hr)	77.7
Avg Speed (mph)	29
Vehicles Entered	2183
Vehicles Exited	254
Hourly Exit Rate	254
Input Volume	11899
% of Volume	2

Intersection: 1: Banta Rd & Grant Line Rd

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	27	30
Average Queue (ft)	1	8
95th Queue (ft)	12	28
Link Distance (ft)	1497	319
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: 6th St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	28	30	31
Average Queue (ft)	1	10	13
95th Queue (ft)	12	27	37
Link Distance (ft)	473	281	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			15
Storage Blk Time (%)		2	1
Queuing Penalty (veh)		0	0

Intersection: 3: 7th St/El Rancho Rd & Grant Line Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	43	83	102	86
Average Queue (ft)	14	41	51	37
95th Queue (ft)	40	73	86	67
Link Distance (ft)	473	480	269	402
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: G St & Grant Line Rd

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	51	20	22
Average Queue (ft)	7	6	1
95th Queue (ft)	32	16	12
Link Distance (ft)	2582	350	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 5: Bird Rd & Grant Line Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	24	76
Average Queue (ft)	2	38
95th Queue (ft)	12	60
Link Distance (ft)	1015	686
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Grant Line Rd & Berry Ave

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	19	37
Average Queue (ft)	1	9
95th Queue (ft)	10	24
Link Distance (ft)	1015	498
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Stoneridge Dr & Grant Line Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	42
Average Queue (ft)	22
95th Queue (ft)	44
Link Distance (ft)	466
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-5 SB On-Ramp/I-5 SB Off-Ramp & S Kasson Rd

Movement	EB	WB	WB	SB
Directions Served	TR	L	T	LTR
Maximum Queue (ft)	2	60	10	152
Average Queue (ft)	0	19	0	67
95th Queue (ft)	3	48	5	121
Link Distance (ft)	1133		1463	302
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		170		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: I-5 NB-Ramps/Mancuso Rd & S Kasson Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	72	49	97	10	97	318
Average Queue (ft)	21	8	36	0	42	148
95th Queue (ft)	56	31	74	6	79	283
Link Distance (ft)		1463		777	634	283
Upstream Blk Time (%)						5
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	120		140			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 12: Bird Road & Bypass Road

Movement	WB	SE	SE	SE	NW	NW	B45	B45	B45
Directions Served	LR	L	T	T	T	TR	T	T	
Maximum Queue (ft)	98	101	96	119	144	167	5	18	5
Average Queue (ft)	43	35	19	37	58	87	0	1	0
95th Queue (ft)	82	71	63	91	117	146	5	10	4
Link Distance (ft)	982		1984	1984	287	287	669	669	669
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		200							
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 13: F Street & Bypass Road

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	119	97	40	212	231	172	131	157
Average Queue (ft)	55	34	10	106	125	87	45	60
95th Queue (ft)	99	73	33	184	203	149	95	118
Link Distance (ft)	561	586		2088	2088		911	911
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			200			200		
Storage Blk Time (%)				0		0		
Queuing Penalty (veh)				0		0		

Intersection: 14: Bypass Road & Banta Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 1

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_2035_ALT 3A_AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	1	16.0	0.334	6.5	LOS A	1.9	53.4	0.36	0.21	35.9
8	T1	789	16.0	0.334	6.2	LOS A	1.9	54.5	0.35	0.21	35.8
18	R2	379	16.0	0.300	5.6	LOS A	1.7	47.1	0.31	0.17	34.3
Approach		1169	16.0	0.334	6.0	LOS A	1.9	54.5	0.34	0.20	35.3
East: KASSON											
1	L2	347	16.0	0.324	10.3	LOS B	1.4	39.5	0.66	0.67	31.2
6	T1	1	16.0	0.324	9.7	LOS A	1.4	39.5	0.65	0.66	31.6
16	R2	53	16.0	0.324	9.7	LOS A	1.4	39.5	0.65	0.66	30.4
Approach		401	16.0	0.324	10.2	LOS B	1.4	39.5	0.66	0.67	31.1
North: 11TH											
7	L2	21	16.0	0.640	15.3	LOS C	5.0	140.8	0.73	0.76	31.5
4	T1	1021	16.0	0.640	15.1	LOS C	5.0	141.6	0.73	0.75	31.4
14	R2	1	16.0	0.640	14.9	LOS B	5.0	141.6	0.73	0.75	30.4
Approach		1043	16.0	0.640	15.1	LOS C	5.0	141.6	0.73	0.75	31.4
West: GRANT LINE											
5	L2	11	16.0	0.147	13.0	LOS B	0.6	16.4	0.76	0.76	32.0
2	T1	84	16.0	0.147	11.5	LOS B	0.6	17.5	0.75	0.75	32.7
12	R2	21	16.0	0.147	10.2	LOS B	0.6	17.5	0.74	0.74	32.2
Approach		116	16.0	0.147	11.4	LOS B	0.6	17.5	0.75	0.75	32.6
All Vehicles		2729	16.0	0.640	10.3	LOS B	5.0	141.6	0.55	0.50	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [11TH/GRANT LINE_2035_ALT 3A_PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	1	9.0	0.651	11.9	LOS B	5.6	150.4	0.57	0.38	33.3
8	T1	1615	9.0	0.651	11.4	LOS B	5.7	153.6	0.55	0.36	33.2
18	R2	479	9.0	0.349	5.8	LOS A	2.1	56.6	0.30	0.15	34.3
Approach		2095	9.0	0.651	10.1	LOS B	5.7	153.6	0.49	0.31	33.5
East: KASSON											
1	L2	510	9.0	0.734	34.8	LOS D	5.2	138.2	0.92	1.09	23.7
6	T1	1	9.0	0.734	31.0	LOS D	5.2	138.2	0.91	1.09	24.6
16	R2	63	9.0	0.734	31.0	LOS D	5.2	138.2	0.91	1.09	23.9
Approach		574	9.0	0.734	34.4	LOS D	5.2	138.2	0.92	1.09	23.7
North: 11TH											
7	L2	21	9.0	0.664	17.1	LOS C	5.2	139.0	0.80	0.88	30.9
4	T1	1000	9.0	0.664	16.7	LOS C	5.3	141.0	0.80	0.88	30.8
14	R2	1	9.0	0.664	16.4	LOS C	5.3	141.0	0.80	0.87	29.9
Approach		1022	9.0	0.664	16.7	LOS C	5.3	141.0	0.80	0.88	30.8
West: GRANT LINE											
5	L2	52	9.0	0.171	12.5	LOS B	0.7	18.9	0.77	0.77	30.7
2	T1	73	9.0	0.171	10.3	LOS B	0.8	20.3	0.76	0.76	33.2
12	R2	21	9.0	0.171	9.9	LOS A	0.8	20.3	0.76	0.76	32.5
Approach		146	9.0	0.171	11.0	LOS B	0.8	20.3	0.76	0.76	32.2
All Vehicles		3836	9.0	0.734	15.5	LOS C	5.7	153.6	0.65	0.60	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [11TH/New Alignment_2035_Alt 3A_AM_With Zone A]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	21	16.0	1.052	86.0	LOS F	20.8	585.3	1.00	1.87	16.1
8	T1	1010	16.0	1.052	83.4	LOS F	22.8	643.0	1.00	1.90	16.3
18	R2	21	16.0	1.052	81.1	LOS F	22.8	643.0	1.00	1.93	16.3
Approach		1052	16.0	1.052	83.4	LOS F	22.8	643.0	1.00	1.90	16.3
East: Bird											
1	L2	125	16.0	0.870	51.9	LOS F	7.8	219.4	0.96	1.26	20.7
6	T1	208	16.0	0.870	51.9	LOS F	7.8	219.4	0.96	1.26	20.7
16	R2	94	16.0	0.240	13.3	LOS B	1.1	32.0	0.81	0.81	30.8
Approach		427	16.0	0.870	43.4	LOS E	7.8	219.4	0.92	1.16	22.2
North: 11TH											
7	L2	167	16.0	0.615	14.0	LOS B	5.5	155.8	0.79	0.76	31.2
4	T1	958	16.0	0.615	12.9	LOS B	5.8	162.7	0.79	0.73	32.1
14	R2	531	16.0	0.368	0.1	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		1656	16.0	0.615	8.9	LOS A	5.8	162.7	0.54	0.50	33.5
West: Bypass (New) Road											
5	L2	333	16.0	0.937	68.3	LOS F	10.0	282.6	0.98	1.38	17.8
2	T1	375	16.0	0.937	59.7	LOS F	10.0	282.6	0.97	1.39	19.6
12	R2	21	16.0	0.937	59.7	LOS F	10.0	282.6	0.97	1.39	19.1
Approach		729	16.0	0.937	63.6	LOS F	10.0	282.6	0.97	1.38	18.7
All Vehicles		3865	16.0	1.052	43.3	LOS E	22.8	643.0	0.79	1.12	22.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [11TH/New Alignment_2035_Alt 3A_PM_With Zone A]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	21	9.0	1.529	271.0	LOS F	89.6	2400.9	1.00	4.14	7.1
8	T1	1500	9.0	1.529	267.9	LOS F	112.5	3014.9	1.00	4.44	7.1
18	R2	135	9.0	1.529	265.2	LOS F	112.5	3014.9	1.00	4.71	7.1
Approach		1656	9.0	1.529	267.7	LOS F	112.5	3014.9	1.00	4.46	7.1
East: Bird											
1	L2	146	9.0	1.356	195.8	LOS F	67.6	1811.4	1.00	3.62	9.2
6	T1	542	9.0	1.356	195.8	LOS F	67.6	1811.4	1.00	3.62	9.1
16	R2	271	9.0	0.527	17.2	LOS C	3.2	87.1	0.88	0.96	29.3
Approach		958	9.0	1.356	145.3	LOS F	67.6	1811.4	0.97	2.87	11.3
North: 11TH											
7	L2	135	9.0	0.633	15.0	LOS C	6.3	168.0	0.90	0.92	31.1
4	T1	1031	9.0	0.633	13.4	LOS B	6.9	184.5	0.90	0.87	32.0
14	R2	708	9.0	0.461	0.1	LOS A	0.0	0.0	0.00	0.00	37.8
Approach		1875	9.0	0.633	8.5	LOS A	6.9	184.5	0.56	0.55	33.8
West: Bypass (New) Road											
5	L2	656	9.0	1.002	72.8	LOS F	16.7	446.6	1.00	1.62	17.3
2	T1	292	9.0	1.002	66.2	LOS F	16.7	446.6	1.00	1.66	18.3
12	R2	21	9.0	1.002	66.2	LOS F	16.7	446.6	1.00	1.66	17.9
Approach		969	9.0	1.002	70.6	LOS F	16.7	446.6	1.00	1.63	17.6
All Vehicles		5458	9.0	1.529	122.2	LOS F	112.5	3014.9	0.84	2.33	12.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [11TH/New Alignment_2035_Alt 3A_AM_Without Zone A]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	42	16.0	0.509	10.9	LOS B	3.1	88.8	0.60	0.53	33.3
8	T1	833	16.0	0.509	10.8	LOS B	3.2	88.9	0.59	0.52	33.3
18	R2	21	16.0	0.509	10.7	LOS B	3.2	88.9	0.59	0.52	32.1
Approach		896	16.0	0.509	10.8	LOS B	3.2	88.9	0.59	0.52	33.3
East: Bird											
1	L2	52	16.0	0.174	8.9	LOS A	0.7	20.2	0.69	0.69	32.8
6	T1	42	16.0	0.174	8.9	LOS A	0.7	20.2	0.69	0.69	32.6
16	R2	31	16.0	0.056	7.1	LOS A	0.2	6.2	0.65	0.62	33.6
Approach		125	16.0	0.174	8.5	LOS A	0.7	20.2	0.68	0.67	32.9
North: 11TH											
7	L2	42	16.0	0.358	6.9	LOS A	2.1	58.8	0.39	0.25	35.3
4	T1	792	16.0	0.358	6.6	LOS A	2.1	60.2	0.38	0.24	35.4
14	R2	438	16.0	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	37.7
Approach		1271	16.0	0.358	4.3	LOS A	2.1	60.2	0.25	0.15	36.2
West: Bypass (New) Road											
5	L2	208	16.0	0.222	9.1	LOS A	0.9	25.2	0.65	0.65	31.8
2	T1	21	16.0	0.222	8.5	LOS A	0.9	25.2	0.64	0.64	32.5
12	R2	31	16.0	0.222	8.5	LOS A	0.9	25.2	0.64	0.64	31.2
Approach		260	16.0	0.222	9.0	LOS A	0.9	25.2	0.64	0.64	31.8
All Vehicles		2552	16.0	0.509	7.3	LOS A	3.2	88.9	0.43	0.36	34.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [11TH/New Alignment_2035_Alt 3A_PM_Without Zone A]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: 11TH											
3	L2	42	9.0	0.886	40.3	LOS E	9.6	258.0	0.95	1.24	23.6
8	T1	1052	9.0	0.886	38.7	LOS E	10.1	269.6	0.95	1.24	23.8
18	R2	21	9.0	0.886	37.3	LOS E	10.1	269.6	0.95	1.24	23.5
Approach		1115	9.0	0.886	38.7	LOS E	10.1	269.6	0.95	1.24	23.8
East: Bird											
1	L2	63	9.0	0.256	13.1	LOS B	1.2	31.9	0.82	0.82	31.0
6	T1	42	9.0	0.256	13.1	LOS B	1.2	31.9	0.82	0.82	30.8
16	R2	94	9.0	0.227	12.4	LOS B	1.1	28.2	0.81	0.81	31.3
Approach		198	9.0	0.256	12.8	LOS B	1.2	31.9	0.81	0.81	31.1
North: 11TH											
7	L2	63	9.0	0.336	6.3	LOS A	2.0	53.3	0.39	0.24	35.6
4	T1	771	9.0	0.336	6.0	LOS A	2.0	54.7	0.38	0.23	35.7
14	R2	687	9.0	0.448	0.1	LOS A	0.0	0.0	0.00	0.00	37.8
Approach		1521	9.0	0.448	3.3	LOS A	2.0	54.7	0.21	0.12	36.6
West: Bypass (New) Road											
5	L2	708	9.0	0.588	15.9	LOS C	3.6	96.4	0.76	0.84	29.2
2	T1	52	9.0	0.588	15.1	LOS C	3.6	96.4	0.76	0.84	29.5
12	R2	21	9.0	0.588	15.1	LOS C	3.6	96.4	0.76	0.84	28.5
Approach		781	9.0	0.588	15.8	LOS C	3.6	96.4	0.76	0.84	29.2
All Vehicles		3615	9.0	0.886	17.5	LOS C	10.1	269.6	0.59	0.66	29.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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