



DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

TRA VIGNE DEVELOPMENT PROJECT
(SCH: 2016022061)

VOLUME I

P16-0025

APRIL 2018

Prepared for:

City of Stockton
Community Development Department, Planning & Engineering Division
345 N. El Dorado Street
Stockton, CA 95202
(209) 937-8444

Prepared by:

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D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



CITY OF STOCKTON
PUBLIC NOTICE OF AVAILABILITY OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

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PROJECT TITLE: Tra Vigne Development Project

City of Stockton Community Development Department as a Lead Agency has completed, independently reviewed, and analyzed the following draft Environmental Impact Report for Tra Vigne Development Project (P16-0025).

PROJECT LOCATION:

The proposed Project site is located within the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project site is immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad, and on the south by Bear Creek and the associated Bear Creek Levee. The Project site consists largely of active agricultural fields. The Project site includes 15.57-acres of industrial uses in the north-central portion of the Project site (Assessor's Parcel Numbers 120-02-13, and 120-02-14); uses within these industrial lots include Pacific Bell and Bragg Investment Company.

PROJECT DESCRIPTION:

The Project includes development of up to 340 HDR units, up to 1,163 LDR units, up to 101,500 square feet of commercial, an existing 15.57-acre industrial area, establishment of a 14.7-acres K-8 school site, and associated park and utility improvements. The Project is requesting annexation and pre-zoning of 341.17-acres of land into the Stockton city limits, and the subsequent development of 318.82-acres of land. The General Plan Amendment would include maintaining approximately 260.69-acres of LDR uses; maintaining approximately 15.57-acres of I uses; changing approximately 1.5-acres of LDR to C uses; changing approximately 1.03-acres of LDR to HDR uses; and changing 20.36-acres of LDR to OSA. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek. Associated Tentative Maps would provide for subdivision of the project site. The project will also include a Development Agreement.

SIGNIFICANT ENVIRONMENTAL EFFECTS:

The Draft EIR has identified the following environmental issue areas as having significant and unavoidable environmental impacts from implementation of the Project: Aesthetics, Agricultural Resources, Air Quality, Greenhouse Gas Emissions and Climate Change, Public Services and Recreation, Transportation and Circulation, and Cumulative Impacts. All other environmental issues were determined to have no impact, less than significant impacts, or less than significant impacts with mitigation measures incorporated into the Project.

PUBLIC REVIEW PERIOD:

A 45-day public review period for the Draft EIR will commence on April 12, 2018 and end by 4:30 PM on May 29, 2018. Any written comments on the Draft EIR must be received at the address below or E-mail within the public review period. Copies of the Draft EIR are available for review at the City of Stockton, 345 N. El Dorado Street, Stockton, CA 95202. A copy of the Draft EIR may be reviewed and/or obtained at the following address or at <http://www.stocktonca.gov/environmental>.

Attn: Brian Millar, Project Planner, E-mail: brian@landlogistics.com
Community Development Department, Planning and Engineering Division
345 North El Dorado Street
Stockton, CA 95202

If we do not receive a response from your agency or organization, we will presume that your agency or organization has no response to make.

DAVID KWONG, DIRECTOR
COMMUNITY DEVELOPMENT DEPARTMENT

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VOLUME I

Chapters	Page Numbers
Executive Summary.....	ES-1
ES.1 Introduction	ES-1
ES.2 Project Description.....	ES-1
ES.3 Areas of Controversy and Issues Raised During Scoping	ES-2
ES.4 Alternatives to the Proposed Project.....	ES-3
ES.5 Summary of Impacts and Mitigation Measures.....	ES-5
1.0 Introduction	1.0-1
1.0.1 Purpose and Intended Uses of the EIR	1.0-1
1.0.2 Type of EIR	1.0-1
1.0.3 Known Responsible and Trustee Agencies	1.0-2
1.0.4 Environmental Review Process.....	1.0-2
1.0.5 Organization and Scope	1.0-4
1.0.6 Comments Received on the Notice of Preparation	1.0-6
2.0 Project Description	2.0-1
2.0.1 Project Location	2.0-1
2.0.2 Project Setting.....	2.0-1
2.0.3 General Plan Land Use and Zoning Designations	2.0-2
2.0.4 Project Goals and Objectives	2.0-4
2.0.5 Project Characteristics and Description.....	2.0-5
2.0.6 Uses of the EIR and Required Agency Approvals.....	2.0-11
2.0.6 Project Alternative Descriptions	2.0-12
3.0 Environmental Analysis.....	3.0-1
3.0.1 Introduction	3.0-1
3.1 Aesthetics and Visual Resources.....	3.1-1
3.1.1 Introduction	3.1-1
3.1.2 Environmental Setting	3.1-1
3.1.3 Regulatory Setting	3.1-5
3.1.4 Impacts and Mitigation Measures	3.1-8
3.2 Agricultural Resources	3.2-1
3.2.1 Introduction	3.2-1
3.2.2 Environmental Setting	3.2-1
3.2.3 Regulatory Setting	3.2-8
3.2.4 Impacts and Mitigation Measures	3.2-12

3.3 Air Quality	3.3-1
3.3.1 Introduction	3.3-1
3.3.2 Environmental Setting	3.3-1
3.3.3 Regulatory Setting.....	3.3-11
3.3.4 Impacts and Mitigation Measures	3.3-17
3.4 Biological Resources.....	3.4-1
3.4.1 Introduction	3.4-1
3.4.2 Environmental Setting	3.4-2
3.4.3 Regulatory Setting.....	3.4-14
3.4.4 Impacts and Mitigation Measures	3.4-22
3.5 Cultural and Tribal Resources	3.5-1
3.5.1 Introduction	3.5-1
3.5.2 Environmental Setting	3.5-1
3.5.3 Regulatory Setting.....	3.5-6
3.5.4 Impacts and Mitigation Measures	3.5-10
3.6 Geology and Soils	3.6-1
3.6.1 Introduction	3.6-1
3.6.2 Environmental Setting	3.6-1
3.6.3 Regulatory Setting.....	3.6-7
3.6.4 Impacts and Mitigation Measures	3.6-11
3.7 Greenhouse Gases and Climate Change	3.7-1
3.7.1 Introduction	3.7-1
3.7.2 Environmental Setting	3.7-1
3.7.3 Regulatory Setting.....	3.7-7
3.7.4 Impacts and Mitigation Measures	3.7-16
3.8 Hazards and Hazardous Materials	3.8-1
3.8.1 Introduction	3.8-1
3.8.2 Environmental Setting	3.8-1
3.8.3 Regulatory Setting.....	3.8-7
3.8.4 Impacts and Mitigation Measures	3.8-11
3.9 Hydrology and Water Quality	3.9-1
3.9.1 Introduction	3.9-1
3.9.2 Environmental Setting	3.9-1
3.9.3 Regulatory Setting.....	3.9-9
3.9.4 Impacts and Mitigation Measures	3.9-17

3.10 Land Use and Population	3.10-1
3.10.1 Introduction	3.10-1
3.10.2 Environmental Setting	3.10-1
3.10.3 Regulatory Setting	3.10-3
3.10.4 Impacts and Mitigation Measures	3.10-15
3.11 Noise	3.11-1
3.11.1 Introduction	3.11-1
3.11.2 Environmental Setting	3.11-1
3.11.3 Regulatory Setting	3.11-7
3.11.4 Impacts and Mitigation Measures	3.11-12

VOLUME II

Chapters	Page Numbers
3.12 Public Services and Recreation	3.12-1
3.12.1 Introduction	3.12-1
3.12.2 Existing Conditions.....	3.12-1
3.12.3 Regulatory Setting	3.12-9
3.12.4 Impacts and Mitigation Measures	3.12-16
3.13 Transportation and Circulation.....	3.13-1
3.13.1 Introduction	3.13-1
3.13.2 Environmental Setting	3.13-1
3.13.3 Analysis Methods	3.13-7
3.13.4 Level of Service Significance Thresholds.....	3.13-21
3.13.5 Existing Transportation Conditions.....	3.13-24
3.13.6 Travel Characteristics of the Proposed Project and Project Alternatives	3.13-28
3.13.7 Regulatory Setting	3.13-38
3.13.8 Near-Term Future Existing Plus Approved Projects Impacts and Mitigation Measures.....	3.13-42
3.13.9 Long-Term Future Cumulative Impacts and Mitigation Measures.....	3.13-108
3.14 Utilities.....	3.14-1
3.14.1 Wastewater Services	3.14-1
Existing Setting.....	3.14-1
Regulatory Setting - Wastewater.....	3.14-5
Impacts and Mitigation Measures	3.14-8
3.14.2 Water Supplies.....	3.14-20
Existing Setting.....	3.14-20

Regulatory Setting - Water Supplies	3.14-28
Impacts and Mitigation Measures	3.14-32
3.14.3 Storm Water	3.14-40
Existing Setting.....	3.14-40
Regulatory Setting - Storm Water.....	3.14-43
Impacts and Mitigation Measures	3.14-50
3.14.4 Solid Waste	3.14-56
Existing Setting.....	3.14-56
Regulatory Setting - Solid Waste	3.14-56
Impacts and Mitigation Measures	3.14-59
4.0 Other CEQA-Required Topics	4.0-1
4.1 Cumulative Setting and Impact Analysis.....	4.0-1
4.2 Significant Irreversible Effects	4.0-96
4.3 Significant and Unavoidable Impacts.....	4.0-97
5.0 Alternatives to the Proposed Project.....	5.0-1
5.1 CEQA Requirements.....	5.0-1
5.2 Alternatives Considered in this EIR	5.0-3
5.3 Environmental Analysis.....	5.0-6
6.0 Report Preparers.....	6.0-1
7.0 References	7.0-1

VOLUME I

Tables	Page Numbers
Table ES-1: Project Impacts and Proposed Mitigation Measures	ES-6
Table 2-1: Parcels Within the Project Area	2.0-1
Table 2-2: Existing and Proposed Land Use and Zoning Designations.....	2.0-8
Table 3.2-1: Summary Comparison of Crop Values	3.2-2
Table 3.2-2: Soil Capability Classification.....	3.2-3
Table 3.2-3: Storie Index Rating System	3.2-3
Table 3.2-4: San Joaquin County Farmlands Summary and Change by Land Use Category	3.2-4
Table 3.2-5: Project Soils.....	3.2-7
Table 3.3-1: Federal and State Ambient Air Quality Standards	3.3-7
Table 3.3-2: State and National Attainment Status	3.3-8
Table 3.3-3 SJVAB Ambient Air Quality Monitoring Data Summary - Ozone	3.3-9
Table 3.3-4 SJVAB Ambient Air Quality Monitoring Data Summary - PM _{2.5}	3.3-9
Table 3.3-5: SJVAB Ambient Air Quality Monitoring Data Summary - PM ₁₀	3.3-9
Table 3.3-6: Ambient Air Quality Monitoring Data (Stockton – Hazelton Street)	3.3-10
Table 3.3-7: Ambient Air Quality Monitoring Data (Tracy – Airport)	3.3-10

Table 3.3-8: Operational Buildout Generated Emissions	3.3-20
Table 3.3-9: With Bridge Alternative Operational Buildout Generated Emissions.....	3.3-23
Table 3.3-10: General Plan 2035 Alternative Operational Buildout Generated Emissions	3.3-24
Table 3.3-11: Reduced Project Alternative Operational Buildout Generated Emissions	3.3-25
Table 3.3-12: Reduced Intensity/Density Alternative Operational Buildout Generated Emissions	3.3-27
Table 3.3-13: Construction Phase	3.3-29
Table 3.3-14: Off-road Equipment	3.3-29
Table 3.3-15: Construction Emissions in Tons per Year (Unmitigated)	3.3-30
Table 3.3-16: With Bridge Alternative Construction Emissions (Unmitigated)	3.3-31
Table 3.3-17: General Plan 2035 Alternative Construction Emissions (Unmitigated)	3.3-32
Table 3.3-18: Reduced Project Alternative Construction Emissions (Unmitigated)	3.3-33
Table 3.3-19: Reduced Intensity/Density Alternative Construction Emissions (Unmitigated)	3.3-34
Table 3.3-20: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses	3.3-41
Table 3.4-1: USDA Soil Series Information.....	3.4-5
Table 3.4-2: Special-Status Plant Species Which May Occur in Project Area	3.4-8
Table 3.4-3: Special-Status Wildlife and Fish Species Which May Occur in Project Area.....	3.4-10
Table 3.4-4: Wetland Delineation Results	3.4-43
Table 3.6-1: Project Site Soils	3.6-2
Table 3.6-2: Fault Activity Rating	3.6-3
Table 3.6-3: Modified Mercalli Intensity Scale for Earthquakes.....	3.6-4
Table 3.7-1: City of Stockton Community GHG Inventories: 1990 Emissions Backcast, 2005 Baseline, and 202 BAU Forecast	3.7-7
Table 3.7-2: Year 2020 Operational GHG Emissions (Mitigated Metric Tons/Yr).....	3.7-19
Table 3.7-3: Baseline 2005 Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-20
Table 3.7-4: Construction GHG Emissions (Unmitigated Metric Tons/Yr).....	3.7-31
Table 3.7-5: Year 2020 Operational GHG Emissions (Unmitigated Metric Tons/Yr)	3.7-32
Table 3.7-6: Year 2020 Operational GHG Emissions (Mitigated Metric Tons/Yr).....	3.7-32
Table 3.7-7: Baseline 2005 Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-33
Table 3.7-8: With Bridge Alternative Construction GHG Emissions (Mitigated Metric Tons/Yr)	3.7-36
Table 3.7-9: With Bridge Alternative Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-36
Table 3.7-10: General Plan 2035 Alternative Construction GHG Emissions (Mitigated Metric Tons/Yr)	3.7-37
Table 3.7-11: General Plan 2035 Alternative Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-38
Table 3.7-12: Reduced Project Alternative Construction GHG Emissions (Mitigated Metric Tons/Yr)	3.7-39
Table 3.7-13: Reduced Project Alternative Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-40

Table 3.7-14: Reduced Intensity/Density Alternative Construction GHG Emissions (Mitigated Metric Tons/Yr)	3.7-41
Table 3.7-15: Reduced Intensity/Density Alternative Operational GHG Emissions (Mitigated Metric Tons/Yr)	3.7-42
Table 3.7-16: Natural Gas Use and GHG Emissions by Land Use (Operational Year)	3.7-48
Table 3.7-17: Electricity Use and GHG Emissions by Land Use (Unmitigated Operational Year).....	3.7-48
Table 3.7-18: On-Road Mobile Fuel Generated by Project Construction Activities – By Phase	3.7-49
Table 3.7-19: With Bridge Alternative Natural Gas Use and GHG Emissions by Land Use (Mitigated Operational Year)	3.7-52
Table 3.7-20: With Bridge Alternative Electricity Use and GHG Emissions by Land Use (Mitigated Metric Tons/Yr)	3.7-52
Table 3.7-21: General Plan 2035 Alternative Natural Gas Use and GHG Emissions by Land Use (Mitigated Operational Year)	3.7-53
Table 3.7-22: General Plan 2035 Alternative Electricity Use and GHG Emissions by Land Use (Mitigated Metric Tons/Yr)	3.7-53
Table 3.7-23: Reduced Project Alternative Natural Gas Use and GHG Emissions by Land Use (Mitigated Operational Year)	3.7-54
Table 3.7-24: Reduced Project Alternative Electricity Use and GHG Emissions by Land Use (Mitigated Metric Tons/Yr)	3.7-54
Table 3.7-25: Reduced Intensity/Density Alternative Natural Gas Use and GHG Emissions by Land Use (Mitigated Operational Year)	3.7-55
Table 3.7-26: Reduced Intensity/Density Alternative Electricity Use and GHG Emissions by Land Use (Mitigated Metric Tons/Yr).....	3.7-55
Table 3.8-1: NRCS Soil Series Information	3.8-2
Table 3.8-3: GeoTracker Hazardous Material Release Sites Within 1.5 Miles of Project Area..	3.8-6
Table 3.9-1. State of California Watershed Hierarchy Naming Convention	3.9-3
Table 3.9-2: Hydrologic Areas/Subareas.....	3.9-3
Table 3.9-3: Amount of Groundwater Pumped in Stockton From 2011-2015 (AFY).....	3.9-6
Table 3.9-4: Project Site Soils.....	3.9-29
Table 3.10-1: Population Growth.....	3.10-2
Table 3.10-2: Housing Unit Growth	3.10-3
Table 3.10-3: Buildout Comparison	3.10-20
Table 3.11-1: Typical Noise Levels	3.11-3
Table 3.11-2: Summary of Existing Background Noise Measurement Data	3.11-5
Table 3.11-3: Existing Traffic Noise Levels at a Distance of 100 Feet	3.11-6
Table 3.11-4: Existing UPRR Railroad Noise Levels	3.11-7
Table 3.11-5: Existing Industrial Noise Levels	3.11-7
Table 3.11-6: Maximum Allowable Ambient Noise Exposure by Land Use	3.11-9
Table 3.11-7: Exterior Hourly Noise Level Standards for Stationary Noise Sources	3.11-10
Table 3.11-8: Effects of Vibration on People and Buildings.....	3.11-11

Table 3.11-9: Existing Approved Project and Cumulative Traffic Noise Levels (Proposed Project)	3.11-14
Table 3.11-10: Existing Approved Project and Cumulative Traffic Noise Levels (No Build Alternative)	3.11-16
Table 3.11-11: Existing Approved Project and Cumulative Traffic Noise Levels (With Bridge Alternative)	3.11-18
Table 3.11-12: Existing Approved Project and Cumulative Traffic Noise Levels (General Plan 2035 Alternative).....	3.11-20
Table 3.11-13: Existing Approved Project and Cumulative Traffic Noise Levels (Reduced Project Alternative).....	3.11-22
Table 3.11-14: Existing Approved Project and Cumulative Traffic Noise Levels (Reduced Intensity/Density Alternative)	3.11-24
Table 3.11-15: Construction Equipment Noise.....	3.11-25
Table 3.11-16: Vibration Levels for Construction Equipment	3.11-30
Table 3.11-17: Cumulative + Project Transportation Noise Levels at Proposed Residential Uses.....	3.11-33
Table 3.11-18: Cumulative + With Bridge Alternative Transportation Noise Levels at Residential Uses	3.11-35
Table 3.11-19: Cumulative + General Plan 2035 Alternative Transportation Noise Levels at Residential Uses	3.11-35
Table 3.11-20: Cumulative + Reduced Project Alternative Transportation Noise Levels at Residential Uses	3.11-36
Table 3.11-21: Cumulative + Reduced Intensity/Density Alternative Transportation Noise Levels at Residential Uses	3.11-37
Table 3.11-22: Mitigated Railroad Noise Levels	3.11-40

VOLUME II

Tables	Page Numbers
Table 3.12-1: Stockton Crime Statistics (2013-2015).....	3.12-4
Table 3.12-2: Fire Stations, Equipment, and Services.....	3.12-5
Table 3.12-3: City of Stockton School Inventory, Enrollment, and Capacity	3.12-8
Table 3.12-4: City of Stockton Park Standards	3.12-16
Table 3.12-5: Proposed Project Student Generation (Without School Site)	3.12-24
Table 3.12-6: Proposed Project Student Generation (With School Site).....	3.12-24
Table 3.12-7: With Bridge Alternative Student Generation (Without School Site)	3.12-26
Table 3.12-8: With Bridge Alternative Student Generation (With School Site).....	3.12-27
Table 3.12-9: General Plan 2035 Alternative Student Generation	3.12-28
Table 3.12-10: Reduced Project Alternative Student Generation (Without School Site).....	3.12-29
Table 3.12-11: Reduced Project Alternative Student Generation (With School Site)	3.12-29
Table 3.12-12: Reduced Intensity/Density Alternative Student Generation (Without School Site)	3.12-31

Table 3.12-13: Reduced Intensity/Density Alternative Student Generation (With School Site).....	3.12-31
Table 3.13-1: Level of Service Definitions - Intersections.....	3.13-8
Table 3.13-2: City of Stockton General Plan Roadway Segment Level of Service Criteria.....	3.13-10
Table 3.13-3: Level of Service Criteria for Freeway Ramp Merge and Diverge Areas	3.13-11
Table 3.13-4: Comparison of Analysis Scenarios	3.13-16
Table 3.13-5: Roadway Segment Level of Service – Existing Conditions	3.13-21
Table 3.13-6: Intersection Level of Service – Existing Conditions.....	3.13-24
Table 3.13-7: Intersection Level of Service – Existing Conditions with Recommended Improvements	3.13-26
Table 3.13-8: Roadway Segment Level of Service – Existing Conditions with Recommended Improvements	3.13-27
Table 3.13-9: State Route 99 Ramp Merge and Diverge Level of Service – Existing Conditions	3.13-28
Table 3.13-10: Trip Generation Rates for Tra Vigne Project.....	3.13-29
Table 3.13-11: Trip Generation Estimates for Tra Vigne Project.....	3.13-30
Table 3.13-12: Trip Generation Rates for No Build Alternative.....	3.13-31
Table 3.13-13: Trip Generation Estimates for No Build Alternative	3.13-31
Table 3.13-14: Trip Generation Rates for With Bridge Alternative	3.13-31
Table 3.13-15: Trip Generation Estimates for With Bridge Alternative.....	3.13-32
Table 3.13-16: Trip Generation Rates for General Plan 2035 Alternative	3.13-32
Table 3.13-17: Trip Generation Estimates for General Plan 2035 Alternative	3.13-33
Table 3.13-18: Trip Generation Rates for Reduced Project Alternative	3.13-33
Table 3.13-19: Trip Generation Estimates for Reduced Project Alternative	3.13-34
Table 3.13-20: Trip Generation Rates for Reduced Intensity/Density Alternative	3.13-34
Table 3.13-21: Trip Generation Estimates for Reduced Intensity/Density Alternative	3.13-34
Table 3.13-22: Trip Distribution Percentages	3.13-35
Table 3.13-23: Roadway Segment Level of Service – EPAP No Project Conditions	3.13-43
Table 3.13-24: Intersection Level of Service – EPAP No Project Conditions.....	3.13-46
Table 3.13-25: Intersection Level of Service – EPAP No Project Conditions With Recommended Improvements.....	3.13-48
Table 3.13-26: Roadway Segment Level of Service – EPAP No Project Conditions With Recommended Improvements.....	3.13-50
Table 3.13-27: State Route 99 Ramp Merge and Diverge Level of Service – EPAP No Project Conditions	3.13-51
Table 3.13-28: Roadway Segment Level of Service – EPAP Plus Project Conditions	3.13-52
Table 3.13-29: Intersection Level of Service – EPAP Plus Project Conditions.....	3.13-53
Table 3.13-30: Intersection Level of Service – EPAP Plus Project Conditions With Mitigation Measures	3.13-56
Table 3.13-31: Roadway Segment Level of Service – EPAP Plus Project Conditions With Mitigation Measures	3.13-58
Table 3.13-32: Roadway Segment Level of Service – EPAP Plus Project Conditions With Mitigation Measures	3.13-60

Table 3.13-33: State Route 99 Ramp Merge and Diverge Level of Service – EPAP Plus Project Conditions	3.13-62
Table 3.13-34: Roadway Segment Level of Service – EPAP Plus With Bridge Alternative Conditions	3.13-65
Table 3.13-35: Intersection Level of Service – EPAP Plus With Bridge Alternative Conditions	3.13-65
Table 3.13-36: Intersection Level of Service – EPAP Plus With Bridge Alternative Conditions With Mitigation Measures	3.13-68
Table 3.13-37: Roadway Segment Level of Service – EPAP Plus With Bridge Alternative Conditions With Mitigation Measures	3.13-70
Table 3.13-38: State Route 99 Ramp Merge and Diverge Level of Service – EPAP Plus With Bridge Alternative Conditions	3.13-72
Table 3.13-39: Roadway Segment Level of Service – EPAP Plus General Plan 2035 Alternative Conditions	3.13-75
Table 3.13-40: Intersection Level of Service – EPAP Plus General Plan 2035 Alternative Conditions	3.13-75
Table 3.13-41: Intersection Level of Service – EPAP Plus General Plan 2035 Alternative Conditions With Mitigation Measures	3.13-79
Table 3.13-42: Roadway Segment Level of Service – EPAP Plus General Plan 2035 Alternative Conditions With Mitigation Measures	3.13-84
Table 3.13-43: State Route 99 Ramp Merge and Diverge Level of Service – EPAP Plus General Plan 2035 Alternative Conditions	3.13-85
Table 3.13-44: Roadway Segment Level of Service – EPAP Plus Reduced Project Alternative Conditions	3.13-88
Table 3.13-45: Intersection Level of Service – EPAP Plus Reduced Project Alternative Conditions	3.13-89
Table 3.13-46: Intersection Level of Service – EPAP Plus Reduced Project Alternative Conditions With Mitigation Measures	3.13-92
Table 3.13-47: Roadway Segment Level of Service – EPAP Plus Reduced Project Alternative Conditions With Mitigation Measures	3.13-93
Table 3.13-48: State Route 99 Ramp Merge and Diverge Level of Service – EPAP Plus Reduced Project Alternative Conditions	3.13-96
Table 3.13-49: Roadway Segment Level of Service – EPAP Plus Reduced Intensity/Density Alternative Conditions	3.13-98
Table 3.13-50: Intersection Level of Service – EPAP Plus Reduced Intensity/Density Alternative Conditions	3.13-99
Table 3.13-51: Intersection Level of Service – EPAP Plus Reduced Intensity/Density Alternative Conditions With Mitigation Measures	3.13-102
Table 3.13-52: Roadway Segment Level of Service – EPAP Plus Reduced Intensity/Density Alternative Conditions With Mitigation Measures	3.13-103
Table 3.13-53: State Route 99 Ramp Merge and Diverge Level of Service – EPAP Plus Reduced Intensity/Density Alternative Conditions	3.13-106
Table 3.13-54: Roadway Segment Level of Service – Cumulative No Project Conditions ...	3.13-109

Table 3.13-55: Intersection Level of Service – Cumulative No Project Conditions.....	3.13-110
Table 3.13-56: Intersection Level of Service – Cumulative No Project Conditions With Recommended Improvements.....	3.13-112
Table 3.13-57: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative No Project Conditions	3.13-117
Table 3.13-58: Roadway Segment Level of Service – Cumulative Plus Project Conditions .	3.13-118
Table 3.13-59: Intersection Level of Service – Cumulative Plus Project Conditions.....	3.13-118
Table 3.13-60: Intersection Level of Service – Cumulative Plus Project Conditions With Mitigation Measures	3.13-122
Table 3.13-61: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative Plus Project Conditions	3.13-124
Table 3.13-62: Project Site Access – Adequacy of Queuing Distance.....	3.13-125
Table 3.13-63: Roadway Segment Level of Service – Cumulative Plus No Build Alternative Conditions	3.13-126
Table 3.13-64: Intersection Level of Service – Cumulative Plus No Build Alternative Conditions	3.13-126
Table 3.13-65: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative Plus No Build Alternative Conditions	3.13-130
Table 3.13-66: Roadway Segment Level of Service – Cumulative Plus With Bridge Alternative Conditions	3.13-131
Table 3.13-67: Intersection Level of Service – Cumulative Plus With Bridge Alternative Conditions	3.13-132
Table 3.13-68: Intersection Level of Service – Cumulative Plus With Bridge Alternative Conditions with Mitigation Measures.....	3.13-134
Table 3.13-69: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative Plus With Bridge Alternative Conditions.....	3.13-136
Table 3.13-70: Roadway Segment Level of Service – Cumulative Plus Reduced Project Alternative Conditions	3.13-138
Table 3.13-71: Intersection Level of Service – Cumulative Plus Reduced Project Alternative Conditions	3.13-138
Table 3.13-72: Intersection Level of Service – Cumulative Plus Reduced Project Alternative Conditions with Mitigation Measures.....	3.13-141
Table 3.13-73: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative Plus Reduced Project Alternative Conditions	3.13-143
Table 3.13-74: Roadway Segment Level of Service – Cumulative Plus Reduced Intensity/Density Alternative Conditions	3.13-144
Table 3.13-75: Intersection Level of Service – Cumulative Plus Reduced Intensity/Density Alternative Conditions	3.13-145
Table 3.13-76: Intersection Level of Service – Cumulative Plus Reduced Intensity/Density Alternative Conditions with Mitigation Measures.....	3.13-148
Table 3.13-76: State Route 99 Ramp Merge and Diverge Level of Service – Cumulative Plus Reduced Intensity/Density Alternative Conditions	3.13-150
Table 3.14-1: Effluent Limitations.....	3.14-4

Table 3.14-2: Projected Wastewater Flows and Loads Generated in the Master Plan	
Service Area at Buildout Conditions	3.14-4
Table 3.14-3: Project Total Average Annual Water Demand.....	3.14-21
Table 3.14-4: Unit Water Demands	3.14-22
Table 3.14-5: City of Stockton Total Water Demand Projection	3.14-22
Table 3.14-6: Actual 2015 Water Supply for the City of Stockton (AFY)	3.14-23
Table 3.14-7: Summary of Projected Water Supply During Hydrologic Normal, Single-Dry, and Multi-Dry Years for City of Stockton 2040 (AFY).....	3.14-27
Table 3.14-8: City of Stockton – Normal Year Projected Water Supply and Demand Comparison (AFY)	3.14-28
Table 3.14-9: With Bridge Alternative – Total Average Annual Water Demand	3.14-36
Table 3.14-10: General Plan 2035 Alternative – Total Average Annual Water Demand.....	3.14-37
Table 3.14-11: Reduced Project Alternative – Total Average Annual Water Demand.....	3.14-38
Table 3.14-12: Reduced Intensity/Density Alternative – Total Average Annual Water Demand.....	3.14-39
Table 3.14-13: City of Stockton Landfill Summary.....	3.14-56
Table 3.14-14: City of Stockton Waste Disposal Rate Targets (Pounds/Day)	3.14-56
Table 4.0-1: Future Population and Housing Projections	4.0-2
Table 4.0-2: Designated Land Uses Under the City’s Preferred Land Use Alternative	4.0-3
Table 5.0-1: Alternatives Comparison	5.0-4
Table 5.0-2: Comparison of Alternative Project Impacts to the Proposed Project	5.0-8

VOLUME I

Figures	Page Numbers
Figure 2-1: Regional Context/Location	2.0-13
Figure 2-2: Project Vicinity.....	2.0-15
Figure 2-3: APN Map.....	2.0-17
Figure 2-4: USGS Topographic Map	2.0-19
Figure 2-5: Aerial View of Project Site	2.0-21
Figure 2-6: General Plan Land Use Designations (City of Stockton)	2.0-23
Figure 2-7a: General Plan Land Use Designations (San Joaquin County)	2.0-25
Figure 2-7b: Existing Zoning (San Joaquin County).....	2.0-27
Figure 2-8a: Site Plan	2.0-29
Figure 2-8b: Without School Site Plan	2.0-31
Figure 2-8c: Commercial Site Plan	2.0-33
Figure 2-9: Proposed General Plan Land Use Designations.....	2.0-35
Figure 2-10: Pre-Zoning Designations.....	2.0-37
Figure 2-11: Water Exhibit	2.0-39
Figure 2-12: Sewer Exhibit	2.0-41
Figure 2-13: Storm Water Exhibit	2.0-43
Figure 3.2-1: Project Site Farmland Classifications.....	3.2-25
Figure 3.2-2: Project Site Soils	3.2-27

Figure 3.4-1: Land Cover Types	3.4-59
Figure 3.4-2: California Natural Diversity Database: 1-Mile Radius.....	3.4-61
Figure 3.4-3: California Natural Diversity Database: 10-Mile Radius	3.4-63
Figure 3.6-1: Known Faults in Project Area.....	3.6-27
Figure 3.6-2: Expansive Soils Map.....	3.6-29
Figure 3.9-1: San Joaquin River Watershed	3.9-47
Figure 3.9-2: Watersheds and Hydrography.....	3.9-49
Figure 3.9-3: Project Site FEMA Flood Insurance Rate Map	3.9-51
Figure 3.9-4: Dam Inundation Areas.....	3.9-53
Figure 3.11-1: Location & Measurement Sites	3.11-49

VOLUME II

Figures	Page Numbers
Figure 3.13-1: Regional Context/Location	3.13-151
Figure 3.13-2: Project Vicinity.....	3.13-153
Figure 3.13-3: Site Plan	3.13-155
Figure 3.13-4: Commercial Site Plan.....	3.13-157
Figure 3.13-5: Existing and Future Bikeway Plan	3.13-159
Figure 3.13-6: 2035 Stockton General Plan Future Transit Network.....	3.13-161
Figure 3.13-7: Roadway Network and Study Intersection – Existing and Existing Plus Approved Project Conditions.....	3.13-163
Figure 3.13-8: Roadway Network and Study Intersection – Long-Term and Future Cumulative Conditions	3.13-165
Figure 3.13-9: Roadway Network and Study Intersection – Project Site Access Locations.	3.13-167
Figure 3.13-10a: Existing Conditions Intersection Traffic Volumes and Lane Configurations.....	3.13-169
Figure 3.13-10b: Existing Conditions Intersection Traffic Volumes and Lane Configurations	3.13-171
Figure 3.13-10c: Existing Conditions Intersection Traffic Volumes and Lane Configurations	3.13-173
Figure 3.13-11: EPAP Without Bear Creek Bridge Trip Distribution Percentages	3.13-175
Figure 3.13-12: EPAP With Bear Creek Bridge Trip Distribution Percentages	3.13-177
Figure 3.13-13: Cumulative Without Bear Creek Bridge Trip Distribution Percentages	3.13-179
Figure 3.13-14: Cumulative With Bear Creek Bridge Trip Distribution Percentages	3.13-181
Figure 3.13-15a: Existing Plus Approved Projects No Proposed Project Intersection Traffic Volumes and Lane Configurations	3.13-183
Figure 3.13-15b: Existing Plus Approved Projects No Proposed Project Intersection Traffic Volumes and Lane Configurations	3.13-185
Figure 3.13-15c: Existing Plus Approved Projects No Proposed Project Intersection Traffic Volumes and Lane Configurations	3.13-187
Figure 3.13-16a: Tra Vigne Project Related Trips (Existing Plus Approved Projects Background)	3.13-189

Figure 3.13-16b: Tra Vigne Project Related Trips (Existing Plus Approved Projects Background)	3.13-191
Figure 3.13-16c: Tra Vigne Project Related Trips (Existing Plus Approved Projects Background)	3.13-193
Figure 3.13-16d: Tra Vigne Project Related Trips (Existing Plus Approved Projects Background)	3.13-195
Figure 3.13-17a: Existing Plus Approved Projects Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations	3.13-197
Figure 3.13-17b: Existing Plus Approved Projects Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations	3.13-199
Figure 3.13-17c: Existing Plus Approved Projects Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations	3.13-201
Figure 3.13-17d: Existing Plus Approved Projects Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations	3.13-203
Figure 3.13-18a: With Bridge Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-205
Figure 3.13-18b: With Bridge Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-207
Figure 3.13-18c: With Bridge Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-209
Figure 3.13-18d: With Bridge Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-211
Figure 3.13-19a: Existing Plus Approved Projects Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-213
Figure 3.13-19b: Existing Plus Approved Projects Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-215
Figure 3.13-19c: Existing Plus Approved Projects Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-217
Figure 3.13-19d: Existing Plus Approved Projects Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-219
Figure 3.13-20a: General Plan 2035 Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-221
Figure 3.13-20b: General Plan 2035 Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-223
Figure 3.13-20c: General Plan 2035 Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-225
Figure 3.13-21a: Existing Plus Approved Projects Plus General Plan 2035 Alternative Intersection Traffic Volumes and Lane Configurations	3.13-227
Figure 3.13-21b: Existing Plus Approved Projects Plus General Plan 2035 Alternative Intersection Traffic Volumes and Lane Configurations	3.13-229
Figure 3.13-21c: Existing Plus Approved Projects Plus General Plan 2035 Alternative Intersection Traffic Volumes and Lane Configurations	3.13-231

Figure 3.13-22a: Reduced Project Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-233
Figure 3.13-22b: Reduced Project Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-235
Figure 3.13-22c: Reduced Project Alternative Project Related Trips (Existing Plus Approved Projects Background)	3.13-237
Figure 3.13-23a: Existing Plus Approved Projects Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-239
Figure 3.13-23b: Existing Plus Approved Projects Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-241
Figure 3.13-23c: Existing Plus Approved Projects Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-243
Figure 3.13-24a: Reduced Intensity/Density Alternative Project Related Trips (Existing Plus Approved Projects Background).....	3.13-245
Figure 3.13-24b: Reduced Intensity/Density Alternative Project Related Trips (Existing Plus Approved Projects Background).....	3.13-247
Figure 3.13-24c: Reduced Intensity/Density Alternative Project Related Trips (Existing Plus Approved Projects Background).....	3.13-249
Figure 3.13-25a: Existing Plus Approved Projects Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-251
Figure 3.13-25b: Existing Plus Approved Projects Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-253
Figure 3.13-25c: Existing Plus Approved Projects Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-255
Figure 3.13-26a: General Plan 2035 Alternative Project Related Trips (Cumulative Background)	3.13-257
Figure 3.13-26b: General Plan 2035 Alternative Project Related Trips (Cumulative Background)	3.13-259
Figure 3.13-26c: General Plan 2035 Alternative Project Related Trips (Cumulative Background)	3.13-261
Figure 3.13-27a: Cumulative No Project Intersection Traffic Volumes and Lane Configurations.....	3.13-263
Figure 3.13-27b: Cumulative No Project Intersection Traffic Volumes and Lane Configurations.....	3.13-265
Figure 3.13-27c: Cumulative No Project Intersection Traffic Volumes and Lane Configurations.....	3.13-267
Figure 3.13-28a: Tra Vigne Project Related Trips (Cumulative Background).....	3.13-269
Figure 3.13-28b: Tra Vigne Project Related Trips (Cumulative Background)	3.13-271
Figure 3.13-28c: Tra Vigne Project Related Trips (Cumulative Background).....	3.13-273
Figure 3.13-28d: Tra Vigne Project Related Trips (Cumulative Background)	3.13-275
Figure 3.13-29a: Cumulative Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations.....	3.13-277

Figure 3.13-29b: Cumulative Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations.....	3.13-279
Figure 3.13-29c: Cumulative Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations.....	3.13-281
Figure 3.13-29d: Cumulative Plus Tra Vigne Intersection Traffic Volumes and Lane Configurations.....	3.13-283
Figure 3.13-30a: No Build Alternative Project Related Trips (Cumulative Background)	3.13-285
Figure 3.13-30b: No Build Alternative Project Related Trips (Cumulative Background)	3.13-287
Figure 3.13-30c: No Build Alternative Project Related Trips (Cumulative Background)	3.13-289
Figure 3.13-31a: Cumulative Plus No Build Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-291
Figure 3.13-31b: Cumulative Plus No Build Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-293
Figure 3.13-31c: Cumulative Plus No Build Alternative Intersection Traffic Volumes and Lane Configurations.....	3.13-295
Figure 3.13-32a: With Bridge Alternative Project Related Trips (Cumulative Background)	3.13-297
Figure 3.13-32b: With Bridge Alternative Project Related Trips (Cumulative Background)	3.13-299
Figure 3.13-32c: With Bridge Alternative Project Related Trips (Cumulative Background)	3.13-301
Figure 3.13-32d: With Bridge Alternative Project Related Trips (Cumulative Background)	3.13-303
Figure 3.13-33a: Cumulative Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-305
Figure 3.13-33b: Cumulative Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-307
Figure 3.13-33c: Cumulative Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-309
Figure 3.13-33d: Cumulative Plus With Bridge Alternative Intersection Traffic Volumes and Lane Configurations	3.13-311
Figure 3.13-34a: Reduced Project Alternative Project Related Trips (Cumulative Background)	3.13-313
Figure 3.13-34b: Reduced Project Alternative Project Related Trips (Cumulative Background)	3.13-315
Figure 3.13-34c: Reduced Project Alternative Project Related Trips (Cumulative Background)	3.13-317
Figure 3.13-35a: Cumulative Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-319
Figure 3.13-35b: Cumulative Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-321
Figure 3.13-35c: Cumulative Plus Reduced Project Alternative Intersection Traffic Volumes and Lane Configurations	3.13-323

Figure 3.13-36a: Reduced Intensity/Density Alternative Project Related Trips (Cumulative Background)	3.13-325
Figure 3.13-36b: Reduced Intensity/Density Alternative Project Related Trips (Cumulative Background)	3.13-327
Figure 3.13-36c: Reduced Intensity/Density Alternative Project Related Trips (Cumulative Background)	3.13-329
Figure 3.13-37a: Cumulative Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations	3.13-331
Figure 3.13-37b: Cumulative Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations	3.13-333
Figure 3.13-37c: Cumulative Plus Reduced Intensity/Density Alternative Intersection Traffic Volumes and Lane Configurations	3.13-335
Figure 5-1: With Bridge and School Alternative Site Plan.....	5.0-25
Figure 5-2: With Bridge and Without School Alternative Site Plan	5.0-27

VOLUME III

Appendices

Appendix A: Notice of Preparation and Comments
Appendix B: Annexation Legal Description
Appendix C: Air Quality and Greenhouse Gas Modeling
Appendix D: Greenhouse Gas Reduction Plan and Analysis
Appendix E: Air Toxics Health Risk Studies
Appendix F: Biological Resources Assessment
Appendix G: Cultural Resources Information
Appendix H: Hazards and Hazardous Materials Studies and Reports
Appendix I: Water Supply Assessment
Appendix J: Noise Report
Appendix K: Traffic Data

ES.1 INTRODUCTION

The City of Stockton has determined that the Tra Vigne Development is a "Project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project which may have a significant impact on the environment. For the purposes of CEQA, the term "Project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

The EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of Project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the Notice of Preparation (NOP) were considered in preparing the analysis in this EIR.

ES.2 PROJECT DESCRIPTION

The Project site comprises approximately 318.82 acres of land bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. The Project site has been designed with two sub-planning areas (Tra Vigne West and Tra Vigne East). Figure 2-8a provides a conceptual site plan that illustrates the development of Tra Vigne West and Tra Vigne East with 1,413 residential units (995 Tra Vigne West and 418 Tra Vigne East), a 15.57 existing Industrial area, a 10.5-acre commercial area, 15.07 acres of park space, and 20.36 acres of open space, mainly located along Bear Creek.

The general components of the proposed Project include:

- 1. Tra Vigne East:** The proposed Project includes a large lot tentative map that would subdivide the Tra Vigne East (APN 120-02-15) property consistent with the proposed land uses. Tra Vigne East only proposes a large lot tentative map at this time, and it is estimated that 418 units would be developed under the proposed scenario. Within this portion of the Project site, approximately 15.57 acres of existing industrial land would be retained.
- 2. Tra Vigne West:** The proposed Project includes a large lot and small lot tentative map that would subdivide the Tra Vigne West property consistent with the proposed land uses. As shown on Figure 2-8a, the approximately 205-acre Tra Vigne West includes a detailed lot layout of 655 single family residential units. Residential lot sizes in the vesting tentative map range from 5,000 to 6,000 sf. Additionally, the Tra Vigne West site would include up to 340 High Density Residential (HDR) units on 11.7 acres to the east of the proposed commercial area. The commercial site is proposed to include a 70,000-sf grocery store,

22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room.

The proposed Project establishes a site for a 14.7-acre K-8 school to be developed by the Lodi Unified School District (LUSD). The development of an K-8 school at this site is the discretionary decision of the LUSD, and while the proposed Project has planned for a school at this location, it will be determined by LUSD at a later date through their decision-making process. If the LUSD decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation. Construction of homes in this location would increase the number of Low Density Residential (LDR) units by 90 units when compared to the proposed Project with the school site. The total combined units would increase from 1,413 under the proposed Project to 1,503 units under this variation.

ES.3 AREAS OF CONTROVERSY AND ISSUES RAISED DURING SCOPING

This Draft EIR addresses environmental impacts associated with the proposed Project that are known to the City of Stockton, were raised during the NOP process, or raised during preparation of the Draft EIR. This Draft EIR discusses potentially significant impacts associated with aesthetics and visual resources, agricultural resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions and climate change, hazards and hazardous materials, hydrology and water quality, land use and population, noise, public services and recreation, transportation and circulation, and utilities.

In March 2016, the City of Stockton released an NOP for a previous iteration of the proposed Tra Vigne Development Project. The City of Stockton received three written comment letters on the NOP for the 2016 iteration of the Project. A copy of the 2016 comment letters is provided in Appendix A of this Draft EIR. The commenting agencies are provided below.

- California Natural Resources Agency, Central Valley Flood Protection Board
- Central Valley Regional Water Quality Control Board
- California Department of Conservation, Division of Land Resource Protection

The City also held a public scoping meeting on March 16, 2016 for the 2016 iteration of the Project. No written or verbal comments were provided at the 2016 scoping meeting. Since the March 16, 2016 public scoping meeting, some changes to the Project design and development assumptions have occurred. Due to these changes that occurred after the NOP for the 2016 iteration of the Project was released, the City of Stockton held another public scoping meeting for the 2017 iteration of the Tra Vigne Development Project and released the 2017 NOP for another 30-day public review period. The second public scoping meeting was held on July 26, 2017. Verbal comments were provided by Roy Harper at the 2017 scoping meeting. The City of Stockton received 8 written comment letters on the NOP for the proposed Project during the 2017 review period. Additionally, one electronic comment letter on the NOP was received anonymously

without a signature or name on July 17, 2017. A copy of the letters is provided in Appendix A of this Draft EIR. The commenting agencies are provided below.

- California Natural Resources Agency, Central Valley Flood Protection Board
- Central Valley Regional Water Quality Control Board
- Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
- Native American Heritage Commission
- San Joaquin Council of Governments
- San Joaquin County Department of Public Works
- USACE, Sacramento District
- Waterloo Morada Fire District

The issues that were raised during the scoping period for the Project include:

- Traffic congestion and engineering;
- Potential water quality impacts associated with Bear Creek;
- Increased demand on public services;
- Agricultural conversion and mitigation.

ES.4 ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the Project or to the location of the Project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed Project. Three alternatives to the proposed Project were developed, based on input from City staff, the public during the NOP review period, and the technical analysis performed to identify the environmental effects of the proposed Project. Alternatives are described in detail in Chapter 5. The alternatives analyzed in this EIR include the following three alternatives in addition to the proposed Project.

- **No Build Alternative:** Under this alternative, development of the Project site would not occur, and the Project site would remain in its current condition.
- **With Bridge Alternative:** Under this alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. However, unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road. This alternative would result in the same number of HDR units as the proposed Project (340 units), and would reduce the number of LDR units from 1,073 under the proposed Project to 1,066 units, for a total of 1,406 units. This would result in a reduction of seven units when compared to the proposed Project. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project

to 15.37 acres. This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. If the LUSD decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation which would result in the construction of an additional 90 units in place of the school. Under this variation, the total residential units would increase from 1,406 to 1,496 units. The balance of the Project site would be developed as proposed under the Proposed Project. The environmental analysis of this alternative includes both the with and without school scenarios.

- **General Plan 2035 Alternative:** Under this alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the General Plan 2035. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. The balance of the Project site would be developed as proposed under the proposed Project. This alternative does not include dedication of a K-8 school site. This alternative includes construction of the bridge crossing over Bear Creek, which is currently reflected in the Circulation Element of the General Plan 2035. Based on the existing land use designations, the Project site would support approximately 15.7 acres of industrial use (406,937 sf), approximately 9.0 acres of commercial use (117,612 sf), 1,730 to 2,467 low density residential units, and 248 to 309 high density residential units. This alternative would result in 1,978 to 2,776 residential units (low and high density), which is 475 to 1,273 (without school site) to 565 to 1,363 (with school site) more units than under the proposed Project.
- **Reduced Project Alternative:** Under this alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This approximately 200.15-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of 90 single family residential units.
- **Reduced Intensity/Density Alternative:** Under this alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option

considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). This would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

The No Build Alternative would reduce impacts in 106 areas, increase impacts in zero areas, and would have equal impacts to the project in six areas. The With Bridge Alternative would reduce impacts in 27 areas, increase impacts in 20 areas, and would have equal impacts to the project in 66 areas. The General Plan 2035 Alternative would reduce impacts in zero areas, increase impacts in 51 areas, and would have equal impacts to the project in 61 areas. The Reduced Project Alternative would reduce impacts in 60 areas, increase impacts in three areas, and would have equal impacts to the project in 49 areas. The Reduced Intensity/Density Alternative would reduce impacts in 39 areas, increase impacts in three areas, and would have equal impacts to the project in 70 areas. In conclusion, the Reduced Project Alternative ranks higher than the proposed Project and the other alternatives, and is the Environmentally Superior Alternative.

ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations.

The environmental impacts of the proposed Project, the impact level of significance prior to mitigation, the proposed mitigation measures and/or adopted policies and standard measures that are already in place to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-1.

ES EXECUTIVE SUMMARY

TABLE ES-1: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
AESTHETICS			
Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character.	PS		SU
Impact 3.1-2: Project implementation may substantially damage scenic resources within a State Scenic Highway.	LS		--
Impact 3.1-3: Project implementation may result in light and glare impacts.	PS	Mitigation Measure 3.1-1: A lighting plan for all parcels shall be prepared prior to the approval of the Improvement Plans for each individual phase of development. The lighting plan shall demonstrate that the lighting systems and other exterior lighting throughout the residential, commercial, and open space portions of the Project site have been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. The lighting plan shall be submitted to the City of Stockton Community Development Department for review and approval.	LS
AGRICULTURAL RESOURCES			
Impact 3.2-1: The proposed Project would result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses.	PS	Mitigation Measure 3.2-1: Prior to the conversion of Important Farmland on the Project site, the Project applicant shall participate in the SIMSCP agricultural mitigation fee program by paying the established fees on a per-acre basis for the loss of Important Farmland.	SU

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ES-6

Draft Environmental Impact Report – Tra Vigne Development Project

EXECUTIVE SUMMARY

ES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.2-2: The proposed Project may conflict with existing zoning for agricultural use, or Williamson Act Contracts.	LS		--
Impact 3.2-3: The proposed Project may result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands.	LS		--
AIR QUALITY			
Impact 3.3-1: Project operation would conflict with or obstruct implementation of an applicable air quality plan.	PS		SU
Impact 3.3-2: Project operation would cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation.	PS	<p>Mitigation Measure 3.3-1: Prior to final approval of improvement plans, the Project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or Project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or Project component, the Project proponent shall incorporate mitigation measures into the proposed Project and demonstrate compliance with District Rule 9510 including payment of all fees.</p> <p>Mitigation Measure 3.3-2: Prior to the approval of improvement plans, the Project proponent shall incorporate the following features into the applicable Project plans (e.g. site, engineering, landscaping, etc.):</p> <ul style="list-style-type: none"> • Bus turnouts and transit improvements where requested by the San Joaquin RTD. • Continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets. 	SU

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<ul style="list-style-type: none"> Pavement and striping for bike lanes/paths. Street lighting along internal roadways and/or bike lanes/paths, sidewalks. Pedestrian signalization, signage and safety designs at signalized intersections. Shade trees to shade sidewalks in street-side landscaping areas. Shade trees to front yard. <p>Mitigation Measure 3.3-3: Prior to the approval of improvement plans, the Project proponent shall prepare and implement a transportation demand management (TDM) plan for the non-residential portions of the Project that includes, but is not limited to, the following measures subject to the review and approval of the City of Stockton:</p> <ul style="list-style-type: none"> Provide secure bicycle parking in conjunction with the non-residential portion of the Project. Provide on-site amenities that encourage alternative transportation modes such as locker, shower, and secure bike storage facilities. Coordinate SJCOC's Commute Connection Program. <p>Mitigation Measure 3.3-4: Prior to the approval of building plans, the Project proponent shall prepare and implement the following additional mitigation measures, as feasible:</p> <ul style="list-style-type: none"> Require the utilization of Energy Star-compliant roof materials on Project buildings. Require Project residences to be designed to take advantage of sun and to maximize shade. Require developers to offer buyers optional packages that incorporate passive solar design and solar heaters. Prescribe limits for idling time for commercial vehicles that are consistent with CARB standards, including delivery and construction vehicles. Require developers to install energy-efficient appliances and equipment, where applicable. Require developers to install water-efficient appliances, toilets, faucets, and 	

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ES-8

Draft Environmental Impact Report – Tra Vigne Development Project

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>shower heads, where applicable.</p> <ul style="list-style-type: none"> Require developers to offer buyers optional packages that incorporate photovoltaic roofing tiles. <p>Mitigation Measure 3.3-5: Prior to and during Project construction activities, the Project proponent shall provide prospective buyers of any of the single-family residential units the option to pre-install rooftop solar.</p> <p>Mitigation Measure 3.3-6: Prior to Project operation, the Project proponent shall install the requisite on-site electrical infrastructure necessary to allow for hook-ups for electric plug-in vehicles.</p>	
Impact 3.3-3: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation.	PS	Mitigation Measure 3.3-5: The Project proponent shall ensure that the Project complies with all applicable SIVAPCD rules and regulations.	LS
Impact 3.3-4: The proposed Project would not result in carbon monoxide hotspot impacts.	LS		--
Impact 3.3-5: The proposed Project would not result in public exposure to toxic air contaminants.	LS		--
Impact 3.3-6: The proposed Project would not result in exposure to odors.	LS		--

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
BIOLOGICAL RESOURCES			
Impact 3.4-1: The proposed Project has the potential to have a direct or indirect effect on special-status invertebrate species.	LS		--
Impact 3.4-2: The proposed Project has the potential to have direct or indirect effects on special-status reptile and amphibian species.	PS	Mitigation Measure 3.4-1: Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SIMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed Project.	LS
Impact 3.4-3: The proposed Project has the potential to have direct or indirect effects on special-status bird species.	PS	Mitigation Measure 3.4-2: If construction activities occur during the avian breeding season (March 1 – August 31) then the Project proponent shall conduct pre-construction surveys to prevent impacts to nesting birds. No more than 15 days prior to the start of construction a bird survey shall be conducted by a qualified biologist to identify any active nests within the Project site. If construction stops for a period of 15 days or more during the avian breeding season then an additional bird survey shall be conducted. The biologist will conduct a survey on the Project site for all special-status birds protected by the Federal and State ESA, MBTA and CFGC, including but not limited to those that are documented within a ten-mile radius of the Project site and are known to nest in the region. The biologist shall map all nests that are within, and visible from, the Project site. If nests are identified, the biologist shall develop buffer zones around active nests as deemed appropriate in coordination with the CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice per week and a report submitted to the City and CDFW monthly.	LS

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EXECUTIVE SUMMARY

ES

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 3.4-4: The proposed Project has the potential to result in direct or indirect effects on special-status mammal species.	LS		--
Impact 3.4-5: The proposed Project has the potential for direct or indirect effects on candidate, sensitive, or special-status plant species.	LS		--
Impact 3.4-6: Effects on Protected Wetlands and Jurisdictional Waters.	LS		--
Impact 3.4-7: Adverse Effects on Riparian Habitat or Sensitive Natural Community.	PS	Mitigation Measure 3.4-3: Prior to installation of the storm drainage outfall, compensate/replace for any disturbance to riparian habitat along Bear Creek in association with the storm drainage outfall. Compensation/replacement ratios shall be at a minimum ratio of 1 acre restored, created, and/or preserved for every 1 acre of riparian disturbed. The acreage impacted shall be calculated based on the final design of the storm drainage outfall. Compensation may comprise onsite restoration/creation, off-site restoration, preservation, or mitigation credits (or a combination of these elements). The applicant shall provide documentation of compliance to the City of Stockton.	LS
Impact 3.4-8: Interference with the Movement of Native Fish or Wildlife Species or with Established Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites.	LS		--
Impact 3.4-9: Conflict with an Adopted Habitat Conservation Plan.	LS		--

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE										
Impact 3.4-10: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	PS	<p>Mitigation Measure 3.4-4: The Project proponent shall if possible avoid removal of the three Heritage Oak trees located within the Project site. The Project proponent shall implement remedial pruning or other recommendations set forth in the Arborist's report for any Heritage Tree that will be retained so as to preserve the tree and protect the general public. Subdivision and site improvement plans shall be subject to the review of the City Parks Facility Planner/Landscape Architect (Public Works Department).</p> <p>Mitigation Measure 3.4-5: For the Heritage Oak trees that must be removed, a permit shall be obtained pursuant to the Stockton Heritage Tree Ordinance. Replacement oak trees shall be planted on the same site as the removed tree if at all possible; otherwise, an alternate site shall be selected by the applicant and submitted to the City Parks Facility Planner/Landscape Architect (Public Works) for approval. The size of replacement trees shall be based on the original trees' retention value (as determined by a certified Arborist retained by the owner/developer) as follows:</p> <table><tr><td><u>Retention Value</u></td><td><u>Replacement Oak Size</u></td></tr><tr><td>Low</td><td>One 15-gallon</td></tr><tr><td>Moderate</td><td>Two 15-gallon</td></tr><tr><td>Moderate-high</td><td>Five 15-gallon</td></tr><tr><td>High</td><td>Eight 15-gallon</td></tr></table> <p>The Project proponent shall provide the resources necessary to ensure that the newly planted replacement trees become established in their new location. The Project proponent shall retain the services of a certified Arborist for a period of three years. Site inspections will be made by the Arborist weekly within the first six months of planting and monthly for the remaining thirty months. The Arborist's function will be to monitor the condition of the newly planted trees and report to the City and Project proponent any trees that are in need of attention or replacement. The Project proponent shall be responsible for purchasing and planting any replacement trees deemed necessary by the Arborist over the three-year period. Any newly planted trees in need of attention, as so-deemed by the Arborist, shall be properly cared for by the Project proponent until the Arborist finds that</p>	<u>Retention Value</u>	<u>Replacement Oak Size</u>	Low	One 15-gallon	Moderate	Two 15-gallon	Moderate-high	Five 15-gallon	High	Eight 15-gallon	LS
<u>Retention Value</u>	<u>Replacement Oak Size</u>												
Low	One 15-gallon												
Moderate	Two 15-gallon												
Moderate-high	Five 15-gallon												
High	Eight 15-gallon												

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ES-12

Draft Environmental Impact Report – Tra Vigne Development Project

EXECUTIVE SUMMARY

ES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>they are in satisfactory condition.</p> <p>Mitigation Measure 3.4-6: Grading of the area that includes any Heritage Oak to be preserved shall be designed to preserve existing grade to the drip line surrounding the Heritage Tree, in order to enhance survivability. Prior to construction, a temporary barrier shall be placed around the drip line of any preserved Heritage Oak that is within 25 feet of any planned grading or construction activity. No storage or operation of any equipment will occur within this barrier. No construction materials or fill will be stockpiled within this barrier, and trespassing will be prohibited.</p> <p>Mitigation Measure 3.4-7: Future development shall avoid removal of non-Heritage oak trees located within the Project site, if possible. If avoidance is not feasible, replacement oak trees shall be planted as directed by a certified Arborist, and replanted trees shall be monitored as the replanting for replacement of Heritage oak trees as set forth in Mitigation Measure 3.4-5.</p>	
CULTURAL AND TRIBAL RESOURCES			
Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5.	PS	<p>Mitigation Measure 3.5-1: A trained archaeologist shall be retained to monitor all excavation work within 200 feet of Bear Creek. Additionally, a Native American inspector shall be present during ground disturbance activities. If any cultural or tribal resources, including prehistoric or historic artifacts, or other indications of archaeological resources are found during grading and construction activities in the monitored zone or in any portion of the property, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).</p> <p>Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not</p>	LS

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource. If Native American and/or tribal resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.	
Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5.	PS	Implement Mitigation Measure 3.5-1	LS
Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource.	PS	Mitigation Measure 3.5-2: If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Stockton shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.	LS
Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries.	PS	<p>Mitigation Measure 3.5-3: If human remains are discovered during the course of construction, work shall be halted at the site and any nearby area reasonably suspected to overlie adjacent human remains until he San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:</p> <ul style="list-style-type: none"> The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include 	LS

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EXECUTIVE SUMMARY

ES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.</p> <ul style="list-style-type: none"> The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs: <ul style="list-style-type: none"> The Native American Heritage Commission is unable to identify a descendant. The descendant identified fails to make a recommendation. The City of Stockton or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. 	
Impact 3.5-5: Project implementation has the potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074.	PS	Implement Mitigation Measures 3.5-1 and 3.5-3	LS
GEOLOGY AND SOILS			
Impact 3.6-1: The proposed Project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure.	LS		--

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil.	LS		--
Impact 3.6-3: The proposed Project may be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse.	LS		--
Impact 3.6-4: The proposed Project may be located on expansive soil, creating substantial risks to life or property.	LS		--
GREENHOUSE GASES AND CLIMATE CHANGE			
Impact 3.7-1: The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LS		--
Impact 3.7-2: The proposed Project has the potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	PS	Implement Mitigation Measures 3.3-1 through 3.3-6.	SU
Impact 3.7-3: The proposed Project would not result in a cumulative impact on climate change from increased Project-related greenhouse gas emissions.	LS and LCC		--

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ES-16

Draft Environmental Impact Report – Tra Vigne Development Project

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.7-4: Implementation of the proposed Project would not result in the inefficient, wasteful, or unnecessary use of energy resources.	LS		--
HAZARDS AND HAZARDOUS MATERIALS			
Impact 3.8-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	<p>Mitigation Measure 3.8-1: A Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.</p> <p>Mitigation Measure 3.8-2: Prior to bringing hazardous material to the proposed commercial site, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to San Joaquin County Environmental Health Division (CUPA) for review and approval. If during the construction process for the proposed commercial site the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID#, and accumulate, ship, and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).</p> <p>Mitigation Measure 3.8-3: Prior to initiation of any ground disturbance activities, evenly distributed soil samples shall be conducted throughout the proposed Project property for analysis of pesticides and heavy metals. The samples shall be submitted for laboratory analysis of pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the City of Stockton. If elevated levels of pesticides or</p>	LS

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ES EXECUTIVE SUMMARY

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
		heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.	
Impact 3.8-2: Project implementation has the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS		--
Impact 3.8-3: Project implementation has the potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	LS		--
Impact 3.8-4: Project implementation has the potential to result in a safety hazard for people residing or working on the Project site as a result of public airport or public use airport.	LS		--
Impact 3.8-5: Project implementation has the potential to result in safety hazards for people residing or working on the Project site as a result of a private airstrip.	LS		--
Impact 3.8-6: Project implementation has the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS		--

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Impact 3.8-7: Project implementation has the potential to expose people or structures to a risk of loss, injury or death from wildland fires.	LS		--
HYDROLOGY AND WATER QUALITY			
Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction.	LS		--
Impact 3.9-2: The proposed Project has the potential to violate water quality standards or discharge requirements during operation.	LS		--
Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge.	LS		--
Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff.	LS		--
Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality.	LS		--

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Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	LS		--
Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow.	LS		--
LAND USE AND POPULATION			
Impact 3.10-1: The proposed Project would not physically divide an established community.	LS		--
Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect.	LS		--
Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan.	LS		--
Impact 3.10-4: The proposed Project would not induce substantial population growth in an area.	LS		--

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ES-20

Draft Environmental Impact Report – Tra Vigne Development Project

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.10-5: The proposed Project would not displace substantial numbers of people or existing housing.	LS		--
Noise			
Impact 3.11-1: The proposed Project may result in a substantial increase in ambient noise levels at existing receptors in the Project vicinity above levels existing without the Project as a result of excessive traffic noise.	LS		--
Impact 3.11-2: The proposed Project has the potential to result in a significant temporary or periodic increase in ambient noise levels in the Project vicinity existing without the Project during construction activities.	PS	<p>Mitigation Measure 3.11-1: The City shall ensure that the project applicant or construction contractor will implement the following construction-related noise reducing measures:</p> <ul style="list-style-type: none"> • All equipment shall be fitted with factory equipped mufflers, and shall be in good working order. • Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. • Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Stockton in the event of problems. • An onsite complaint and enforcement manager shall track and respond to noise complaints. 	LS

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.11-3: The proposed Project may result in generation of excessive groundborne vibration during construction activities.	LS		--
Impact 3.11-4: The proposed Project has the potential to result in a significant substantial permanent increase in ambient noise levels at new sensitive receptors as a result of excessive traffic noise.	PS	<p>Mitigation Measure 3.11-2: Minimum 11-foot tall sound walls and/or landscaped berms shall be constructed along Eight Mile Road and a 10-foot tall sound wall and/or landscaped berms along West Lane adjacent to proposed residential uses. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. Where high density residential occurs, site designs should allow for applying the exterior noise level standard at common outdoor areas, which are shielded from Eight Mile Road and West Lane. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.</p> <p>Mitigation Measure 3.11-3: Windows at first row of second floor facades facing Eight Mile Road and West Lane shall have an STC rating of 35. A detailed analysis of any additional interior mitigation measures shall be conducted when building plans are available. Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.</p>	LS
Impact 3.11-5: The proposed Project may result in a significant temporary or periodic increase in ambient noise levels in the Project vicinity from proposed park or school uses.	LS		--
Impact 3.11-6: The proposed Project has the potential to result in a significant substantial permanent increase in ambient noise levels at	PS	<p>Mitigation Measure 3.11-4: For the first row of residences facing the UPRR track, the Project site shall include setbacks and barriers to achieve a minimum exterior noise level of 65 dB L_{dn} at the backyards of the first row of residences facing the UPRR track. With a</p>	LS

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
new sensitive receptors as a result of excessive railroad noise.		<p>setback of 200 feet, a 12-foot tall wall/barrier (relative to the building pad elevation) would be required. With a setback of 300 feet, a 10-foot tall wall/barrier (relative to the building pad elevation) would be required. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.</p> <p>Mitigation Measure 3.11-5: A detailed analysis of interior mitigation measures shall be conducted when building plans for the first row of residences facing the UPRR track are available. The analysis shall be conducted for all residences up to a distance of 285 feet from the railroad track centerline (which represents the location of the 70 dB L_{dn} contour). Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.</p>	
Impact 3.11-7: The proposed Project has the potential to result in a substantial permanent increase in ambient noise levels at new sensitive receptors as a result of existing industrial noise levels.	PS	Mitigation Measure 3.11-6: Residential uses shall maintain a 100-foot setback from the industrial property lines, and a barrier 8-feet in height shall be constructed to reduce noise levels to less than 55 dBA L_{eq} and break line-of-sight to the noise sources. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.	LS
Impact 3.11-8: The proposed Project has the potential to result in a substantial permanent increase in ambient noise levels at new sensitive receptors as a result of proposed commercial development noise.	PS	Mitigation Measure 3.11-7: Planned retail, commercial, light industrial and/or office uses within the commercial development area shall be required to comply with the requirements of Chapter 16 of the City of Stockton Development Code. This requirement shall be included in the improvements plans for the commercial portion of the Project prior to their approval by the City's Public Works Department. Noise control strategies to reduce operational noise at adjacent residential uses may include, but are not limited to, the	LS

CC – cumulatively considerable

PS – potentially significant

LCC – less than cumulatively considerable

B – beneficial impact

LS – less than significant

SU – significant and unavoidable

ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>following:</p> <ul style="list-style-type: none"> • Sound walls shall be a minimum of 8-feet in height to block line of sight to truck noise sources; • Loading docks shall be enclosed and allow trucks to back up to the loading docks; • Trucks shall be equipped with loading dock pads, such as Frummelt dock pads, which provide a seal between the loading dock and the trucks. • HVAC equipment shall be located either at ground level or, when located on roof-tops, the building facades shall include parapets for shielding. <p>These requirements shall be included in the improvements plans for the commercial portion of the Project to the satisfaction of the City prior to their approval by the City's Public Works Department.</p> <p>Mitigation Measure 3.11-8: Where commercial retail land uses are adjacent to residential areas or separated by local streets, barriers shall be considered as a means of reducing overall noise levels due to on-site activities. Generally, barriers in the range of 8-feet in height would be sufficient to reduce on-site noise levels at residential uses. This requirement shall be included in the improvements plans prior to their approval by the City's Public Works Department.</p> <p>Mitigation Measure 3.11-9: When tentative maps for the commercial development area are available, a detailed noise analysis shall be completed to ensure compliance with the City of Stockton noise level criteria. This requirement shall be included in the improvements plans for the commercial portion of the Project prior to their approval by the City's Public Works Department.</p>	

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ES-24

Draft Environmental Impact Report – Tra Vigne Development Project

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
PUBLIC SERVICES AND RECREATION			
Impact 3.12-1: The proposed Project would not require the construction of police department facilities which may cause substantial adverse physical environmental impacts.	LS		--
Impact 3.12-2: The proposed Project would not require the construction of fire department facilities which may cause substantial adverse physical environmental impacts.	LS		--
Impact 3.12-3: The proposed Project would require the construction of school facilities which may cause substantial adverse physical environmental impacts.	PS		SU
Impact 3.12-4: The proposed Project would not have effects on other public facilities.	LS		--
Impact 3.12-5: The proposed Project would require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts.	PS		SU
Impact 3.12-6: The Project would not 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.	LS		--

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
TRANSPORTATION AND CIRCULATION			
Impact 3.13-1: Under EPAP Plus Project conditions, the proposed Project may result in a significant impact at the Eight Mile Road & Lower Sacramento Road intersection.	PS	<p>Mitigation Measure 3.13-1: The Project applicant shall construct the following improvements to the Eight Mile Road & Lower Sacramento Road intersection:</p> <ul style="list-style-type: none"> Set the northbound-to-eastbound right-turn lane to "overlap" phasing. Prohibit westbound-to-eastbound U-turns. <p>These improvements shall be reflected on the Project improvement plans. The project applicant shall construct the improvements at the time the significant impact occurs.</p>	LS
Impact 3.13-2: Under EPAP Plus Project conditions, the proposed Project would result in a significant impact at the Eight Mile Road & SR 99 East Frontage Road intersection.	PS		SU
Impact 3.13-3: Under EPAP Plus Project conditions, the proposed Project would result in a significant impact on the roadway segment of Eight Mile Road from Lower Sacramento Road to West Lane.	PS		SU
Impact 3.13-4: Under EPAP Plus Project conditions, the proposed Project would result in a significant impact on the roadway segment of Morada Lane east of West Lane.	PS	<p>Mitigation Measure 3.13-2: The Project applicant shall construct an exclusive westbound-to-northbound right-turn lane along Morada Lane east of West Lane in accordance with design standards that account for the speed and capacity of the roadway segment (estimated to be 500 feet with the taper). This improvement shall be reflected on the Project improvement plans. According to criteria presented in the Level of Service Significance Threshold section of this EIR, a 5 percent increase in traffic volumes on a roadway segment is defined as a significant impact if the LOS on the roadway segment is operating at an unacceptable level without the project. The project applicant shall</p>	SU

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		construct the improvements at the time the significant impact occurs.	
Impact 3.13-5: Impacts related to ramp junction levels of service under EPAP Plus Project conditions.	LS		--
Impact 3.13-6: Impacts related to an increase in demand for transit.	LS		--
Impact 3.13-7: Impacts related to an increase in demand for bicycle and pedestrian facilities.	LS		--
Impact 3.13-8: Impacts related to an increase in the demand for park-and-ride facilities.	PS	<p>Mitigation Measure 3.13-3: Prior to approval of improvements plans, the following improvements shall be shown on the plans: provide park-and-ride facilities in those areas of the proposed Project that would generate relatively concentrated demand for park-and-ride spaces, which include:</p> <ul style="list-style-type: none"> • West Lane, and • Eight Mile Road. <p>Facilities may include joint use parking spaces, particularly in the vicinity of planned transit facilities. The improvement plans shall be subject to review and approval by the Stockton Public Works Department.</p>	LS
Impact 3.13-44: Under Cumulative Plus Project conditions, the proposed Project may result in a significant impact at the Eight Mile Road & Lower Sacramento Road intersection.	PS	<p>Mitigation Measure 3.13-4: Prior to issuance of building permits for each phase of the Project, the Project applicant shall pay the pro-rata fair share fee towards the following improvements to the Eight Mile Road & Lower Sacramento Road intersection:</p> <ul style="list-style-type: none"> • Split the westbound combined through/right-turn lane into an exclusive 	LS

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		westbound through lane, and an exclusive westbound-to-northbound right-turn lane. Proof of payment of the fair share fee shall be submitted to the Stockton Public Works Department.	
Impact 3.13-45: Under Cumulative Plus Project conditions, the proposed Project would result in a significant impact at the West Lane & Armstrong Road intersection.	PS	Mitigation Measure 3.13-5: Prior to issuance of building permits for each phase of the Project, the Project applicant shall pay the pro-rata fair share fee towards the following improvements to the West Lane & Armstrong Road intersection: <ul style="list-style-type: none"> • Add a second southbound-to-eastbound left-turn lane. • Add a second westbound-to-southbound left-turn lane. • Set the westbound-to-northbound right-turn lane to "overlap". • Prohibit southbound-to-northbound U-turns. Proof of payment of the fair share fee shall be submitted to the Stockton Public Works Department.	SU
Impact 3.13-46: Impacts related to roadway segment levels of service under Cumulative Plus Project conditions.	LS		--
Impact 3.13-47: Impacts related to ramp junction levels of service under Cumulative Plus Project conditions.	LS		--
Impact 3.13-48: Impacts related to traffic queuing and intersection spacing under Cumulative Plus Project conditions.	LS		--

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
UTILITIES			
Impact 3.14-1: The proposed Project has the potential to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	LS		--
Impact 3.14-2: The proposed Project has the potential to result in a determination by the wastewater treatment and/or collection provider which serves or may serve the project that is does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	PS	Mitigation Measure 3.14-1: Prior to occupancy of any building that would require wastewater treatment services; the Project proponent shall secure adequate wastewater treatment capacity/allocation.	LS
Impact 3.14-3: The proposed Project has the potential to require or result in the construction of new wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LS		--
Impact 3.14-4: The proposed Project has the potential to require construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LS		--
Impact 3.14-5: The proposed Project has the potential to have insufficient water supplies	LS		--

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ES EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
available to serve the project from existing entitlements and resources.			
Impact 3.14-6: The proposed Project has the potential to 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.	PS	Mitigation Measure 3.14-2: Prior to the issuance of a building or grading permit, the project applicant shall submit a drainage plan to the City of Stockton for review and approval. The plan shall include an engineered Storm Water Quality Control Criteria Plan (SWQCCP) that demonstrates attainment of pre-project runoff requirements prior to release at the Bear Creek outfall. The plan shall describe the volume reduction measures and treatment controls consistent with City of Stockton requirements.	LS
Impact 3.14-7: The proposed Project has the potential to be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs and comply with federal, State, and local statutes and regulations related to solid waste.	LS		--
CUMULATIVE IMPACTS			
Impact 4.1: The proposed Project may result in cumulative damage to scenic resources within a State Scenic Highway.	LS and LCC		--
Impact 4.2: The proposed Project would result in cumulative degradation of the existing visual character of the region.	PS		CC and SU
Impact 4.3: The proposed Project may result in cumulative impacts related to light and glare.	LS and LCC		--

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EXECUTIVE SUMMARY

ES

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.4: The proposed Project would result in cumulative impacts on agricultural and forest resources.	PS		CC and SU
Impact 4.5: The proposed Project would result in cumulative impacts on the region's air quality.	PS		CC and SU
Impact 4.6: The proposed Project may result in cumulative loss of biological resources, including habitats and special status species.	LS and LCC		--
Impact 4.7: The proposed Project may result in cumulative impacts on known and undiscovered cultural or tribal resources.	LS and LCC		--
Impact 4.8: The proposed Project may result in cumulative impacts on geologic and soils resources.	LS and LCC		--
Impact 4.9: The proposed Project may result in cumulative impacts related to climate change from increased Project-related greenhouse gas emissions.	PS		CC and SU
Impact 4.10: The proposed Project may result in cumulative impacts related to hazards and hazardous materials.	LS and LCC		--

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ES EXECUTIVE SUMMARY

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.11: The proposed Project may result in cumulative increases in peak stormwater runoff from the Project site.	LS and LCC		--
Impact 4.12: The proposed Project may result in cumulative impacts related to degradation of water quality.	LS and LCC		--
Impact 4.13: The proposed Project may result in cumulative impacts related to degradation of groundwater supply or recharge.	LS and LCC		--
Impact 4.14: The proposed Project may result in cumulative impacts related to flooding.	LS and LCC		--
Impact 4.15: The proposed Project may result in cumulative impacts to communities and local land uses.	LS and LCC		--
Impact 4.16: The proposed Project may result in cumulative impacts on population and housing.	LS and LCC		--
Impact 4.17: The proposed Project may result in cumulative exposure of existing and future noise-sensitive land uses to increased noise resulting from cumulative development.	LS and LCC		--
Impact 4.18: The proposed Project may result in cumulative impacts on public services and recreation.	LS and LCC		--

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<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.19: Under Cumulative Plus Project conditions, the proposed Project may result in a significant impact at the Eight Mile Road & Lower Sacramento Road intersection.	LS and LCC		--
Impact 4.20: Under Cumulative Plus Project conditions, the proposed Project would result in a significant impact at the West Lane & Armstrong Road intersection.	PS		CC and SU
Impact 4.21: Impacts related to roadway segment levels of service under Cumulative Plus Project Conditions.	LS and LCC		--
Impact 4.22: Impacts related to ramp junction levels of service under Cumulative Plus Project Conditions.	LS and LCC		--
Impact 4.23: Impacts related to traffic queuing and intersection spacing under Cumulative Plus Project conditions.	LS and LCC		--
Impact 4.24: The proposed Project may result in cumulative impacts on wastewater utilities.	LS and LCC		--
Impact 4.25: The proposed Project may result in cumulative impacts on water utilities.	LS and LCC		--
Impact 4.26: The proposed Project may result in cumulative impacts on stormwater facilities.	LS and LCC		--

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ES EXECUTIVE SUMMARY				
ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE	
Impact 4.27: The proposed Project may result in cumulative impacts on solid waste facilities.	LS and LCC		--	
<div>CC – cumulatively considerable PS – potentially significant</div> <div>LCC – less than cumulatively considerable B – beneficial impact</div> <div>LS – less than significant SU – significant and unavoidable</div>				
ES-34	Draft Environmental Impact Report – Tra Vigne Development Project			

1.0.1 PURPOSE AND INTENDED USES OF THE EIR

The City of Stockton received applications for the annexation of 341.17 acres of land into the Stockton city limits, and the subsequent development of 318.82 acres of land with a variety of uses including: General Commercial, Low Density Residential housing, High Density Residential housing, and Open Space Parkland. The Project is known as the Tra Vigne Development Project and the developer representatives include John Tomasello and David Barretta.

The City of Stockton, as the lead agency, determined that the proposed Tra Vigne Development Project is a "project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project which may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and imposes an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

The City of Stockton, as the lead agency, has prepared this Draft EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from implementation of the proposed Project. The environmental review process enables interested parties to evaluate the proposed Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the proposed Project. This EIR will be used by the City of Stockton to determine whether to approve, modify, or deny the proposed Project and associated approvals in light of the Project's environmental effects. The EIR will be used as the primary environmental document to evaluate full development, all associated infrastructure improvements, and permitting actions associated with the proposed Project. All of the actions and components of the proposed Project are described in detail in Chapter 2.0, Project Description.

1.0.2 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Project-level EIR is described in State CEQA Guidelines §15161 as: "The most common type of EIR (which) examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation." The project-level analysis considers the broad environmental effects of the proposed Project.

1.0.3 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the proposed Project or an aspect of the proposed Project (CEQA Guidelines Section 15381). There are no Responsible Agencies for this project.

For the purpose of CEQA, a “Trustee” agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). The following agencies are considered Trustee Agencies for the proposed Project, and may be required to issue permits or approve certain aspects of the proposed Project:

- California Department of Fish and Wildlife (CDFW) – Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code;
- Approval by the Central Valley Flood Protection Board (CVFPB);
- Central Valley Regional Water Quality Control Board (CVRWQCB) – Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- CVRWQCB – Permitting of State jurisdictional areas, including isolated wetlands pursuant to the Porter-Cologne Water Quality Act;
- CVRWQCB – Water quality certification pursuant to Section 401 of the Clean Water Act;
- San Joaquin County Flood Control;
- Native American Heritage Commission (NAHC);
- San Joaquin Local Agency Formation Commission (LAFCo) – Annexation;
- Sacramento & San Joaquin Drain District (SSJDD) – Approval for construction of an outfall;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- SJVAPCD – Authority to Construct, Permit to Operate for stationary sources of air pollution (auxiliary power, storm drainage pump station);
- San Joaquin Council of Governments, Inc. (SJCOG) – Issuance of incidental take permit under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP); and
- United States Army Corps. Of Engineers (USACE) – Permitting of federal jurisdictional areas pursuant to Section 404 of the Clean Water Act.

1.0.4 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The City of Stockton circulated a Notice of Preparation (NOP) of an EIR for the proposed Project on July 7, 2017 to State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, Organizations and Interested Persons. A public scoping meeting was held on July 26, 2017 to present the project description to the public and interested agencies, and to receive

comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and comments received on the NOP by interested parties are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the proposed Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Stockton will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period. Additionally, the City of Stockton will file the Notice of Availability with the County Clerk and have it published in a newspaper of regional circulation to begin the local public review period.

PUBLIC NOTICE/PUBLIC REVIEW

The City of Stockton will provide a public Notice of Availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

Attn: Brian Millar, Project Planner
City of Stockton
Community Development Department, Planning & Engineering Division
345 N. El Dorado Street
Stockton, CA 95202
(209) 902-9218

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments received at a public hearing during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City of Stockton will review and consider the Final EIR. If the City of Stockton finds that the Final EIR is "adequate and complete", the City of Stockton will certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

- 1) The EIR shows a good faith effort at full disclosure of environmental information; and
- 2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

Following review and consideration of the Final EIR, the City of Stockton may take action to approve, modify, or reject the proposed Project. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the proposed Project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.0.5 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the proposed Project, environmental and planning documentation prepared for recent projects located within the City of Stockton, applicable local and regional planning documents, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

This Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the proposed Project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed Project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the Project and the purpose of the environmental evaluation, identifies the Project sponsor, lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, and identifies the scope and organization of the Draft EIR.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed Project, including the location, intended objectives, background information, the physical and technical characteristics, including

the decisions subject to CEQA, related improvements, and a list of related agency action requirements.

CHAPTER 3.0 – ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the proposed Project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Resources
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Population
- Noise
- Public Services and Recreation
- Transportation and Circulation
- Utilities and Service Systems

Additionally, Chapter 3.0 provides a comparative analysis between the environmental impacts of the proposed Project and the selected alternatives.

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 – ALTERNATIVES TO THE PROJECT

State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the proposed Project, which could feasibly attain the basic objectives of the proposed Project and avoid and/or lessen any significant environmental effects of the proposed Project. Chapter 5.0 summarizes the comparative analysis of the environmental impacts of the proposed Project and the selected alternatives which were provided in Chapter 3.0.

CHAPTER 6.0 – REPORT PREPARERS

This section lists all authors and agencies that assisted in the preparation of the EIR, by name, title, and company or agency affiliation.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as technical material prepared to support the analysis.

1.0.6 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

In March 2016, the City of Stockton released an NOP for a previous iteration of the proposed Tra Vigne Development Project. The City of Stockton received three written comment letters on the NOP for the 2016 iteration of the Project. A copy of the 2016 comment letters is provided in Appendix A of this Draft EIR. The commenting agencies are provided below.

- California Natural Resources Agency, Central Valley Flood Protection Board
- Central Valley Regional Water Quality Control Board
- California Department of Conservation, Division of Land Resource Protection

The City also held a public scoping meeting on March 16, 2016 for the 2016 iteration of the Project. No written or verbal comments were provided at the 2016 scoping meeting. Since the March 16, 2016 public scoping meeting, some changes to the Project design and development assumptions have occurred. Due to these changes that occurred after the NOP for the 2016 iteration of the Project was released, the City of Stockton held another public scoping meeting for the 2017 iteration of the Tra Vigne Development Project and released the 2017 NOP for another 30-day public review period. The second public scoping meeting was held on July 26, 2017. Verbal comments were provided by Roy Harper at the 2017 scoping meeting. The City of Stockton received 8 written comment letters on the NOP for the proposed Project during the 2017 review period. Additionally, one electronic comment letter on the NOP was received anonymously without a signature or name on July 17, 2017. A copy of the letters is provided in Appendix A of this Draft EIR. The commenting agencies are provided below.

- California Natural Resources Agency, Central Valley Flood Protection Board
- Central Valley Regional Water Quality Control Board
- Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
- Native American Heritage Commission

- San Joaquin Council of Governments
- San Joaquin County Department of Public Works
- USACE, Sacramento District
- Waterloo Morada Fire District

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2.0.1 PROJECT LOCATION

The proposed Project site is located in the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project area is adjacent to the City of Stockton city limits to the east, within the Stockton Sphere of Influence (SOI) (as defined in the 2035 Stockton General Plan), and within the City of Stockton Urban Services Boundary.

The Project site is immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. An irrigation catch pond runs along the north, side of the Project site. The Project site is located within a portion of Section 2 of Township 2 North, Range 6 East MDBM. The site is shown on the Lodi South, California, 7.5-minute series quadrangle map. Figures 2-1 and 2-2 show the Project's regional location and vicinity.

2.0.2 PROJECT SETTING

EXISTING SITE CONDITIONS

The Project site is made up of several assessor parcels for which the Assessor's Parcel Number (APN) for each is listed in Table 2-1, and displayed on Figure 2-3.

TABLE 2-1: PARCELS WITHIN THE PROJECT AREA

APN	LEGAL OWNERS	ACREAGE
<i>Tra Vigne West</i>		
120-02-01	MCD South Parcel, LLC	0.75
120-02-02	MCD North Parcel, LLC	80.50
120-02-03	Western States Land, LLC	38.34
120-02-17	MCD South Parcel, LLC	25.53
120-02-18	MCD South Parcel, LLC	5.68
120-02-19	MCD South Parcel, LLC	12.66
120-02-20	MCD South Parcel, LLC	3.52
120-02-22	MCD South Parcel, LLC	20.21
120-02-23	MCD South Parcel, LLC	12.97
<i>Tra Vigne East</i>		
120-02-13	Pacific Bell	5.29
120-02-14	Bragg Investment Company	10.28
120-02-15	Woodside Teresi LLC	98.02
122-01-02	UPRR	2.84
122-01-04	UPRR	2.23
<i>Total Project Area Parcels</i>		
<i>Tra Vigne West</i>	--	200.16
<i>Tra Vigne East</i>	--	118.66
<i>Subtotal – Development Area</i>		318.82
<i>Total Annexation Area</i>		
<i>Right-of-Way</i>	Existing County Public ROW	22.35
<i>Total – Annexation Area</i>		341.17

NOTE: THE 318.82-ACRE DEVELOPMENT AREA REFLECTS THE TOTAL ACREAGE OF THE LEGAL PARCELS WITHIN THE DEVELOPMENT AREA. THE TOTAL DEVELOPMENT AREA ACCORDING TO THE ASSESSOR PARCELS IS APPROXIMATELY 321.57 ACRES, FOR A TOTAL DISCREPANCY OF +2.75 ACRES. THIS DISCREPANCY APPLIES TO APNs 120-02-01 (+0.17 ACRE DISCREPANCY) AND 120-02-02 (+2.58 ACRE DISCREPANCY).

SITE TOPOGRAPHY

The Project site is relatively flat and ranges in elevation from approximately 25 to 35 feet above mean sea level. Figure 2-4 shows the USGS Topographic Map of the Project site.

EXISTING SITE USES

The Project site consists largely of active agricultural fields (roughly 253 acres in production). The Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site (APN's 120-02-13, and 120-02-14); uses within these industrial lots include Pacific Bell and Bragg Investment Company. Figure 2-5 shows aerial imagery of the current existing site uses within the Project site.

EXISTING SURROUNDING USES

Uses immediately adjacent to the Project site include a truck and trailer repair service establishment to the northwest across Eight Mile Road. Other existing uses north of the Project site include large-lot single family residences and agricultural land. Immediately to the east of the Project site is industrial land uses, including several large warehouses and a large storage lot. Farmland lies immediately west and south of the Project site. Other nearby uses include Ronald McNair High School located immediately southwest of the Project site.

2.0.3 GENERAL PLAN LAND USE AND ZONING DESIGNATIONS

The Project site is located within San Joaquin County. The Project site is outside the Stockton city limits, but within the City's SOI.

EXISTING CITY OF STOCKTON GENERAL PLAN LAND USE DESIGNATIONS

The 2035 Stockton General Plan designates the Project site as Low Density Residential (LDR, 283.58 acres), High Density Residential (HDR, 10.67 acres), Commercial (C, 9.00 acres), and Industrial (I, 15.57 acres).

Figure 2-6 depicts the 2035 Stockton General Plan land use designations for the Project site and the surrounding areas. The General Plan contains the following standards to guide development for these land uses:

Low Density Residential (LDR): Allowed uses: single-family residential units, duplexes, triplexes, semi-detached patio-homes, townhomes, public and quasi-public uses, second units, and other similar and compatible uses.

- Maximum dwelling units per gross acre: 6.1 du/ac.
- Maximum dwelling units per net acre: 8.7 du/ac.

High Density Residential (HDR): Allowed uses: Multifamily residential units, apartments, dormitories, group homes, guest homes, public and quasi-public uses, and other similar and compatible uses.

- Maximum dwelling units per gross acre: 23.2 du/ac outside the downtown area; 69.6 du/ac inside downtown.

- Maximum dwelling units per net acre: 29.0 du/ac outside the downtown area; 87 du/ac inside downtown.

Commercial (C): Allowed uses: a wide variety of retail, service, and commercial recreational uses, business, medical and professional offices, residential uses, public and quasi-public uses and other similar and compatible uses. Community or regional commercial centers as well as freestanding commercial establishments are permitted.

- Maximum FAR: 0.3 outside the downtown area; 5.0 inside the downtown area.
- Maximum dwelling units per gross acre: 23.2 du/ac outside the downtown area; 69.6 du/ac inside downtown.
- Maximum dwelling units per net acre: 29 du/ac outside the downtown area; 87 du/ac inside downtown.

Industrial (I): Allowed uses: a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. Residential uses are prohibited.

- Maximum FAR: 0.6

SAN JOAQUIN COUNTY GENERAL PLAN LAND USE DESIGNATION

The San Joaquin County General Plan currently designates the Project site for Low Density Residential (R/L), Residential/High Density (R/H), Community Commercial (C/C), Limited Industrial (I/L), and General Industrial (I/G) uses. The western half of the Project site contains similar land use designations under both the County and City General Plans, but the designations for the eastern half of the Project site differ between the City and County. Below is a general description of County Designated land uses within the Project site. The County General Plan land use designations for the Project site and surrounding area are shown on Figure 2-7a.

Low Density Residential (R/L): This designation is appropriate for single family neighborhoods. The typical housing type is detached, single family dwelling units. The density is 2 to 6 primary dwelling units per gross acre.

Residential/High Density (R/H): This designation provides for apartments, condominiums, and other multi-family housing located near central business districts, major commercial areas, and major transportation routes. The density ranges from 15 to 40 units per gross acre depending on the zoning (R-H zoning allows 20 units per acre)

Community Commercial (C/C): This designation provides for a full range of retail and service establishments, allowing comparison shopping and serving Urban Communities or regional markets. Typical uses include a full range of retail sales, public buildings, eating and drinking establishments, personal services, and limited administrative and professional offices. Community Commercial areas are permitted only in central business districts or extensive commercial areas in Urban Communities; other development locational criteria also apply.

Limited Industrial (I/L): This designation provides for a range of industrial activities, including production, assembly, warehousing and distribution. Typical uses are light impact manufacturing, warehousing, wholesaling, corporation yards, and distribution. Development and locational criteria apply

General Industrial (I/G): This designation provides for a full range of industrial activities whose location and operation tend to have moderate to high nuisance characteristics and therefore require segregation from other land uses. Typical uses include manufacturing, distribution, storage, and wholesaling. Development and locational criteria apply.

SAN JOAQUIN COUNTY ZONING DESIGNATION

The San Joaquin County Zoning Ordinance currently designates the Project site for General Industrial (I-G), Limited Industrial (I-L), and Agriculture-Urban Reserve (AU-20) uses. Below is a general description of County zoning within the Project site. The County General zoning designations for the Project site are shown on Figure 2-7b.

I-G Zone (General Industrial): This zone provides for a wide range of manufacturing, distribution and storage uses which have moderate to high nuisance characteristics such as noise, heat, glare, odor, and vibration, and which require segregation from other land uses, and/or may require outside storage areas. New lots in this zone are a minimum of 10,000 square feet.

I-L Zone (Limited Industrial): This zone is intended to provide for light impact manufacturing, warehousing, wholesaling, construction contracting, and distribution uses. Activities within this zone have external physical effects that are generally restricted to the immediate area, are compatible with surrounding uses, are conducted entirely within enclosed buildings, and have outdoor storage areas that are screened. Business and professional offices may also be appropriate within this zone. New lots in this zone are a minimum of 10,000 square feet.

AU Zone (Agriculture-Urban Reserve): This zone is intended to retain in agriculture those areas planned for future urban development in order to facilitate compact, orderly growth and to assure the proper timing and economical provision of services and utilities. The minimum parcel size within the AU zone is 20 acres.

SURROUNDING GENERAL PLAN DESIGNATIONS

Lands to the north of the Project site (within the County) consist of General Agriculture (A/G). Adjoining lands to the east of the Project site (within the City of Stockton) are designated for Industrial uses. Areas surrounding the Project site to the south and west (within the SOI) have a City designation of LDR and Village H. The City of Stockton and San Joaquin County General Plan land use designations for the Project site and surrounding areas are shown on Figures 2-6 and 2-7a.

2.0.4 PROJECT GOALS AND OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed Project shall be discussed. The principal objective of the proposed Project is the approval and subsequent implementation of the Tra Vigne Development Project (the proposed

Project). The quantifiable objectives of the proposed Project include annexation of 341.17 acres of land into the Stockton city limits, and the subsequent development of 318.82 acres of land, which will include General Commercial, Low Density Residential housing, High Density Residential housing, and Open Space Parkland.

The Tra Vigne Development Project identifies the following objectives:

- **Commercial:** Establish a commercial site that strategically maximizes the high visual exposure of Eight Mile Road and West Lane to capitalize on commuter traffic, while also catering to the neighborhood needs of the residents within the development.
- **Low Density Residential:** Provide low density residential housing in accordance with the General Plan land use map, while ensuring that there is flexibility in the lot and housing size to accommodate real market demands throughout the housing cycle. Ensure that all housing is designed with architectural form that is visually attractive.
- **High Density Residential:** Provide high density residential housing in accordance with the General Plan land use map in order to provide a mix of housing types and accommodate real market demands throughout the housing cycle. Ensure that all housing is designed with architectural form that is visually attractive.
- **School:** Provide a site that could accommodate a K-8 school in the event that the School District desires to build a school within the Project site. Alternatively, if the School District chooses not to build a school within the Project site, ensure that there is a design alternative that would accommodate low density residential housing consistent with the form and design of the residential units planned throughout the balance of the Project site.
- **Industrial:** Retain the existing industrial uses within the Project site.
- **Phasing:** Establish a logical phasing plan designed to ensure that each phase of development would include necessary public improvements required to meet city standards.

2.0.5 PROJECT CHARACTERISTICS AND DESCRIPTION

PROJECT CHARACTERISTICS

Sub-Planning Areas

The Project site has been designed with two sub-planning areas (Tra Vigne West and Tra Vigne East) to differentiate between the two property owners. Figure 2-8a provides a conceptual site plan that illustrates the development of Tra Vigne West and Tra Vigne East with 1,413 residential units (995 Tra Vigne West and 418 Tra Vigne East), a 15.57 existing Industrial area, a 10.5-acre commercial area, 15.07 acres of park space, and 20.36 acres of open space, mainly located along Bear Creek.

TRA VIGNE EAST

The proposed Project includes a large lot tentative map that would subdivide the Tra Vigne East (APN 120-02-15) property consistent with the proposed land uses. Tra Vigne East only proposes a large lot tentative map at this time, and it is estimated that 418 units would be developed under the proposed scenario. Within this portion of the Project site, approximately 15.57 acres of existing industrial land would be retained. Circulation and roadway improvements would also be developed on Tra Vigne East. On-site intersection traffic control and traffic calming would be implemented through a system of:

- stop signs,
- yield signs,
- intersections with bulb-outs,
- raised crosswalks,
- intersections with textured pavement,
- intersections with high-visibility crosswalks, and
- center island narrowing.

TRA VIGNE WEST

The proposed Project includes a large lot and small lot tentative map that would subdivide the Tra Vigne West property consistent with the proposed land uses. As shown on Figure 2-8a, the approximately 205-acre Tra Vigne West includes a detailed lot layout of 655 single family residential units. Residential lot sizes in the vesting tentative map range from 5,000 to 6,000 sf. Additionally, the Tra Vigne West site would include up to 340 high density residential units on 11.7 acres to the east of the proposed commercial area. Similar traffic control and traffic calming measures would be implemented for Tra Vigne West.

The proposed Project establishes a site for a 14.7-acre K-8 school to be developed by the Lodi Unified School District (LUSD). The development of a K-8 school at this site is the discretionary decision of the LUSD, and while the proposed Project has planned for a school at this location, it will be determined by LUSD at a later date through their decision-making process. If the LUSD decides to not pursue building a school at this site, then the site would be developed for residential in accordance with the General Plan land use designation. Construction of homes in this location would increase the number of LDR units by 90 units when compared to the proposed Project with the school site. Figure 2-8b illustrates this variation of the site plan without the school and with the increased residential units in its place. The total combined units would increase from 1,413 under the proposed Project to 1,503 units under this variation.

Figure 2-8c provides a proposed conceptual commercial site plan that illustrates a more detailed design for the 10.5-acre commercial area in the northwest portion of the Project site. As shown on Figure 2-8c, the commercial site is proposed to include a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room.

Residential Characteristics

Typical residential lots within the Project site range from 5,000 sf to 6,000 sf. Typical lots are generally uniform in nature (rectangle shaped). Corner lots and lots adjacent to cul-de-sacs are generally not uniform in shape.

Residential Development Areas and Phasing

Residential lots within the Project site are proposed to be developed in several phases. The proposed phasing indicates early development would be located along the southwest portion of the Project site along West Lane and would develop to the east, and then expand to the north.

Parks and Open Space

Approximately 9.5 acres of traditional park space is proposed for Tra Vigne West. Two park areas are proposed within Tra Vigne West including a centrally located 5.8-acre park and a 3.7-acre park in the southwest corner of the Tra Vigne West site. Additionally, a 6.24-acre detention basin area would be located in the southwestern portion of the Project site, adjacent to the 3.7-acre park.

Tra Vigne East includes plans for an additional 5.57 acres of traditional park space. One traditional park area, totaling 5.57 acres, would be located in the southern portion of Tra Vigne East, adjacent to the Bear Creek open space area. Additionally, a 3.75-acre detention basin area would be located in the southwestern portion of the Tra Vigne East within the Project site.

In addition to dedicated parkland within the Project site, 20.36 acres of non-traditional park/open space areas (13.75 acres at Tra Vigne West, and 6.61 acres at Tra Vigne East) are planned along the Bear Creek corridor (19.53 acres) and east of the existing industrial area (0.83 acres).

GENERAL PLAN AMENDMENTS

The proposed Project would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove reference to a proposed bridge that would cross Bear Creek. Changes to the Land Use Element would include:

- changing approximately 1.5 acres of LDR to C uses;
- changing approximately 1.03 acres of LDR to HDR uses; and
- changing 20.36 acres of LDR to Open Space/Agriculture (OSA) along Bear Creek.

Approximately 260.69 acres of LDR uses and approximately 15.57 acres of I uses would be maintained. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road. Figure 2-6 illustrates the current Stockton General Plan land uses within the Project site, including the Marlette Road extension. Proposed General Plan land uses are shown on Figure 2-9. Table 2-2 summarizes the existing and proposed zoning and land use designations.

TABLE 2-2: EXISTING AND PROPOSED LAND USE AND ZONING DESIGNATIONS

EXISTING	ACRES	PROPOSED	ACRES
Land Use Designations			
LDR (City)	283.58	LDR (City)	260.69
HDR (City)	10.67	HDR (City)	11.7
C (City)	9.00	C (City)	10.5
I (City)	15.57	I (City)	15.57
--		OSA (City)	20.36
Pre-zoning Designations			
I-G (County)	16.23	RL (City)	260.69
I-L (County)	95.73	RH (City)	11.7
AU-20 (County)	201.79	CG (City)	10.5
--		IL (City)	
		OS (City)	

ANNEXATION

The Project site is currently within San Joaquin County, and within the City of Stockton's SOI. The proposed Project would result in the annexation of the APN's described in Table 2-1 into the City of Stockton, as well as the roadway right-of-way for Eight Mile Road and West Lane. As shown in Table 2-1, the total annexation area would be 341.17 acres. The proposed Project includes property owner-initiated annexation for all parcels except for APN 120-02-13 (Pacific Bell) and 120-02-14 (Bragg Investment Company). As of September 2017, Pacific Bell and Bragg Investment Company had not signed applications for annexation. As a result, there are three annexation options for these two parcels: 1) City initiated annexation, 2) property initiated annexation, or 3) these two parcels are excluded from the annexation. The EIR intends to analyze the potential annexation of the parcels into the City of Stockton unless it is determined that these parcels will not be annexed under this development proposal. Annexation of the Project site, including the Pacific Bell and Bragg Investment Company parcels, is consistent with the growth plans for the City of Stockton. In summary, the annexation area would include the Project development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Impacts associated with the proposed annexation are discussed in Section 3.10, Land Use and Population, of this Draft EIR. The Pacific Bell and Bragg Investment Company properties are included in the proposed annexation area in order to create a logical annexation boundary. Should Pacific Bell and Bragg Investment Company choose not to annex their associated properties, these areas would continue to operate under their existing uses and would remain under the jurisdiction of the County. Additional environmental impacts would not result should Pacific Bell and Bragg Investment Company choose not to annex their associated properties given that there would be no physical change to their existing development.

PRE-ZONING

The Project area is currently within the jurisdiction of San Joaquin County. Current county zoning for all parcels is I-G, I-L, and AU-20. The San Joaquin County Local Agency Formation Commission (LAFCo) will require the Project site to be pre-zoned by the City of Stockton in conjunction with the proposed annexation.

The City's pre-zoning will include the following zoning designations: Residential, Low Density (RL), Residential, High Density (RH), Industrial, Limited (IL), Commercial, General (CG), and Open Space (OS).

The pre-zoning would go into effect upon annexation into the City of Stockton. The proposed pre-zoning for the Project site is shown on Figure 2-10. Table 2-2 summarizes the existing and proposed zoning and land use designations.

UTILITIES AND PLANNED INFRASTRUCTURE IMPROVEMENTS

The construction of onsite and offsite infrastructure improvements would be required to accommodate development of the proposed Project, as described below. Figures 2-11 and 2-12 illustrate the location of offsite infrastructure improvements.

Potable Water System: Development areas proposed by the Project would be served by a new potable water distribution system. The water system would consist of 24- and 30-inch lines along West Lane and Eight Mile Road, respectively, and a looped network of 18-, 16-, and 12-inch lines located within the Project site. Local service lines, eight inches in diameter or larger would extend along proposed streets to provide water service to all proposed land uses at their street frontage. The proposed Project would include the dedication of a new 0.5-acre City potable water well site to be located at the southwest corner of the site, adjacent to Bear Creek and West Lane; the proposed Project intends to dedicate the site for future well development.

The proposed potable water system is shown on Figure 2-11. One off-site element of the overall proposed Project would involve potable water pipeline construction. The off-site water pipeline would include extension of a 30-inch water pipeline from the existing 12-inch water line along Eight Mile Road east 1,200 linear feet (LF) to Lower Sacramento Road and along Eight Mile Road to West Lane. This pipeline would ultimately connect to an existing water main at Marlette Road.

Wastewater System: Wastewater services would be provided by existing and planned City of Stockton collection and treatment system. Wastewater treatment would be provided at the City's existing Regional Wastewater Control Facility (RWCF) on Navy Drive in southwest Stockton. Wastewater collection would be provided by the City's existing Wastewater Collection System No. 10 (System 10). System 10 facilities were extended into lands in the Project vicinity in conjunction with the North Stockton Pipelines project. Within the Project site, the wastewater collection system would consist predominantly of 8-inch to 10-inch lines installed within proposed local streets. Collection System 10 discharges to the 14-Mile Slough Sanitary Sewer Pump Station, located in northwest Stockton. Due to rapid increase in System 10 flows, the City of Stockton Municipal Utilities Department completed an expansion of the pump station in 2008.

The proposed sewer system is shown on Figure 2-12. A second off-site element of the overall proposed Project would involve sewer construction through existing agricultural lands including approximately 3,028 LF of 24-inch sewer main in West Lane, and approximately 3,500 LF of 24-inch sewer main along the north side of Bear Creek to connect to the existing 48-inch trunk sewer main northwest of Ronald McNair High School. The development of the 24-inch sewer main along the north side of Bear Creek is required to comply with the City's Sewer Master Plan. These proposed off-site sewer mains would require extension across adjacent non-project properties and, as a result, a sewer easement would need to be acquired.

Storm Drainage: Development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, and two detention basins (one in the southwestern corner of Tra Vigne West, and one at the southwestern corner of Tra Vigne East). It is anticipated that a pump station that would discharge to Bear Creek would be installed at the Tra Vigne West detention basin.

The proposed storm drainage system is shown on Figure 2-13. Proposed storm drain lines would range from 12 inches to 60 inches in diameter. Collection lines would flow generally west and south to the proposed detention basins.

The City will require that a maintenance entity be established to provide for the operation, maintenance, and replacement costs of the detention pond system and other water quality features of the Project. The perimeter of the detention facilities will be landscaped to temper and screen views of the detention basins. Additionally, fencing would be constructed around the detention basin areas for safety and security purposes.

Areas of proposed development within the Project site will be required to meet the "volume reduction" requirements of the City's most recent stormwater National Pollutant Discharge Elimination System (NPDES) permit. Units of development would incorporate design features that would divert storm water to the groundwater system and/or detain runoff before it reaches the collection system. These design features would include measures also described as Low Impact Development (LID) and Volume Reduction Measures, such as grassy swales and porous pavement, among others. Compliance with the City's stormwater standards will require that storm drainage from new development be reduced below "existing runoff" rates.

Disposal of storm water collected to the Tra Vigne West detention basin would be handled by a new on-site storm water pump station and discharge outfall to Bear Creek. The pump station would operate when storm water quality and detention objectives have been met. The pump station is expected to consist of a concrete sump, trash screen and two or more pumps that would deliver storm water flow over or through the Bear Creek levee to an outfall facility. The pump station facility may include an emergency generator to supply electrical power to the pump station during power outages. Disposal of storm water collected to the Tra Vigne East detention basin would be conveyed to the Tra Vigne West detention basin via a 24- and 30-inch storm drain line.

The outfall structure would consist of two or more pipelines directed southeasterly to a point inside the Bear Creek levee. Outfall pipelines would likely terminate at a concrete headwall and energy dissipators set into the toe of the Bear Creek levee; storm drainage would be discharged to a concrete, gunite or riprap apron to flow into the Bear Creek channel. Outfall pipes would terminate in a "tideflex" or a comparable check valve system.

Regulated Public Utilities: Electrical, gas, phone, cable and related internet services would be extended to all portions of the Project site from existing facilities located along West Lane and Eight Mile Road, or other utility systems in the Project area. Proposed utilities would be located within public utility easements to be dedicated along street frontages. Utility improvements would be installed in conjunction with planned street improvements. Existing electrical distribution (i.e., 12 kilovolt), phone

and cable lines along the West Lane and Eight Mile Road frontages of the Project site would be undergrounded or relocated in conjunction with required street improvements.

DEVELOPMENT AGREEMENTS

The proposed Project includes a request for approval of one or more Development Agreements (DA) governing the relationship between the City and the Project applicants. The DA may be used to establish City/applicant agreements related to the Project. Such agreements may include commitments to Project entitlements and development standards as well as any administrative and/or financial relationships that may be defined during the review of the development plan. These relationships have not been defined at present and would be developed during the review of the proposed Project and incorporated into the DA prior to Project approval.

2.0.6 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed Project.

CITY OF STOCKTON

The City of Stockton will be the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050. Actions that would be required from the City include, but are not limited to the following:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of City of Stockton General Plan Amendments (Land Use/Circulation Elements);
- Approval of City of Stockton Pre-zoning;
- Approval of annexation;
- Approval of Large Lot Tentative and Final maps;
- Approval of Small Lot Tentative and Final maps;
- Approval of Improvement Plans;
- Approval of Grading Plans;
- Approval of Building Permits;
- Approval of future site plan and design review for Tra Vigne East;
- Approval of design review for Tra Vigne West;
- Approval of Development Agreements;
- Approval of a Conditional Use Permit for the gas station and wine tasting room at the Commercial site;
- Issuance of grading, encroachment, and building permits;
- City review and approval of Project utility plans;
- Formation of a finance district (i.e. CFD or other finance district); and
- Formation of, or annexation into, a Lighting and Landscape District.

OTHER GOVERNMENTAL AGENCY APPROVALS

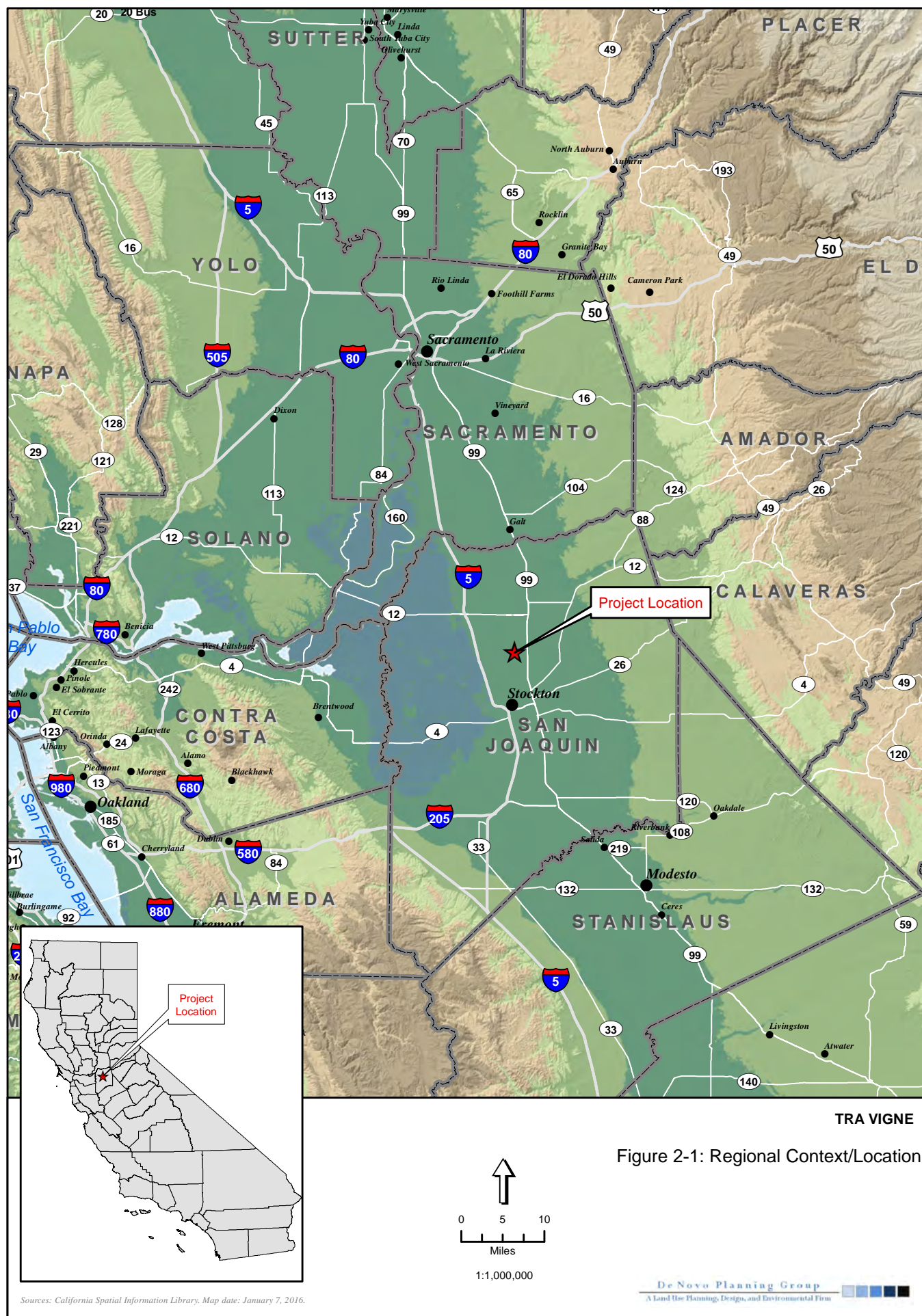
The following agencies are considered “Responsible Agencies” and will need to rely on this EIR to issue permits or approve certain aspects of the proposed Project. A “Responsible Agency” is any public agency, other than the lead agency, which has the responsibility for approving the project where more than one public agency is involved. Other governmental agencies that may require approval include, but are not limited to, the following:

- California Department of Fish and Wildlife – Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code;
- Central Valley Flood Protection Board (CVFPB);
- Central Valley Regional Water Quality Control Board (CVRWQCB) – Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- CVRWQCB – Permitting of State jurisdictional areas, including isolated wetlands pursuant to the Porter-Cologne Water Quality Act;
- CVRWQCB – Water quality certification pursuant to Section 401 of the Clean Water Act;
- San Joaquin County Flood Control;
- Native American Heritage Commission (NAHC);
- San Joaquin Local Agency Formation Commission (LAFCo) – Annexation;
- Sacramento & San Joaquin Drain District (SSJDD) – Approval for construction of an outfall;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- SJVAPCD – Authority to Construct, Permit to Operate for stationary sources of air pollution (auxiliary power, storm drainage pump station);
- San Joaquin Council of Governments (SJCOG), Inc. – Issuance of incidental take permit under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP); and
- United States Army Corps. Of Engineers (USACE) – Permitting of federal jurisdictional areas pursuant to Section 404 of the Clean Water Act.

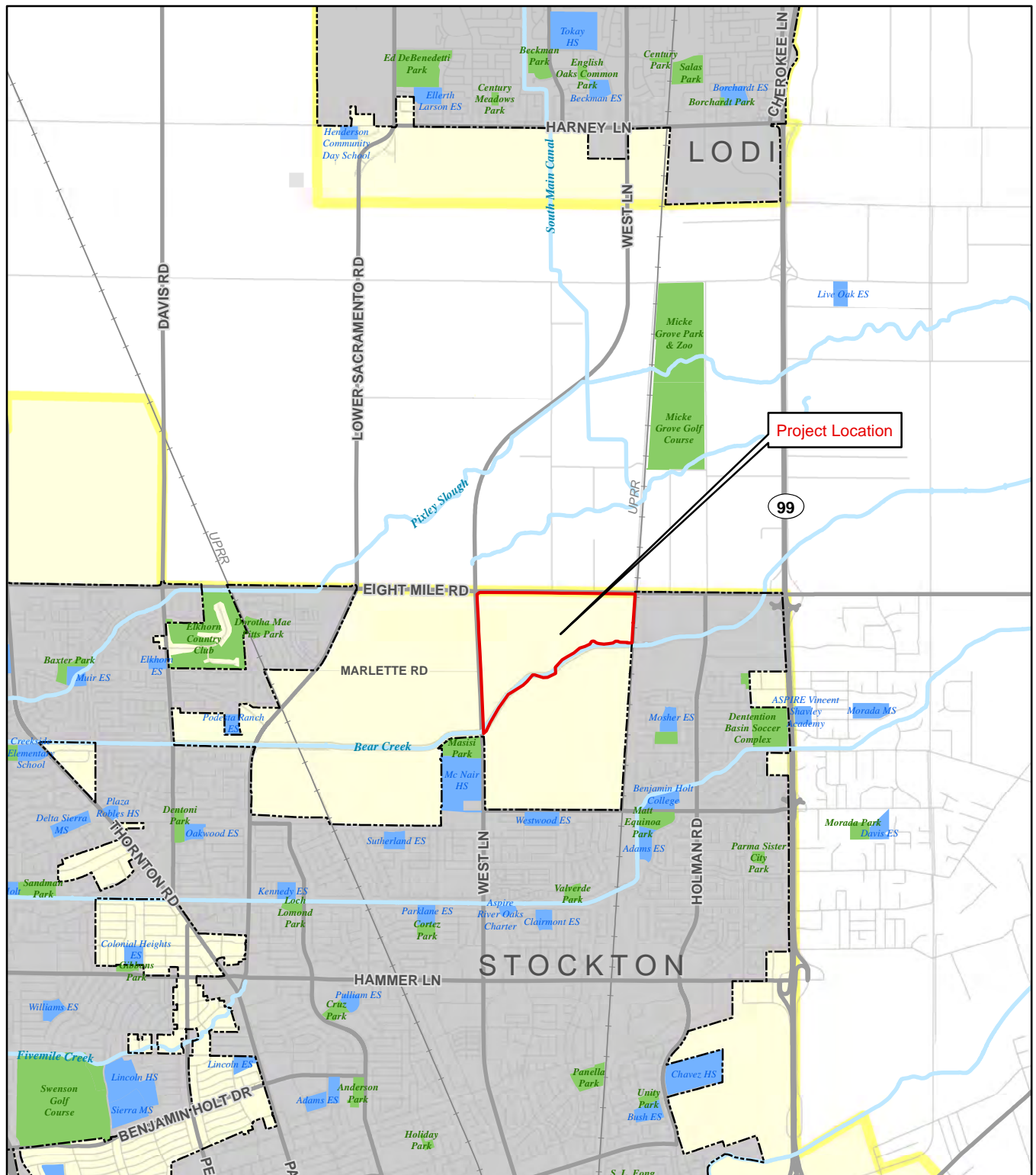
2.0.7 PROJECT ALTERNATIVES DESCRIPTIONS

Five alternatives to the proposed Project were developed based on input from City staff and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following five alternatives in addition to the proposed Project. Each alternative is described in detail in Chapter 5.0.

- No Build Alternative
- With Bridge Alternative
- General Plan 2035 Alternative
- Reduced Project Alternative
- Reduced Intensity/Density Alternative



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TRA VIGNE

Figure 2-2: Project Vicinity

Legend

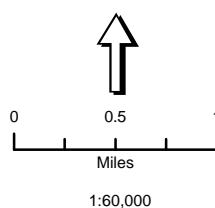
City Limits

Sphere of Influence

Public School

Park

USGS Stream/River

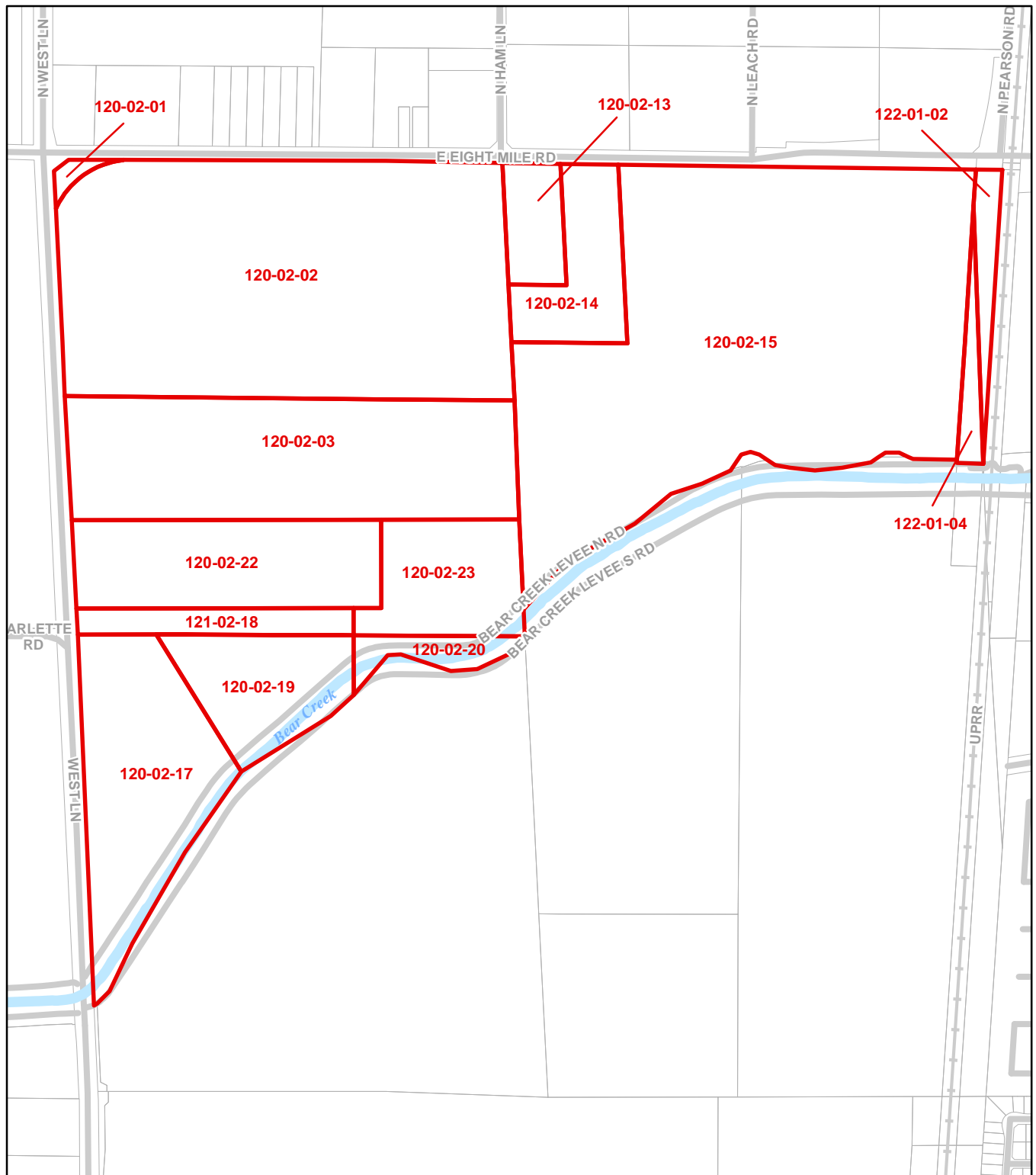


Data sources: North Star Engineering Group, Inc., December 16, 2015; San Joaquin County GIS; USGS National Hydrography Data Set. Map date: May 17, 2016.

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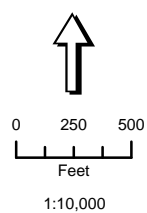


TRA VIGNE

Figure 2-3: APN Map

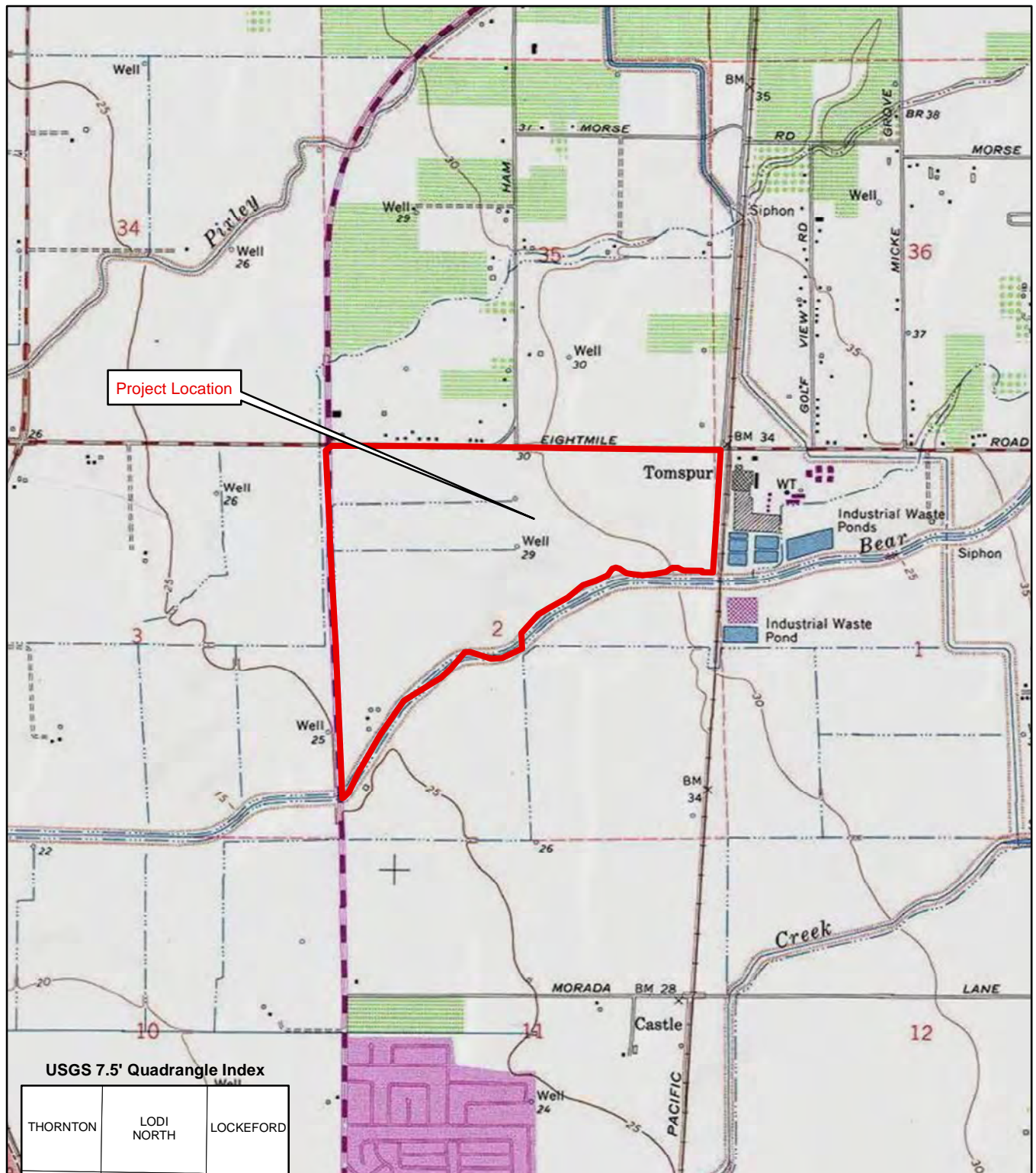
Legend

Project Site Parcels




Data sources: San Joaquin County GIS; City of Stockton GIS.
Map date: May 17, 2016.

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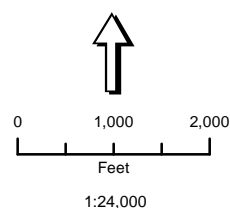


USGS 7.5' Quadrangle Index

THORNTON	LODI NORTH	LOCKEFORD
TERMINOUS	LODI SOUTH 	WATERLOO
HOLT	STOCKTON WEST	STOCKTON EAST

TRA VIGNE

Figure 2-4: USGS Topographic Map
Lodi South Quadrangle



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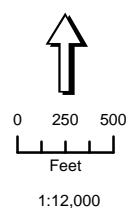


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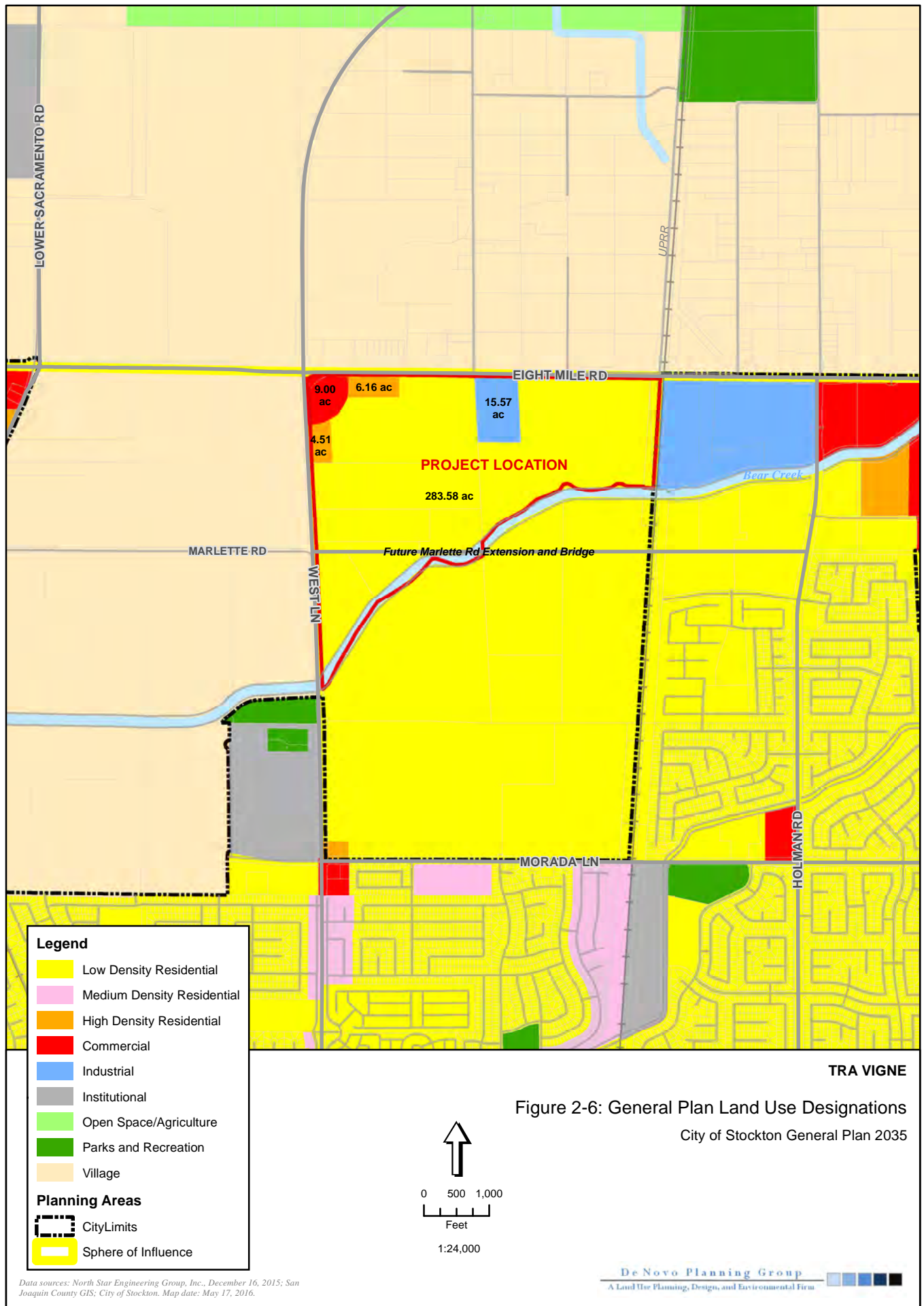
Figure 2-5: Aerial View of Project Site

Legend

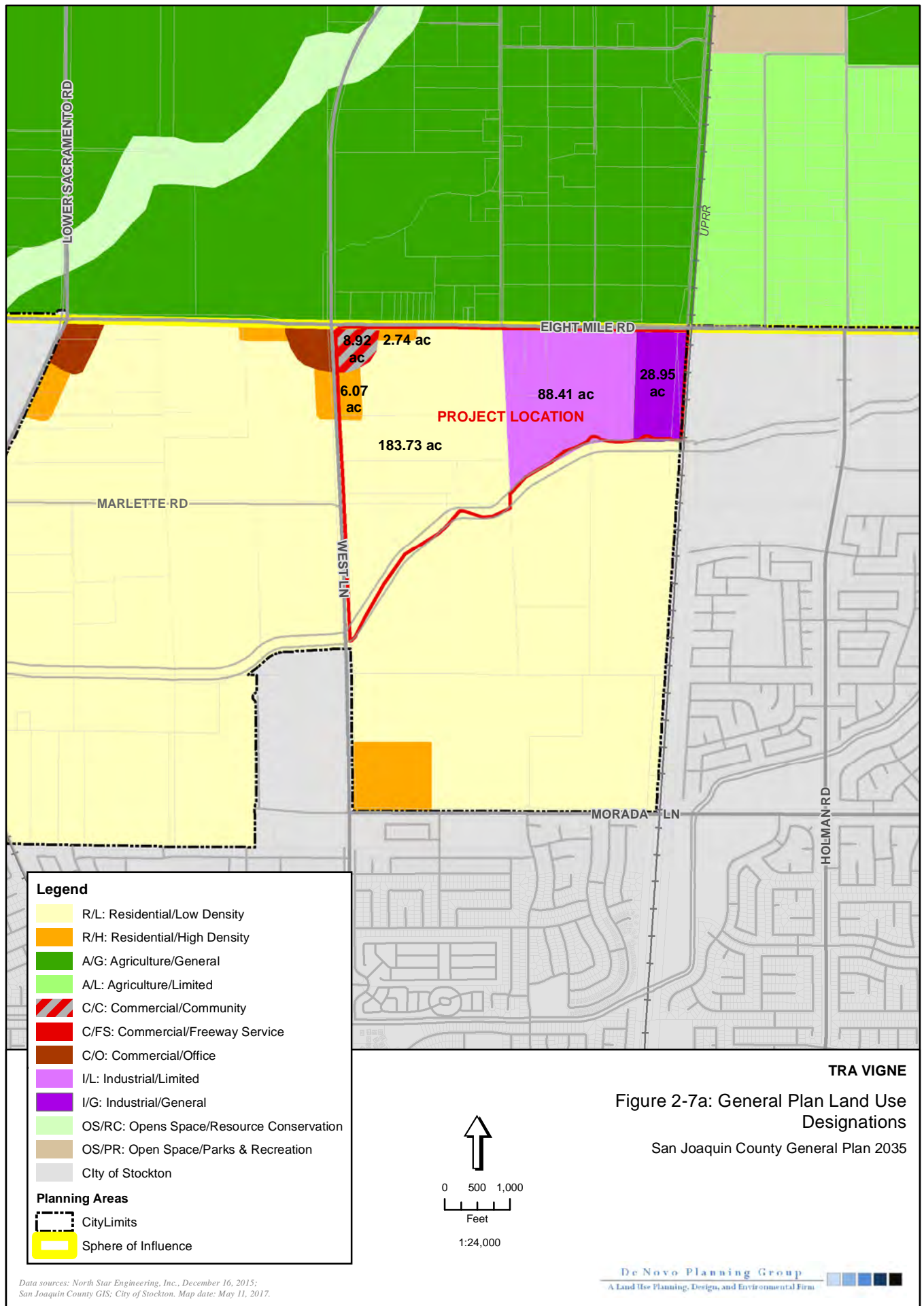
Project Boundary



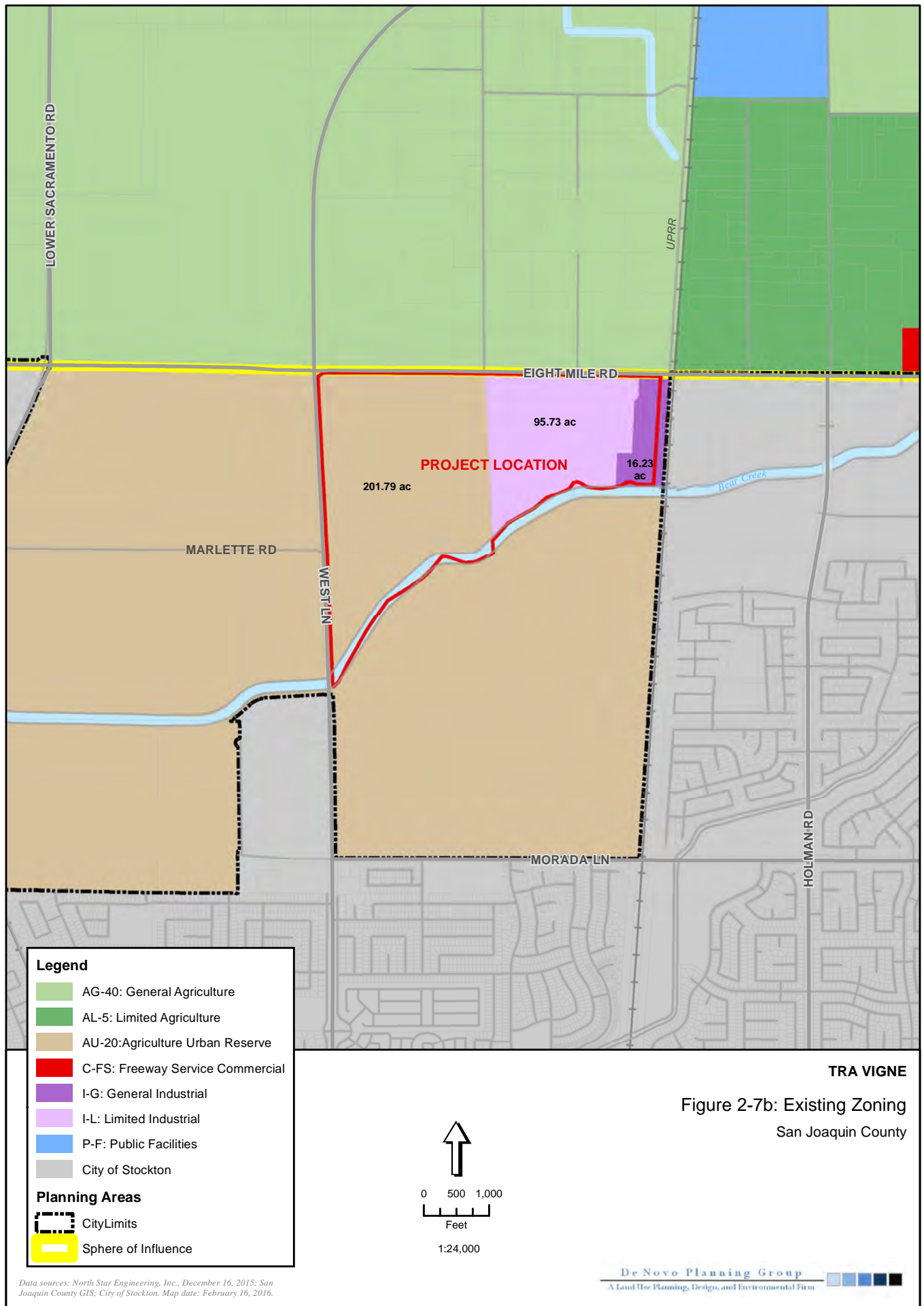
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LAND USE LEGEND-WEST SIDE	
COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	9.5 ACRES
NON-TRADITIONAL PARK AREA	13.75 ACRES
TOTAL RL LOTS	655
TOTAL HO UNITS	340
LAND USE LEGEND-EAST SIDE	
TRADITIONAL PARK AREA	5.57 ACRES
NON-TRADITIONAL PARK AREA	6.61 ACRES
TOTAL RL LOTS	418
LAND USE LEGEND-TOTAL	
COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	15.07 ACRES
NON-TRADITIONAL PARK AREA	20.35 ACRES
TOTAL RL LOTS	1,073
TOTAL HO UNITS	340

TRA VIGNE

Figure 2-8a: Site Plan

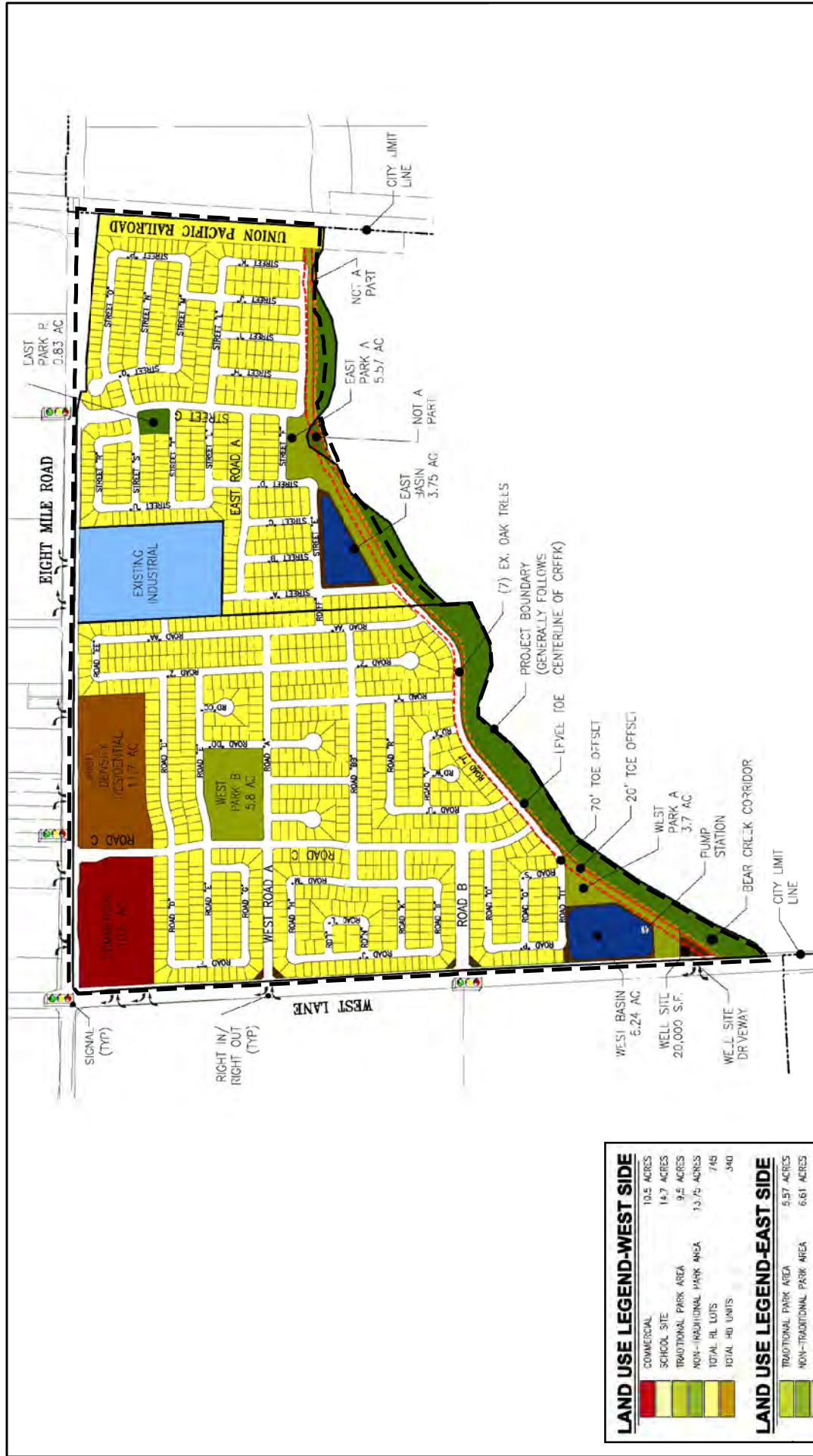
0 250 500 Feet

1:12,000

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Data sources: NorthStar Engineering Group, Tra Vigne Ltd
Layout Exhibit, April 3, 2017. Map date: April 27, 2017.

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TRA VIGNE

Figure 2-8b: Without School Site Plan

0 250 500 Feet

1:12,000

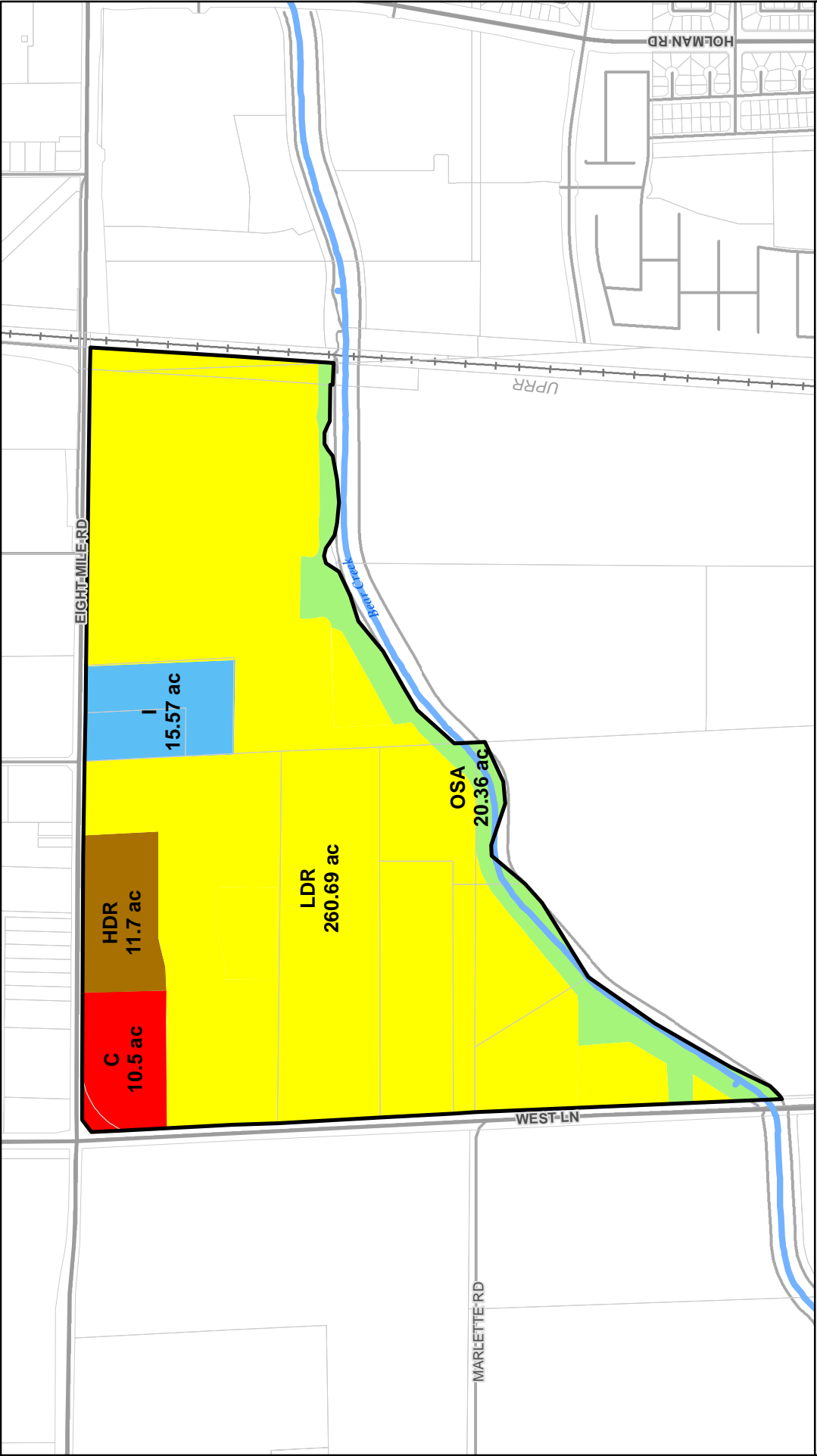
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Data sources: NorthStar Engineering Group, Tra Vigne Lot Layout Exhibit Scenario 43.a.2, April 3, 2017. Map date: April 27, 2017.

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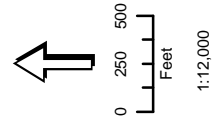


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TRA VIGNE

Figure 2-9: Proposed General Plan Land Use Designations

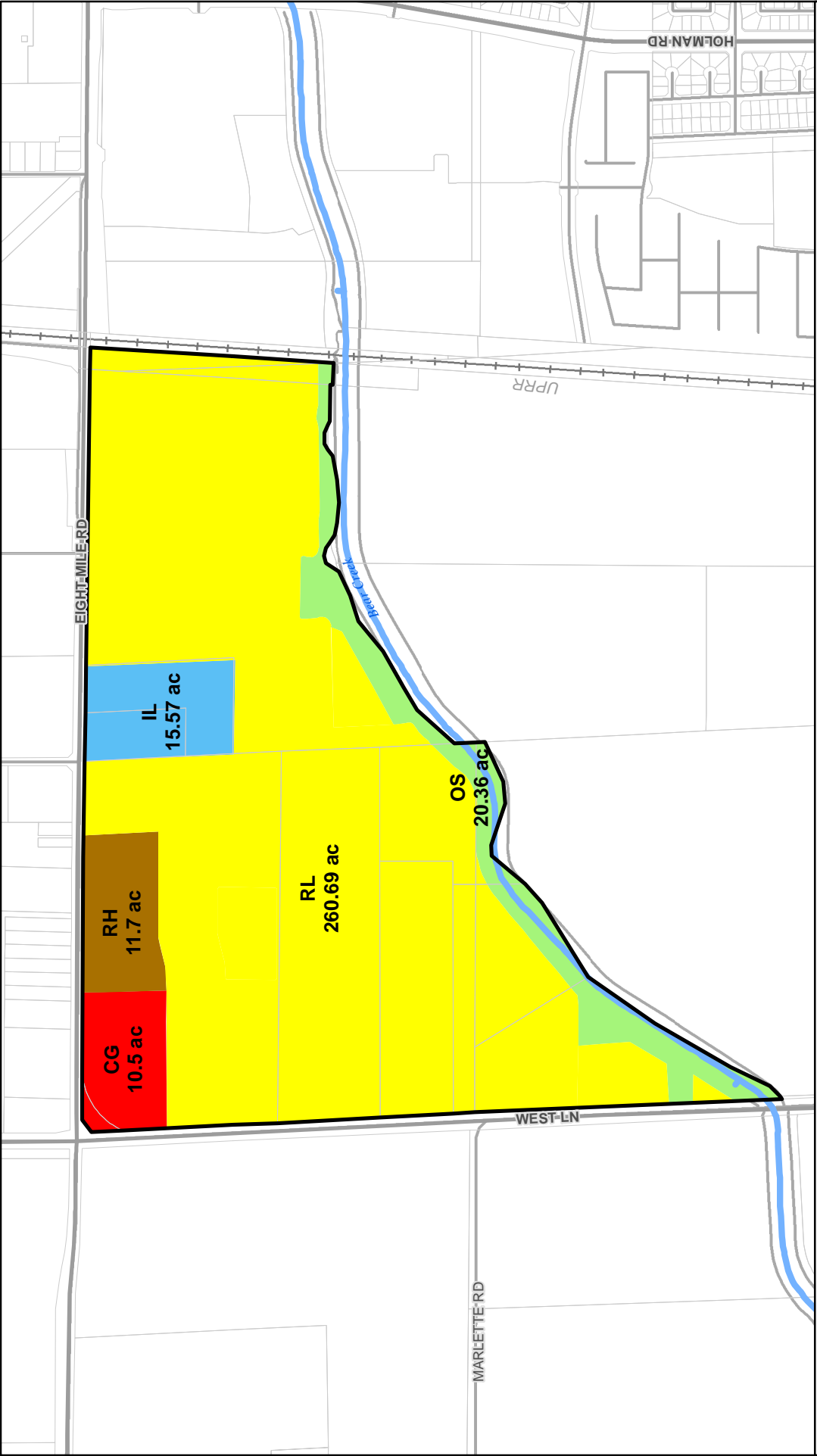


- Legend**
- LDR-Low Density Residential
 - HDR-High Density Residential
 - C-Commercial
 - I-Industrial
 - OSA-Open Space/Agriculture

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Data sources: NorthStar Engineering Group; San Joaquin County; USGS National Hydrography Dataset. Map date: April 27, 2017.

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Legend

- RL - Residential, Low Density
- RH - Residential, High Density
- CG - Commercial, General
- IL - Industrial, Limited
- OS - Open Space

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Figure 2-10: Pre-Zoning Designations

0 250 500 Feet

1:12,000

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Data sources: NorthStar Engineering Group; San Joaquin County; USGS National Hydrography Dataset. Map date: April 27, 2017.

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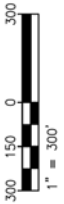
Figure 2-11. Water Exhibit

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LEGEND

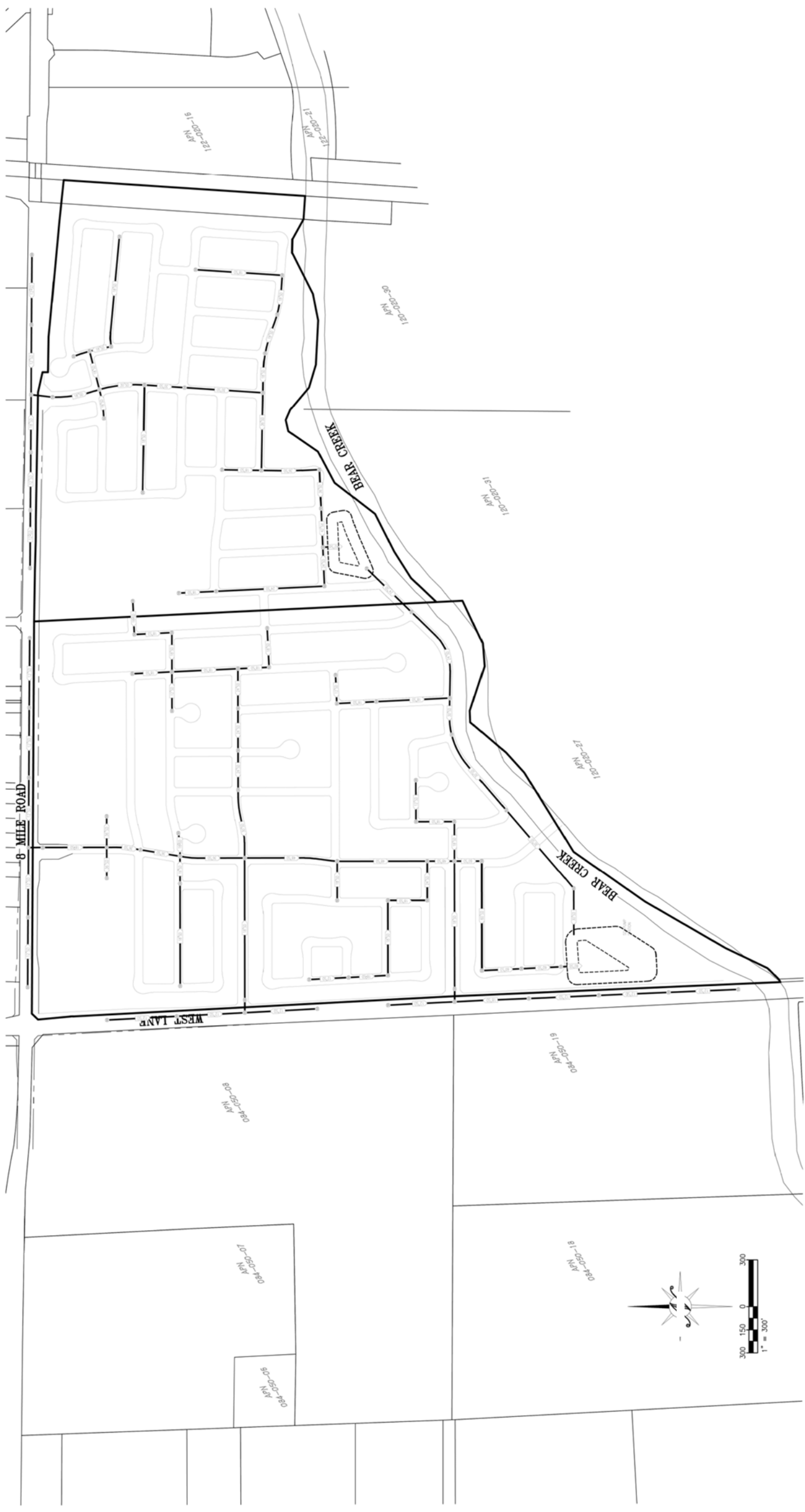
- BACKBONE TRUNK SEWER LINES
- 8" DISTRIBUTION SEWER LINES
- STREETS WITH FLYLINES



TRA VIGNE

Figure 2-12. Sewer Exhibit

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TRA VIGNE

Figure 2-13. Storm Water Exhibit

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3.0.1 INTRODUCTION

ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

This chapter of the EIR contains an analysis of each environmental topic area that the City of Stockton determined to need further environmental analysis. Each subsection is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topic area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the proposed Project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact after any recommended mitigation.

ENVIRONMENTAL TOPICS ANALYZED

Consistent with Appendix G of the CEQA Guidelines, the following environmental topics are addressed in this chapter of the EIR:

- 3.1 Aesthetics and Visual Resources
- 3.2 Agricultural Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural and Tribal Resources
- 3.6 Geology and Soils
- 3.7 Greenhouse Gases and Climate Change
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Population
- 3.11 Noise
- 3.12 Public Services and Recreation
- 3.13 Transportation and Circulation
- 3.14 Utilities and Service Systems

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact addressed in this chapter of the EIR, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the five impact evaluation criteria described below.

- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

- **Less than Significant Impact.** A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- **Potentially Significant Impact.** This response is appropriate when there is substantial evidence that an effect is significant.
- **Less than Significant With Mitigation Incorporated.** This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact".
- **Significant and Unavoidable Impact.** This response is appropriate when there is substantial evidence that an effect is significant, and the effect cannot be avoided, even with implementation of feasible mitigation measures.

3.1.1 INTRODUCTION

This section provides a discussion of viewsheds, proximity to scenic roadways and scenic vistas, and existing lighting standards. This section of the EIR identifies applicable General Plan policies that protect the visual values located along public roadways and surrounding land uses, and addresses the potential for the project to substantially impair the visual character of the project vicinity. The analysis also addresses potential impacts associated with light spillage onto adjacent properties during nighttime activities. There were no comments received during the NOP scoping process related to this environmental topic

3.1.2 ENVIRONMENTAL SETTING

REGIONAL SCENIC RESOURCES

Visual resources are generally classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually mid-ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements.

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural water bodies. Features of the built environment that may also have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, and a location where a historic event occurred.

SCENIC HIGHWAYS AND CORRIDORS

Scenic highways and corridors make major contributions to the quality of life enjoyed by the residents of a region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the local lifestyle are all ways in which scenic corridors are valuable to residents.

Scenic highways and corridors can also strengthen the tourist industry. For many visitors, highway corridors will provide their only experience of the region. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the region's economy.

Scenic Highways

A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

Scenic Corridors

A scenic corridor is the view from the road that may include a distant panorama and/or the immediate roadside area. A scenic corridor encompasses the outstanding natural features and landscapes that are considered scenic. It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.
- Gateways - locations which mark the entrance to a community or geographic area.

San Joaquin County Scenic Highways/Corridors

Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System: the segment of State Route (SR) 580 from Interstate 5 (I-5) to SR 205. This route traverses the edge of the Coast Range to the west and Central Valley to the east. The City of Stockton and the Project site are not visible from these roadway segments.

As identified in the Open Space Element of the San Joaquin County General Plan, designated scenic routes in the County include I-5 from the Sacramento County line south to Stockton. Portions of the City of Stockton are visible from this segment of I-5. However, the Project site is not visible from this segment of I-5.

SCENIC WATER RESOURCES AND WILD AND SCENIC RIVERS

Water resources are important visual resources that draw tourists to the area for recreational opportunities. The most visually significant water bodies in the region include the San Joaquin River, the Calaveras River, and the larger Delta.

Wild and Scenic Rivers

Federal agencies have jurisdiction, under the Wild and Scenic Rivers Act, to designate rivers or river sections to “be preserved in free-flowing condition and...protected for the benefit and enjoyment of present and future generations.”

The San Joaquin River and the Calaveras River are not designated as Wild and Scenic Rivers under the Federal Wild and Scenic Rivers Act. In addition, Bear Creek, which is located along the southern boundary of the Project site, is not designated as Wild and Scenic River under the Federal Wild and Scenic Rivers Act.

PROJECT SITE

The proposed Project site is located in the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County; the Project area is adjacent to the City of Stockton city limits to the east, and within the Stockton Sphere of Influence (SOI) (as defined in the Stockton General Plan); and within the City of Stockton Urban Services Boundary. The Project site is located immediately southeast of the intersection of West Lane and Eight Mile Road. Figures 2-1 and 2-2 illustrate the regional location and Project vicinity.

The Project site consists largely of active agricultural fields (roughly 253 acres in production). The Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site, including Pacific Bell, and Bragg Investment Company.

The Project site encompasses approximately 318.82 acres of developed (approximately 15.57 acres) and undeveloped (approximately 303.25 acres) land and consists largely of vacant fields that have been leveled for agricultural use. The Project site is relatively flat and ranges in elevation from approximately 25 to 35 feet above sea level. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. In addition, an irrigation catch pond runs along the northern boundary of the Project site. Power transmission lines are located along West Lane and Eight Mile Road. Additionally, power lines are present within the Project site running north and south roughly bisecting the Project site.

As a result of site disturbance associated with agricultural operations/farming, limited natural scenic areas can be found within the Project site. There is little native vegetation or naturalized habitat located on the site, and the flat topography of the site renders the site essentially void of prominent natural visual features.

While this land is disturbed from its natural condition, developed agricultural land can provide visual relief to a passerby/viewer from common man-made structures and visual obstructions found in an urban environment. Agricultural lands provide a sense of openness that is common in natural environments. Throughout the year, typical agricultural operations would result in the land evolving from an environment that appears lush with vegetation (green crops) to an environment that appears barren (recently tilled). According to the City’s General Plan Draft EIR, the most

3.1 AESTHETICS AND VISUAL RESOURCES

significant features within the General Plan Study Area are existing agricultural and open space areas.¹

The Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The Project site is bordered to the east by the City of Stockton city limits and existing industrial development within the City. The parcels to the east of the Project site are designated I Industrial, C Commercial, LDR Low Density Residential, and HDR High Density Residential. The parcels designated for residential uses immediately southeast of the Project site are currently undeveloped agricultural land. The parcels to the south of the Project site are designated LDR, MDR Medium Density Residential, HDR, and C by the Stockton General Plan and R/L Low Density Residential and R/H High Density Residential by the San Joaquin County General Plan. However, the parcels to the south are currently undeveloped agricultural land. Ronald McNair High School is located immediately southwest of the Project site. The Project site is bordered on the west by West Lane with additional undeveloped agricultural land west of West Lane. Land lying to the west of the site is designated V Village by the Stockton General Plan and R/L, R/H, and C/O Office Commercial by the San Joaquin County General Plan. Land north of the Project site is designated V by the City's General Plan and A/G General Agriculture and OS/O Resource Conservation by the County's General Plan. The existing uses north of the Project site include large-lot single family residences and agricultural land.

There are no Officially Designated Scenic Highways located through or adjacent to the Project site. The only Officially Designated Scenic Highway in San Joaquin County is I-580 from I-5 to SR 205 located approximately 26.3 miles southwest of the Project site. This scenic highway is not visible from the Project site.

There are minimal existing light sources on the Project site. Two industrial structures are located in the north-central portion of the Project site. The structures consist of two warehouses with associated parking lots, and include minimal security and outdoor lighting in the parking areas. Other existing lighting in the vicinity of the Project site includes: industrial area lighting on lands to the east, street lighting near the UPRR overpass along Eight Mile Road, street and stadium lighting at Ronald McNair High School, and lighting from residential areas to the north, northeast, southeast, and south of the Project site.

¹ City of Stockton. Stockton General Plan 2035 Environmental Impact Report. Stockton, CA. Draft – December 1, 2006. Page 13-40.

3.1.3 REGULATORY SETTING

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is “to protect and enhance California’s natural scenic beauty and to protect the social and economic values provided by the State’s scenic resources.” Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code §260 et seq. The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are officially designated or eligible for designation as scenic. Scenic highway designation can provide several types of benefits to the region. Scenic areas are protected from encroachment of inappropriate land uses, free of billboards, and are generally required to maintain existing contours and preserve important vegetative features. Only low density development is allowed on steep slopes and along ridgelines on scenic highways, and noise setbacks are required for residential development.

LOCAL

The City of Stockton General Plan identifies the importance of scenic resources in establishing community identity. The Stockton Municipal Code contains standards, provisions, and procedures related to landscaping design, light and glare, and design review.

City of Stockton General Plan

The following goals and policies of the Stockton General Plan related to aesthetics and visual resources are applicable to the proposed Project.

Natural & Cultural Resources Element

NATURAL & CULTURAL RESOURCES POLICY

- NCR-2.18. Minimize Lighting Impacts. The City shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions.

SCENIC RESOURCES GOAL

- NCR-6. To provide and maintain open space resources in Stockton and surrounding areas.

SCENIC RESOURCES POLICIES

- NCR-6.1. Community Design. The City shall ensure that development incorporate open space areas that provide community and neighborhood identity and insulate conflicting land uses and noise generators.

3.1 AESTHETICS AND VISUAL RESOURCES

- NCR-6.2. Landscaped Corridors. The City shall ensure that the design of major arterials includes landscaped median strips to enhance these street systems as aesthetic open space corridors.

Community Design Element

GENERAL COMMUNITY DESIGN GOAL

- CD-1. To improve the overall visual quality of the urban environment.

GENERAL COMMUNITY DESIGN POLICIES

- CD-1.1. Urban Design Plans. The City shall ensure that plans for districts, corridors and villages reflect citywide urban design concepts set out in the General Plan.
- CD-1.2. Contrast Between Urban and Rural. The citywide design framework shall heighten the contrast between rural, natural, and urban areas as one enters and travels throughout the community.
- CD-1.4. Transition to Rural Landscapes. Transitions between urban and rural areas at the edge of the community shall not diminish the visual quality of open space. Soundwalls and utilitarian edges of developments shall not be allowed as an interface between development and rural landscapes.
- CD-1.6. Open Space Features. The City shall promote community design that incorporates the open space features of Stockton's waterways, wetlands, and parks into the travel experience. This includes visual access to open space features and private and public investment that visually frames and complements natural landscapes and parks.

COMMERCIAL CORRIDORS GOAL

- CD-3. To improve the image of Stockton's existing strip districts and corridors.

COMMERCIAL CORRIDORS POLICIES

- CD-3.1. Implementation of Design Objectives. The City shall require that renovated and new development contributes to the implementation of the General Plan's community design objectives and concepts for commercial corridors and districts.
- CD-3.2. Site Planning. The City shall require that renovated and new commercial buildings and centers be planned and designed so that the location and shape of buildings contribute to the corridor's identity and urban design concepts. This includes the orientation of buildings, composition of roof forms, and architectural treatments.

DISTRICTS, VILLAGES, AND NEIGHBORHOODS GOAL

- CD-4. To create new districts and neighborhoods with a sense of place.

DISTRICTS, VILLAGES, AND NEIGHBORHOODS POLICIES

- CD-4.1. Creating Central Places. Stockton's citywide land use and transportation planning shall support the creation of "central places" that provide social, economic and identity of districts and villages.
- CD-4.2. Clear Organizational Structure. The City shall require that districts and villages incorporate a clear organizational design structure. The urban design concept for districts

and villages shall make it a distinctive address with a clear hierarchy of streets and focal points.

- CD-4.3. District Gateways. The City shall require that districts and villages include a deliberate gateway and entrance design that is inviting, attracting and complementary to the overall design of the district or village.
- CD-4.4. Creating Central Places. Commercial uses shall be integrated into the design of each village and neighborhood. Commercial and higher density residential development shall be planned to transition in scale and use to promote pedestrian and visual connections to residential neighborhoods. Village center commercial and residential uses shall interface around streets and open spaces to activate public places.

PUBLIC WORKS POLICY

- CD-6-6. Lighting. The City shall continue to improve and maintain proper lighting in park facilities and fields without undue nuisance light and glare spillage on adjoining residential areas.

DESIGN REVIEW GOAL

- CD-7. To convey and enforce expectations for higher quality design.

DESIGN REVIEW POLICY

- CD-7.1. Design Review Process. The City shall ensure that public and private projects comply with City design policies, plans, and guidelines through a Citywide Design Review Process.

City of Stockton Municipal Code

Section 16.56.240, Landscape Standards, of Chapter 16.56, Landscaping Standards, of the City Municipal Code contains standards and provisions related to landscaping design, installation, and maintenance. The primary purpose of this section is to provide general design standards and plant material requirements. This section also includes provisions related to water efficient landscaping consistent with the State Model Water Efficient Landscape Ordinance that would apply to the proposed Project. Section 16.72.240, Landscaping, of Chapter 16.72, Public Improvements, of the City Municipal Code contains standards and provisions related to landscaping for nonresidential and residential development. This section includes provisions related to landscape design that would apply to the proposed Project. These applicable provisions include street tree and other landscaping area design standards for residential subdivisions, setback area landscaping standards for nonresidential subdivisions, and standards for irrigation, installation, and maintenance of landscaping.

Section 16.32.070, Light and Glare, of Chapter 16.32, General Performance Standards, of the City Municipal Code contains standards and provisions related to exterior lighting for both commercial and residential development. The primary purpose of this section is to regulate exterior lighting to balance the safety and security needs for lighting with the City's desire to prevent emissions of light or glare beyond the property line, or upward into the sky.

Chapter 16.120, Design Review, of the City Municipal Code establishes procedures for the design review of development throughout the City in order to encourage development that is compatible and harmonious with the design and use of surrounding properties and with the City in general. The primary purpose of this chapter is to set forth the types of projects that are subject to the City's design review process, the use of the design guidelines, and the application filing, processing and review procedures.

3.1.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character. (Significant and Unavoidable)

Proposed Project:

Development of the proposed Project would convert the site from its existing use as primarily agricultural land to developed single family residential housing, a general commercial area, a high density residential area, and four park areas and an open space area along the Bear Creek corridor.

Project components would include:

- Construction of up to 1,413 residential units (995 Tra Vigne West and 418 Tra Vigne East).
- Development of 10.5 acres of commercial uses.
- Development of 15.07 acres of traditional park space (9.5 acres at the Tra Vigne West property and 5.57 acres at the Tra Vigne East property).

- Establishment of a 10.0-acre K-8 school site.
- Maintenance of 20.36 acres of open space uses adjacent to the Bear Creek corridor.
- Construction of roadways, pedestrian pathways, sewers, detention basins, storm drainage and other public infrastructure to allow for access to and development of the site.

The Project site is not designated as a scenic vista by the City of Stockton General Plan or the San Joaquin County General Plan, nor does it contain any unique or distinguishing features that would qualify the site for designation as a scenic vista.

The Project site is, however, highly visible from West Lane and Eight Mile Road. Implementation of the proposed Project would change the existing visual character of the site from a primarily agricultural site to an urbanized site. Impacts related to a change in visual character are largely subjective and very difficult to quantify. People have different reactions to the visual quality of a project or a project feature, and what is considered “attractive” to one viewer may be considered “unattractive” to other viewers. The Project site currently consists of agricultural lands and industrial development. The industrial uses would remain under the proposed Project. Agricultural lands provide visual relief from urban and suburban developments, and help to define the character of a region. The loss of agricultural lands can have a cumulative impact on the overall visual character and quality of a region.

As described above, Project implementation would introduce residential, commercial, public, and parkland/open space uses, as well as supporting infrastructure into an area that is primarily undeveloped and is occupied by agricultural and industrial uses. Implementation of the proposed Project would introduce developed urban land uses into an area that is largely undeveloped and void of structures and impervious surfaces, with the exception of the existing industrial uses within the north-central portion of the Project site.

The Project would include visual components that would assist in enhancing the appearance of the site following site development. These components would include landscaping improvements such as new street trees and other vegetation landscaping. The Project would also result in the construction of four park areas totaling 15.07 acres, which will result in areas of green space within the residential portion of the Project site. Additionally, 19.53 acres of open space would be provided along the Bear Creek corridor. The open space area along the southern boundary of the site would provide a transition from the existing agricultural land to the south to the proposed residential uses on the Project site.

While implementation of the proposed Project would change the existing visual character of the site, it would not result in substantial adverse effects on a designated scenic vista. There are no proposed structures over 35 feet high that would impede views of the surrounding agricultural areas from the Project vicinity.

The proposed Project would result in the conversion of the undeveloped land from agricultural uses, which would contribute to changes in the regional landscape and visual character of the area. In order to reduce visual impacts, development within the Project site is required to be

3.1 AESTHETICS AND VISUAL RESOURCES

consistent with the General Plan and the Stockton Municipal Code, which includes design standards in order to ensure quality and cohesive design of the Project site. These standards include specifications for building height, massing, and orientation; exterior lighting standards and specifications; and landscaping standards. Implementation of the design standards would ensure quality design throughout the Project site, and result in a project that would be internally cohesive while maintaining aesthetics similar to the existing and future surrounding uses.

Nevertheless, the loss of the visual appearance of the existing agricultural land on the site will change the visual character of the Project area in perpetuity. Compliance with Stockton's Zoning District Development Standards for height and bulk, and landscaping requirements found in Chapters 16.56 and 16.72 of the Municipal Code, would reduce visual impacts to the greatest extent feasible; however, the Project would permanently convert the agricultural uses to urbanized uses. This is considered a **significant and unavoidable** impact. There is no additional feasible mitigation available that would reduce this impact to a less than significant level.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in substantial adverse effects on scenic vistas and resources or substantial degradation of the visual character of the Project area. Under this alternative, the significant and unavoidable visual impact identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmental superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres.

The With Bridge Alternative would result in the conversion of the undeveloped land from agricultural uses, which would contribute to changes in the regional landscape and visual character of the area. Under this alternative, the significant and unavoidable visual impact identified under the proposed Project would occur. Unlike the proposed Project, this alternative would include a bridge across the Bear Creek corridor. Construction of the bridge would change the visual quality of the Bear Creek corridor by introducing an elevated bridge structure into the existing natural open space environment, which would result in greater impacts to the visual character of the Bear

Creek corridor area as compared to the proposed Project. Similar to the proposed Project, development of the With Bridge Alternative would be subject to the requirements of the General Plan and the Stockton Municipal Code, which includes design standards in order to ensure quality and cohesive design of the Project site. As such, similar to the proposed Project, there would be a **significant and unavoidable** impact associated with the change in visual character and quality. There is no additional feasible mitigation available that would reduce this impact to a less than significant level. Compared to the proposed Project, this alternative is slightly inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

The General Plan 2035 Alternative would result in the conversion of the undeveloped land from agricultural uses, which would contribute to changes in the regional landscape and visual character of the area. Under this alternative, the significant and unavoidable visual impact identified under the proposed Project would occur. Unlike the proposed Project, this alternative would include a bridge across the Bear Creek corridor. Construction of the bridge would reduce the amount of green space along the Bear Creek corridor, which would result in greater impacts to the visual character of the area as compared to the proposed Project. Similar to the proposed Project, development of the General Plan 2035 Alternative would be subject to the requirements of the General Plan and the Stockton Municipal Code, which includes design standards in order to ensure quality and cohesive design of the Project site. As such, similar to the proposed Project, there would be a **significant and unavoidable** impact associated with the change in visual character and quality; however, this alternative would have slightly worse visual impacts than the proposed Project. There is no additional feasible mitigation available that would reduce this impact to a less than significant level. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail

3.1 AESTHETICS AND VISUAL RESOURCES

shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

The Reduced Project Alternative would result in the conversion of the undeveloped portion of the Project site from agricultural uses to residential uses, which would contribute to changes in the regional landscape and visual character of the area. However, approximately 33 percent of the Project site would remain undeveloped, the number of residential units would be reduced by approximately 472 units, and the commercial component of the proposed Project would be eliminated. The reduced disturbance area would result in slightly less impact to the visual character of the area as compared to the proposed Project. Similar to the proposed Project, development of the Reduced Project Alternative would be subject to the requirements of the General Plan and the Stockton Municipal Code, which includes design standards in order to ensure quality and cohesive design of the Project site. As such, similar to the proposed Project, there would be a **significant and unavoidable** impact associated with the change in visual character and quality; however, this alternative would have slightly less visual impact than the proposed Project because less agricultural land would be converted. There is no additional feasible mitigation available that would reduce this impact to a less than significant level. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

The Reduced Intensity/Density Alternative would result in the conversion of the undeveloped portion of the Project site from agricultural uses to residential uses, which would contribute to changes in the regional landscape and visual character of the area. Although this alternative would reduce the number of residential units by 283 (with school) to 301 (without school) units when compared to the proposed Project, the Reduced Intensity/Density Alternative would require equal disturbance to the Project site when compared to the proposed Project. Under this alternative, the significant and unavoidable visual impact identified under the proposed Project would occur. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the General Plan and the Stockton Municipal Code, which includes design standards in order to ensure quality and cohesive design of the Project site. Similar to the proposed Project, there would be a **significant and unavoidable** impact associated with the change in visual character and quality. There is no additional feasible mitigation available that

would reduce this impact to a less than significant level. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.1-2: Project implementation may substantially damage scenic resources within a State Scenic Highway. (Less than Significant)

Proposed Project:

There are no designated State Scenic Highways in the vicinity of the Project site. Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of I-580 from I-5 to SR 205. This route traverses the edge of the Coast Range to the west and Central Valley to the east. This Designated Scenic Highway is located approximately 26.3 miles southwest of the Project site. The City of Stockton and the Project site are not visible from this roadway segment.

As identified in the Open Space Element of the San Joaquin County General Plan, designated scenic routes in the county include I-5 from the Sacramento County line south to Stockton. The Project site is not visible from this segment of I-5. Additionally, there are no “eligible” highway segments in the Project vicinity that may be included in the State Scenic Highway system. As such, this is a **less than significant** impact, and no mitigation is required.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. As noted above, designated State Scenic Highways are not located in the vicinity of the Project site, and the Project site is not visible from any other designated scenic routes. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

As noted above, under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As noted above, designated State Scenic Highways are not located in the vicinity of the Project site, and the Project site is not visible from any other designated scenic routes. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. As noted above, designated State Scenic Highways are not located in the vicinity of the Project site, and the Project site is not visible from any other designated scenic routes. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

3.1 AESTHETICS AND VISUAL RESOURCES

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses. As noted above, designated State Scenic Highways are not located in the vicinity of the Project site, and the Project site is not visible from any other designated scenic routes. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted above, designated State Scenic Highways are not located in the vicinity of the Project site, and the Project site is not visible from any other designated scenic routes. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.1-3: Project implementation may result in light and glare impacts. (Less than Significant with Mitigation)

Proposed Project:

Implementation of the proposed Project would introduce new sources of light and glare into the Project area. New sources of glare would occur primarily from outdoor residential lighting, the windshields of vehicles travelling to and from the Project site, and from vehicles parked at the site. There is also the potential for reflective building materials and windows to result in increases in daytime glare.

Section 16.32.070, Light and Glare, of the Stockton Municipal Code states that light or glare from mechanical or chemical processes or from reflective materials used or stored on a site shall be shielded or modified to prevent emission of light or glare beyond the property line, or upward into the sky. Additionally, Section 16.32.070 of the Municipal Code contains standards and provisions related to exterior lighting for both commercial and residential development. The primary purpose of this Section is to regulate exterior lighting to balance the safety and security needs for lighting with the City's desire to prevent emissions of light or glare beyond the property line, or upward into the sky.

The Stockton General Plan EIR determined the impact of new sources of light and glare can be minimized by incorporating design features and operating requirements into new developments that limit light and glare. Policy CD-6.6 requires proper lighting in park facilities and fields without undue nuisance lighting and glare to prevent spillage on adjoining residential areas. Policy NCR-2.18 requires that residential areas and roadways be designed to prevent artificial lighting from

reflecting into adjacent natural or open space areas. The City of Stockton Municipal Code has requirements for lighting and glare to reduce the impacts of glare and light trespass.

A detailed lighting plan has not been prepared for the Project, but for the purposes of this analysis, it has been conservatively assumed that nighttime street lighting, exterior residential, outdoor park/recreational, and safety lighting will be installed throughout areas of the Project site. It is assumed that security lighting will be installed within the various parking areas throughout the general commercial area and the potential school site area.

The proposed Project lighting would be installed as per the City of Stockton standards and specifications, and would be required to incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, the addition of nighttime lighting is a potentially significant impact. Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.1-1: A lighting plan for all parcels shall be prepared prior to the approval of the Improvement Plans for each individual phase of development. The lighting plan shall demonstrate that the lighting systems and other exterior lighting throughout the residential, commercial, and open space portions of the Project site have been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. The lighting plan shall be submitted to the City of Stockton Community Development Department for review and approval.

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.1-1 presented above requires a lighting plan to be submitted prior to the approval of Improvement Plans for each phase of development. Implementation of Mitigation Measure 3.1-1 would reduce impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sources of light or glare into the Project area. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, additional lighting may be required for the Marlette Road extension and bridge across Bear Creek.

Similar to the proposed Project, any lighting included under the With Bridge Alternative would be installed as per the City of Stockton standards and specifications, and would be required to

3.1 AESTHETICS AND VISUAL RESOURCES

incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, increase of nighttime lighting is a potentially significant impact. Similar to the proposed Project, implementation of Mitigation Measure 3.1-1 would reduce impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Unlike the proposed Project, additional lighting may be required for the Marlette Road extension and bridge across Bear Creek.

Similar to the proposed Project, any lighting included under the General Plan 2035 Alternative would be installed as per the City of Stockton standards and specifications, and would be required to incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, increase of nighttime lighting is a potentially significant impact. Similar to the proposed Project, implementation of Mitigation Measure 3.1-1 would reduce impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Because the existing industrial uses and the proposed commercial uses would be eliminated from the Project site, the associated sources of light and glare would not result. For example, security lighting would not be installed at the general commercial area in the northwest portion of the Project site. In addition, the existing lighting associated with the industrial uses in the north-central portion of the site would be eliminated.

Similar to the proposed Project, any lighting included under the Reduced Project Alternative would be installed as per the City of Stockton standards and specifications, and would be required to incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, increase of nighttime lighting is a potentially significant impact. Similar to the proposed Project, implementation of Mitigation Measure 3.1-1 would reduce impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Because the proposed commercial uses would be eliminated from the Project site, the associated sources of light and glare would not result. For example, security lighting would not be installed at the general commercial area in the northwest portion of the Project site.

Similar to the proposed Project, any lighting included under the Reduced Intensity/Density Alternative would be installed as per the City of Stockton standards and specifications, and would be required to incorporate design features to minimize the effects of light and glare. However, without a detailed lighting plan, increase of nighttime lighting is a potentially significant impact. Similar to the proposed Project, implementation of Mitigation Measure 3.1-1 would reduce impacts associated with nighttime lighting and light spillage onto adjacent properties to a **less than significant** level. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

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3.2.1 INTRODUCTION

This section provides an overview of the agricultural crops in San Joaquin County and the City of Stockton, agricultural capability of the soils on the Project site, and existing site conditions. The project includes a proposed annexation; therefore, this section also includes the definitions and criteria set forth in the Cortese-Knox-Hertzberg Local Government Reorganization Act pertaining to prime agricultural land. This section concludes with an evaluation of the impacts related to agricultural resources and recommendations for mitigating impacts as needed. Information in this section is derived primarily from the *California Important Farmlands Map* (California Department of Conservation, 2012), the *California Land Conservation (Williamson) Act Status Report* (California Department of Conservation, 2010), the *San Joaquin County Agricultural Report* (San Joaquin County Agricultural Commissioner, 2014), and the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2014).

One comment was received from the California Department of Conservation, Division of Land Resources Protection, during the NOP comment period regarding agricultural resources. This comment noted that the Draft EIR for the Tra Vigne Development Project should: identify the type, amount, and location of farmland conversion; include mitigation measures in order to reduce impacts; identify any impacts on current and future agricultural operations in the vicinity; identify any cumulative impacts agricultural land; and include a discussion on how the City plans to implement its Agricultural Land Mitigation Program. Full comments received are included in Appendix A. Impact 3.2-1 includes a discussion pertaining to conversion of farmland (including the type, amount, and location) as a result of Project implementation. Impact 3.2-3 discussed potential impacts related to agricultural operations adjacent to the Project site. Additionally, cumulative impacts associated with loss of agricultural land are discussed in Impact 4.4 of Chapter 4.30, Other CEQA-Required Topics. The City's Agricultural Land Mitigation Program is discussed in Section 3.2.3, Regulatory Setting, of this section, as well as under Impact 3.2-1.

There are no forest resources located on the Project site or in the City of Stockton; thus, this CEQA topic is not relevant to the proposed Project and will not be addressed further in this EIR.

3.2.2 ENVIRONMENTAL SETTING

SAN JOAQUIN COUNTY AGRICULTURE

San Joaquin County occupies a central location in California's vast agricultural heartland, the San Joaquin Valley. The County's Agricultural Commissioner's most recent published Agricultural Report (2014) contains the following information about agriculture in the County.

Agricultural Value

According to the San Joaquin County General Plan, San Joaquin County has a total land area of 1,440 square miles (920,000 acres). The total acreage of crop land in 2016 was 728,010 or approximately 79%.

3.2 AGRICULTURAL RESOURCES

The gross value of agricultural production in San Joaquin County for 2016 is \$2,337,922,000. This represents a decrease of 14.45 percent from 2015. Table 3.2-1 lists the top eight commodities in San Joaquin County in 2016.

TABLE 3.2-1: SUMMARY COMPARISON OF CROP VALUES

PRODUCT TYPE	2016 VALUE IN DOLLARS
Field Crops	\$174,309,000
Vegetable Crops	\$280,065,000
Fruit and Nut Crops	\$1,221,731,000
Nursery Products	\$107,387,000
Livestock and Poultry	\$127,272,000
Livestock and Poultry Products	\$398,967,000
Seed Crops	\$3,763,000
Apiary Products	\$24,428,000

SOURCE: SAN JOAQUIN COUNTY AGRICULTURAL REPORT, 2016.

CITY OF STOCKTON AGRICULTURE

The Stockton General Plan Study Area encompasses all of the land inside the City limits, the existing General Plan Planning Area, and additional unincorporated land areas that may influence future planning efforts. Urban uses account for only 24 to 26 percent (depending on source) of the Study Area. According to the Stockton General Plan Background Report, the majority of acreage within the City's General Plan Study Area is used for agricultural uses. Field crops, fruits, nuts, and other truck crops account for the largest use. A relatively small percentage (8 percent) of the City's General Plan Study Area is maintained as open space. Large tracts of farmland supplement this designated open space.

AGRICULTURAL CAPABILITY

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) identifies lands that have agriculture value and maintains a statewide map of these lands called the Important Farmlands Inventory (IFI). IFI classifies land based upon the productive capabilities of the land, rather than the mere presence of ideal soil conditions.

The suitability of soils for agricultural use is just one factor for determining the productive capabilities of land. Suitability is determined based on many characteristics, including fertility, slope, texture, drainage, depth, and salt content. A variety of classification systems have been devised by the State to categorize soil capabilities. The two most widely used systems are the Soil Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture, with Class I being the highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating. The IFI is in part based upon both of these two classification systems.

Soil Capability Classification System

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils that are

unsuitable for agriculture. Generally, as the rating of the capability classification increases, yields and profits are more difficult to obtain. A general description of soil classifications, as defined by the NRCS is provided in Table 3.2-2 below.

TABLE 3.2-2: SOIL CAPABILITY CLASSIFICATION

CLASS	DEFINITION
I	Soils have slight limitations that restrict their use.
II	Soils have moderate limitations that restrict choice plants or that require moderate conservation practices.
III	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limits their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plans and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

SOURCE: USDA SOIL CONSERVATION SERVICE.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production, to Grade 6 soils (less than 10) which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 3.2-3.

TABLE 3.2-3: STORIE INDEX RATING SYSTEM

GRADE	INDEX RATING	DEFINITION
1	80 – 100	Few limitations that restrict their use for crops
2	60 – 80	Suitable for most crops, but have minor limitations that narrow the choice of crops and have a few special management needs
3	40 – 60	Suited to a few crops or to special crops and require special management
4	20 – 40	If used for crops, severely limited and require special management
5	10 – 20	Not suited for cultivated crops, but can be used for pasture and range
6	Less than 10	Soil and land types generally not suited to farming

SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF SAN JOAQUIN COUNTY, CALIFORNIA, 1992.

In addition to soil suitability, other factors for determining the agricultural value of land include whether soils are irrigated, the depth of soil, water-holding capacity, and physical and chemical characteristics. Areas considered to have the greatest agricultural potential are designated as Prime Farmland or Farmland of Statewide Importance.

3.2 AGRICULTURAL RESOURCES

Important Farmlands

The FMMP is a farmland classification system administered by the California Department of Conservation. Important farmland maps are based on the Land Inventory and Monitoring criteria, which classify a land's suitability for agricultural production based on both the physical and chemical characteristics of soils, and the actual land use. The system maps five categories of agricultural land, which include Important Farmlands (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) and Grazing Land, as well as three categories of non-agricultural land, which include Urban and Built-Up Land, Other Land, and Water Area.

Data from the Department of Conservation indicates that approximately 762 acres of Prime Farmland in the County were developed for other uses between 2012 and 2014, resulting in an existing total of 382,877 acres of Prime Farmland (51 percent of agricultural land). The remaining agricultural land is comprised of Farmland of Statewide Importance (11 percent), Unique Farmland (10 percent), Farmland of Local Importance (10 percent), and Grazing Land (18 percent). The types and acreages of farmland in 2012 and 2014 are shown below in Table 3.2-4.

TABLE 3.2-4: SAN JOAQUIN COUNTY FARMLANDS SUMMARY AND CHANGE BY LAND USE CATEGORY

LAND USE CATEGORY	2012-14 ACREAGE CHANGES							
	TOTAL ACREAGE INVENTORIED				ACRES LOST	ACRES GAINED	TOTAL	NET
	2012		2014		(-)	(+)	ACREAGE CHANGED	ACREAGE CHANGED
	Acres	Percent	Acres	Percent				
Prime Farmland	382,115	42%	382,877	42%	1,421	2,183	3,604	762
Farmland of Statewide Importance	82,160	9%	82,271	9%	378	489	867	111
Unique Farmland	72,053	8%	76,415	8%	309	4,671	4,980	4,362
Farmland of Local Importance	76,405	8%	73,429	8%	4,821	1,845	6,666	-2,976
IMPORTANT FARMLAND SUBTOTAL	612,733	67%	614,992	67%	6,929	9,188	16,117	2,259
Grazing Land	135,896	15%	132,950	15%	2,996	50	3,046	-2,946
AGRICULTURAL LAND SUBTOTAL	748,629	82%	747,942	82%	9,925	9,238	19,163	-687
Urban and Built-up Land	93,278	10%	93,888	10%	118	728	846	610
Other Land	58,925	6%	59,002	6%	483	560	1,043	77
Water Area	11,764	1%	11,764	1%	0	0	0	0
TOTAL AREA INVENTORIED	912,596	100%	912,596	100%	10,526	10,526	21,052	0

SOURCE: CA DEPARTMENT OF CONSERVATION, DIVISION OF LAND RESOURCE PROTECTION TABLE A-30, 2014.

EXISTING SITE CONDITIONS

The current uses on the 318.82-acre Project site are predominantly agricultural and industrial. The Project site consists largely of active agricultural fields (roughly 253 acres in production). The

Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site. The agricultural lands on the Project site have been used historically for intensive agricultural purposes such as farming and crop production. The Project site is not currently under an existing Williamson Act contract. Approximately 38 acres of the Project site were previously under a Williamson Act contract; however, a notice of non-renewal was filed in April 2004 and the contract expired in April 2014.

Surrounding Land Uses

The Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The Project site is bordered to the east by the City of Stockton city limits and existing industrial development within the City. The parcels to the east of the Project site are designated I (Industrial), C (Commercial), LDR (Low Density Residential), and HDR (High Density Residential). The parcels designated for residential uses immediately southeast of the Project site are currently undeveloped agricultural land. The parcels to the south of the Project site are designated LDR, MDR (Medium Density Residential), HDR, and C by the Stockton General Plan and R/L (Low Density Residential) and R/H (High Density Residential) by the San Joaquin County General Plan. However, the parcels to the south are currently undeveloped agricultural land. Ronald McNair High School is located immediately southwest of the Project site. The Project site is bordered on the west by West Lane with additional undeveloped agricultural land west of West Lane. Land to the west of the site is designated V (Village) by the Stockton General Plan and R/L, R/H, and C/O (Office Commercial) by the San Joaquin County General Plan. Land north of the Project site is designated V by the City's General Plan and A/G (General Agriculture) and OS/O (Resource Conservation) by the County's General Plan. The existing uses north of the Project site include large-lot single family residences and agricultural land. Figure 2-5 in Section 2.0 provides an aerial view of the site, and Figure 2-6 displays the current General Plan land use designations.

Project Site Farmland Characteristics (FMMP)

The State of California Department of Conservation FMMP and San Joaquin County GIS data were used to illustrate the farmland characteristics for the Project site. Farmlands on the Project site are identified in Figure 3.2-1. The farmland classifications for the site and surrounding area are described below.

PRIME FARMLAND

Prime Farmland is 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. To receive this designation, land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Prime Farmland is located in two portions of the site: an area on the northeastern corner of the Project site, and an area on the southwest portion of the site. Prime Farmland on the Project site totals approximately 78.0 acres (24.5percent). Prime Farmlands are also located west of the

3.2 AGRICULTURAL RESOURCES

Project site, across West Lane; north of the Project site, across Eight Mile Road; and south of the Project site, north of Morada Lane.

FARMLAND OF STATEWIDE IMPORTANCE

Farmland of Statewide Importance is farmland with characteristics similar to those of Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. To receive this designation, land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

The majority of agricultural land, approximately 215.6 acres (67.6 percent), is designated Farmland of Statewide Importance as shown on Figure 3.2-1. Farmland of Statewide Importance is also located in the general vicinity of the Project site to the north and south.

UNIQUE FARMLAND

Unique Farmland is 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. To receive this designation, land must have been cropped at some time during the four years prior to the mapping date.

Approximately 9.7 acres (3.0 percent), located along Bear Creek, are designated Unique Farmland as shown on Figure 3.2-1. Unique Farmland is also located to the west of the Project site along Bear Creek, and in some areas to the north of the site.

FARMLAND OF LOCAL IMPORTANCE

Farmland of Local Importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

There is no Farmland of Local Importance on the Project site. Areas designated Farmland of Local Importance are located to the east and southeast of the Project site.

URBAN AND BUILT-UP LAND

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel, is classified by the FMMP as Urban or Built-Up Land. 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.

Urban and Built-Up Land is located at the existing industrial uses in the north-central portion of the Project site. Urban and Built-Up Land on the Project site totals approximately 15.6 acres (4.9 percent). Areas with this designation are adjacent to the Project site to the east, and in the Project vicinity to the east and south.

RURAL RESIDENTIAL LAND

Rural Residential Land has a building density of less than 1 structure per 1.5 acres, but with at least one structure per 10 acres.

There is no Rural Residential Land on the Project site. Areas designated Rural Residential Land are located to the north and northeast of the Project site.

OTHER LAND

Other Land is not included in any other mapping category. Common examples include 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 forty acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Other Land is not located on the Project site, but Semi-Agricultural and Rural Commercial Land are located in the general vicinity of the Project site as shown on Figure 3.2-1.

Soils and Farmland Characteristics

A Custom Soil Survey was completed for the Project site using the NRCS Web Soil Survey program. Table 3.2-5 identifies the soils found on the Project site. The NRCS Soils Map is provided on Figure 3.2-2.

TABLE 3.2-5: PROJECT SOILS

UNIT SYMBOL	NAME	ACRES IN PROJECT SITE	PERCENT OF PROJECT SITE	CAPABILITY CLASSIFICATION
180	Jacktone clay	231.08	72.48%	IIIs-8 irrigated, IVs non-irrigated
250	Stockton clay	77.70	24.37%	IIIs-5 irrigated, IVs non-irrigated

SOURCE: NRCS CUSTOM WEB SOIL SURVEY, 2015.

Jacktone clay. This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are moderately deep to a hardpan. Slopes range from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow.

Stockton clay. This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are deep to a hardpan. Stockton clay is formed in alluvium derived from mixed rock sources. Slope ranges from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow.

3.2.3 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local units of government as well as private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for crop production. In fact, the land can be forest land, pastureland, cropland, or other land, but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

The NRCS administers the Farmland Protection Program. NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

The Project site and adjacent parcels will not be developed by a federal agency, or with assistance from a federal agency. Therefore, the Project will not be subject to the FPPA.

STATE

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the cost of community services to community residents.

The Williamson Act authorizes each County to establish an agricultural preserve. Land within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically

renewed each year, unless the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

The Project site is not under a Williamson Act contract. A few scattered parcels north of Eight Mile Road are under Williamson Act contracts.

Farmland Security Zones

In 1998 the state legislature established the Farmland Security Zone (FSZ) program. FSZs are similar to Williamson Act contracts, in that the intention is to protect farmland from conversion. The main difference however, is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The term of the contract is a minimum of 20 years. The property owners are offered an incentive of greater property tax reductions when compared to the Williamson Act contract tax incentives; the incentives were developed to encourage conservation of prime farmland through FSZs. The non-renewal and cancellation procedures are similar to those for Williamson Act contracts.

The Project site and the adjacent parcels are not within the FSZ program.

Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. The Cortese-Knox-Hertzberg Local Government Reorganization Act provides the following definition for prime agricultural land:

- Prime agricultural land means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:
 - Land that qualifies, if irrigated, for rating as class I or class II in the USDA NRCS land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
 - Land that qualifies for rating 80 through 100 Storie Index Rating.
 - Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
 - Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will re-turn during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.

3.2 AGRICULTURAL RESOURCES

- Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.

This is the definition used by LAFCo in their consideration of the proposed annexation. Compliance with LAFCo policies is discussed in Section 3.10, Land Use and Population, of this Draft EIR.

LOCAL

City of Stockton General Plan

The City of Stockton General Plan designates the Project site as Low Density Residential (LDR maximum 8.7 du/ac), High Density Residential (HDR maximum 23.2 du/acre), Commercial (C Maximum FAR: 0.3, maximum 29 du/acre), and Industrial (I maximum FAR 0.6). The General Plan Land Use Element and Natural & Cultural Resources Element provide a goal and policy framework for the preservation and conservation of agricultural resources. The following goal and policies of the Stockton General Plan related to agricultural resources are applicable to the proposed Project.

Land Use Element

AGRICULTURE GOAL

- LU-2. To promote the protection of agricultural lands outside the Urban Service Area to the north and east, and to discourage the premature conversion of agricultural lands within the Urban Service Area.

AGRICULTURE POLICIES

- LU-2.1. Agricultural Land Preservation. The City shall limit the wasteful and inefficient sprawl of urban uses into agricultural lands
- LU-2.2. Northern Agricultural Buffer. The City shall support the establishment of a permanent agricultural/open space buffer along the ultimate edge of the Urban Service Area Buffer or setback areas would follow along parcel boundary lines and be established with a minimum width of 100 feet.
- LU-2.3. Land Conversion within the Urban Service Area. The City shall discourage the premature conversion of agricultural land to urban uses within the Urban Service Area.

Natural & Cultural Resources Element

AGRICULTURAL RESOURCES GOAL

- NCR-4. To foster a viable agricultural industry.

AGRICULTURAL RESOURCES POLICY

- NCR-4.1. Continued Agricultural Use. The City shall promote the continuation of existing agricultural operations until such time that areas are needed for planned urban expansion.

SOIL RESOURCES GOAL

- NCR-5. To maintain the quality of the city's soil resources, reduce erosion and protect agricultural productivity.

SOIL RESOURCES POLICY

- NCR-5.1. Soil Conservation for Agriculture. The City shall encourage the conservation of agricultural soils to provide a base for agricultural productivity and the city's economy.

City of Stockton Right-to-Farm Ordinance

Chapter 16.36 of the Stockton Municipal Code, General Development and Use Standards, establishes the City's "Right-to-Farm" ordinance, which is intended to protect agricultural uses in and around the City. Specifically, Section 16.36.040 of the ordinance establishes the City's policy to preserve the City and County's agricultural operations while minimizing conflicts to new urban development. The City's "Right-to-Farm" ordinance serves to protect farmers from nuisance complaints. The ordinance requires owners and builders to notify their successors-in-interest of the potential conflicts and effects of agricultural activities, and the ordinance specifies that typical agricultural practices shall not be considered a nuisance.

Stockton Family Farmers' Sponsored Greenbelt and Agricultural Lands Protection Initiative

Issues regarding conversion of agricultural lands to urban uses, and potential mitigation measures for agricultural land conversion, is the subject of increasing dialogue in San Joaquin County. "The Stockton Family Farmers' Sponsored Greenbelt and Agricultural Lands Protection Initiative" was proposed in March 2004 and passed by the people of Stockton in January 2005. This initiative is intended to protect farming operations and agricultural lands, to promote establishment of a greenbelt between Stockton and Lodi, and to facilitate the preservation of open space.

Stockton Agricultural Land Mitigation Program

Pursuant to a litigation settlement, the City of Stockton prepared an agricultural land conversion fee nexus study in 2006 and adopted the Agricultural Land Mitigation Program in 2007. The Program applies to projects that would convert agricultural lands, as defined on the most-recent Important Farmland Maps published by the California Department of Conservation. Projects may provide "agricultural mitigation land" on a 1:1 basis for each acre of land converted, including administrative costs of approximately \$1,000 per acre, or pay the established Agricultural Land Mitigation Fee of \$13,295 (San Joaquin Council of Governments [SJCOG] San Joaquin County Multi-Species Habitat Conservation and Open Space Plan [SJMSCP] Habitat Fees, 2014) per acre.

The Agricultural Land Mitigation Program provides that agricultural mitigation lands will be dedicated to a qualifying management entity such as the Central Valley Farmland Trust. The fees would be collected by the City, held in a dedicated account, and then expended by the City to acquire agricultural mitigation land or pay for the monitoring and administrative costs of the program. The fees may also be transferred to a qualifying entity for the same purpose.

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

The SJMSCP provides comprehensive measures for compensation and avoidance of impacts to various biological resources, which includes ancillary benefits to agricultural resources. For instance, many of the habitat easements that are purchased or facilitated by the SJMSCP program are targeted for the protection of Swainson's hawk or other sensitive species habitat that are dependent on agricultural lands. The biological mitigation for these species through the SJMSCP includes the purchase of certain conservation easements for habitat purposes. The conservation easements are placed over agricultural land, such as alfalfa and row crops (not vines or orchards). As such, SJMSCP fees paid to SJCOG as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

Mitigation of agricultural land conversion losses has been provided through the county-wide adoption of the SJMSCP and its local adoption by the City of Stockton. The SJMSCP requires the payment of a per-acre fee for loss of wildlife habitat, which in San Joaquin County is largely integral with agricultural use. One important use of the fees is the acquisition of conservation easements over agricultural land that are intended to preserve the agricultural use of these lands in order to maintain their biological habitat values.

Areas located within SJMSCP "No Pay Zones" are exempt from the agricultural land mitigation fee program. Lands in the No Pay Zones are lands that are largely developed. The Project site is designated as Category A/No Pay Zone and Category C/Pay Zone B. The Category A/No Pay Zone consists of parcels where conversions of open space have already occurred or where new conversions of open spaces would not require compensation. The Category C/Pay Zone B consists of "Agricultural Habitat Lands", as described in Chapter 2.2 of the SJMSCP. The area of the Project site in Category A/No Pay Zone includes the 15.157-acre area of industrial uses, and a small portion in the southwestern portion of the site where a previous single family home was located.

3.2.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on agricultural resources if it will:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.2-1: The proposed Project would result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses. (Significant and Unavoidable)

Proposed Project:

Development of the proposed Project would result in the permanent conversion of 78.0 acres of Prime Farmland and 215.57 acres of Farmland of Statewide Importance, as shown on Figure 3.2-1, to non-agricultural use. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. Additionally, the Project site meets the Cortese-Knox-Hertzberg definition for prime agricultural land. This is the definition used by LAFCo in their consideration of the proposed annexation. As noted previously, compliance with LAFCo policies is discussed in Section 3.10, Land Use and Population, of this Draft EIR.

The City's Agricultural Land Mitigation Program requires that projects provide "agricultural mitigation land" on a 1:1 basis for each acre of land converted, including administrative costs of approximately \$1,000 per acre, or pay the established Agricultural Land Mitigation Fee of \$17,808 (SJCOG-SJMSCP Habitat Fees, 2017) per acre. The Project would pay the established Agricultural Land Mitigation Fee of \$17,808 per acre, as required by Mitigation Measure 3.2-1. SJCOG would then use these funds to purchase conservation easements on agricultural and habitat lands that are placed over agricultural land, such as alfalfa and row crops in the Project vicinity. As such, the Project fees paid to SJCOG as administrator of the SJMSCP would result in the preservation of agricultural lands in perpetuity. The purchase of conservation easements and/or deed restrictions through the City's Agricultural Land Mitigation Program and the SJMSCP allows the agricultural landowner to retain ownership of the land and continue agricultural operations, and preserves such lands in perpetuity.

The Stockton General Plan EIR anticipated development of the Project site as part of the overall evaluation of the buildout of the City. The General Plan EIR addressed the conversion and loss of Important Farmland that would result from the build out of the General Plan (General Plan Draft EIR, pp. 13-32 through 13-34). The General Plan EIR determined that impacts would be significant and unavoidable. According to the General Plan EIR, although City and County policies would support continued agricultural uses and would require urban development to fund agricultural conservation easements and other programs, no additional feasible mitigation is available.

3.2 AGRICULTURAL RESOURCES

While the proposed Project will contribute fees toward the purchase of conservation easements on agricultural lands through the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with Project implementation. Implementation of the Project would result in a net loss of farmland, even with implementation of mitigation. As such, consistent with the conclusion of the General Plan EIR, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic.

MITIGATION MEASURE

Mitigation Measure 3.2-1: *Prior to the conversion of Important Farmland on the Project site, the Project applicant shall participate in the SJMSCP agricultural mitigation fee program by paying the established fees on a per-acre basis for the loss of Important Farmland.*

RESULTING LEVEL OF SIGNIFICANCE

Even with implementation of Mitigation Measure 3.2-1, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural uses. As such, the significant and unavoidable agricultural impact identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek.

The With Bridge Alternative would result in the permanent conversion of 78.0 acres of Prime Farmland and 215.57 acres of Farmland of Statewide Importance, as shown on Figure 3.2-1, to non-agricultural use. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. Similar to the proposed Project, development of the With Bridge Alternative would be subject to the requirements of the General Plan, the Stockton Municipal Code, and the SJMSCP. As noted above, the SJMSCP requires development projects to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources.

While the With Bridge Alternative would contribute fees toward the purchase of conservation easements on agricultural lands through the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with implementation of the alternative. Implementation of the With Bridge Alternative would result in a net loss of farmland, even with implementation of mitigation. Similar to the proposed Project, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the General Plan 2035. The balance of the Project site would be developed as proposed under the proposed Project.

The General Plan 2035 Alternative would result in the permanent conversion of 78.0 acres of Prime Farmland and 215.57 acres of Farmland of Statewide Importance, as shown on Figure 3.2-1, to non-agricultural use. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. Similar to the proposed Project, development of the General Plan 2035 Alternative would be subject to the requirements of the General Plan, the Stockton Municipal Code, and the SJMSCP. As noted above, the SJMSCP requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources.

While the General Plan 2035 Alternative would contribute fees toward the purchase of conservation easements on agricultural lands through the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with implementation of the alternative. Implementation of the General Plan 2035 Alternative would result in a net loss of farmland, even with implementation of mitigation. Similar to the proposed Project, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as described in the Project Description, but the area utilized for the development would be reduced by approximately 33 percent.

The Reduced Project Alternative would result in the permanent conversion of Prime Farmland and Farmland of Statewide Importance, as shown on Figure 3.2-1, to non-agricultural use. However, the reduced disturbance area would result in less impacts to the loss of Important Farmland as compared to the proposed Project: approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. Similar to the proposed Project, development of the Reduced Project Alternative would be subject to the

3.2 AGRICULTURAL RESOURCES

requirements of the General Plan, the Stockton Municipal Code, and the SJMSCP. As noted above, the SJMSCP requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources.

While the Reduced Project Alternative would contribute fees toward the purchase of conservation easements on agricultural lands through the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with implementation of the alternative. Implementation of the Reduced Project Alternative would result in a net loss of farmland, even with implementation of mitigation. Similar to the proposed Project, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic; however, this alternative would have slightly less impacts related to Important Farmland than the proposed Project because less agricultural land would be converted. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under this alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint.

The Reduced Intensity/Density Alternative would result in the permanent conversion of 78.0 acres of Prime Farmland and 215.57 acres of Farmland of Statewide Importance, as shown on Figure 3.2-1, to non-agricultural use. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact. Although this alternative would reduce the number of residential units by 283 (with school) to 301 (without school) units as compared to the proposed Project, the Reduced Intensity/Density Alternative would require equal disturbance. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the General Plan, the Stockton Municipal Code, and the SJMSCP. As noted above, the SJMSCP requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources.

While the Reduced Intensity/Density Alternative would contribute fees toward the purchase of conservation easements on agricultural lands through the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with implementation of the alternative. Implementation of the Reduced Intensity/Density Alternative would result in a net loss of farmland, even with implementation of mitigation. Similar to the proposed Project, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.2-2: The proposed Project may conflict with existing zoning for agricultural use, or Williamson Act Contracts. (Less than Significant)*Proposed Project:*

The Project site is not under a Williamson Act contract. However, the San Joaquin County Zoning Ordinance currently designates the Project site for Limited Industrial (I-L), and Agriculture-Urban Reserve (AU-20) uses. This designation is intended to retain in agriculture those areas planned for future urban development in order to facilitate compact, orderly growth and to assure the proper timing and economical provision of services and utilities. The San Joaquin County Local Agency Formation Commission (LAFCo) will require the Project site to be pre-zoned by the City of Stockton in conjunction with the proposed annexation. The City's pre-zoning will include the following zoning designations: Residential, Low Density (RL), Industrial, Limited (IL), Commercial, General (CG), and Open Space (OS). The pre-zoning would go into effect upon annexation into the City of Stockton.

Although the Project site is currently zoned for agricultural use by the County, the Project includes pre-zoning consistent with the proposed residential and commercial uses. Additionally, conversion of the site from agricultural to urban uses has been anticipated by the City since the passage of the General Plan and associated EIR. Therefore, implementation of the Project would have a **less than significant** impact relative to this topic and no mitigation is required.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. As noted above, the Project site is not under a Williamson Act contract and is zoned for agricultural use. Because development of the site would not occur, conversion of the site from agricultural to urban uses would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. In addition, as noted above, the Project site is not under a Williamson Act contract and is zoned for agricultural use. Similar to the proposed Project, the San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the With Bridge Alternative would be identical to the proposed Project.

Although the Project site is currently zoned for agricultural use by the County, the With Bridge Alternative includes pre-zoning consistent with the proposed residential and commercial uses. Additionally, conversion of the site from agricultural to urban uses has been anticipated by the City

3.2 AGRICULTURAL RESOURCES

since the passage of the General Plan and associated EIR. Therefore, implementation of the With Bridge Alternative would have a **less than significant** impact relative to this topic and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. The balance of the Project site would be developed as proposed under the proposed Project, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. In addition, as noted above, the Project site is not under a Williamson Act contract and is zoned for agricultural use. Similar to the proposed Project, the San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the General Plan 2035 Alternative would include the following zoning designations: R/L, R/H, I/L, C/G, and OS.

Although the Project site is currently zoned for agricultural use by the County, the General Plan 2035 Alternative includes pre-zoning consistent with the proposed residential and commercial uses. Additionally, conversion of the site from agricultural to urban uses has been anticipated by the City since the passage of the General Plan and associated EIR. Therefore, implementation of the General Plan 2035 Alternative would have a **less than significant** impact relative to this topic and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

As noted above, the Reduced Project Alternative includes development of 941 units (with school) to 1,031 units (without school) on 200.15 acres, establishment of a 14.7-acre K-8 school site, elimination of the proposed 10.5-acre commercial area in the northwest portion of the Project site, and elimination of the existing industrial uses in the north-central portion of the Project site.

Under this alternative, the Project site would be developed with residential uses. In addition, as noted above, the Project site is not under a Williamson Act contract and is zoned for agricultural use. However, approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative. The reduced disturbance area would result in slightly less impacts to existing zoning for agricultural use as compared to the proposed Project.

Similar to the proposed Project, the San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the Reduced Project Alternative would include the following zoning designations: R/L and OS. Although the Project site is currently zoned for agricultural use by the County, the Reduced Project Alternative includes pre-zoning consistent with the proposed residential uses. Additionally,

conversion of the site from agricultural to urban uses has been anticipated by the City since the passage of the General Plan and associated EIR. Therefore, implementation of the Reduced Project Alternative would have a **less than significant** impact relative to this topic and no mitigation is required. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

As noted above, the Reduced Intensity/Density Alternative includes development of up to 1,130 units (with school) to 1,202 units (without school), establishment of a 10.0-acre K-8 school site, and elimination of the proposed 10.5-acre commercial area in the northwest portion of the Project site.

Under this alternative, the Project site would be developed with residential uses. In addition, as noted above, the Project site is not under a Williamson Act contract and is zoned for agricultural use. Similar to the proposed Project, the San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the Reduced Intensity/Density Alternative would include the following zoning designations: R/L, I/L, and OS.

Although the Project site is currently zoned for agricultural use by the County, the Reduced Project Alternative includes pre-zoning consistent with the proposed residential uses. Additionally, conversion of the site from agricultural to urban uses has been anticipated by the City since the passage of the General Plan and associated EIR. Therefore, implementation of the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this topic and no mitigation is required. Compared to the proposed Project, this alternative is slightly superior relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

**Impact 3.2-3: The proposed Project may result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands.
(Less than Significant)**

Proposed Project:

Intensive agricultural operations adjacent or close to urban development can result in use conflicts. These conflicts can result from agricultural practices that generate complaints and result in limits on these practices, such as dust generated during cultivation, burning, noise during shaking operations (nut trees), and pesticide applications. Additionally, conflicts may result from substantial increases in unauthorized use of an agricultural area as the population of the area increases. This can result in the potential for increased trespass, littering and/or vandalism of agricultural properties. Both of these potential conflicts are predominantly associated with the juxtaposition of agricultural and residential areas.

Potential urban/agricultural use conflicts between proposed urban and nearby agricultural uses are expected to be minimal. Neighboring agricultural lands, including Prime Farmland and

3.2 AGRICULTURAL RESOURCES

Farmland of Statewide Importance, are located adjacent to the northern, southern, and western boundaries of the Project site as shown on Figure 3.2-1. A variety of residential and commercial uses would be developed on the Project site.

The City's General Plan anticipates that agricultural lands to the north, south, and west of the Project site would develop with urban uses. Agricultural lands that are located adjacent the Project site north of Eight Mile Road, west of West Lane, and to the south of Bear Creek may be impacted by the increased human presence on the Project site. However, the existing agricultural uses to the north and west are separated from the Project site by West Lane and Eight Mile Road. Both of these streets are, or are planned to be, regional arterials; West Lane and Eight Mile Road would act as an effective divider and buffer between urban and agricultural uses, limiting access for new urban population in the area. Additionally, the lands immediately south of the Project site are separated from the site by the relatively wide Bear Creek corridor, levees, and the stream channel itself. As part of the Project, 20.36 acres of open space uses would be provided along Bear Creek. This open space corridor would also act as an effective divider and buffer between urban and agricultural uses.

Both Stockton and San Joaquin County have "Right-to-Farm" ordinances which prevent an existing agricultural operation using standard farming practices from being considered a nuisance by later adjoining uses. This protects farmers from attempts by residents to curtail agricultural activities. The Stockton ordinance, which would apply to the site following annexation, also requires disclosure of agricultural activities to purchasers of lots, to ensure that the purchasers are aware of neighboring uses which may impact their lots. Implementation of the Right-to-Farm ordinance would ensure potential residential/agricultural incompatibilities would be less than significant.

The General Plan 2035 EIR identifies that implementation of the General Plan could result in the conversion of farmland to non-agricultural use and identified General Plan Policies NCR-4.1 through 4.7, Policies LU-1.9, LU-2.1 through 2.4, DV-4.8, and Implementation of Policy LU-2.2. The General Plan 2035 EIR determined that the impact would be less than significant if mitigation was implemented to maintain agricultural use adjacent to non-agricultural uses (General Plan 2035 Draft EIR, pp. 13-35 and 13-36). The required mitigation measure cited in the General Plan 2035 EIR is as follows: LU-2.2 Agriculture Buffer. The City shall support the establishment of a permanent agricultural/open space buffer along the ultimate northern and eastern edge of the Urban Service Area. Buffer or setback areas would follow along parcel boundary lines and be established with a minimum width of 200 feet. According to Figure 2-2, Existing and Proposed Jurisdictional Boundaries of the General Plan 2035 EIR, the northern edge of the Urban Service Area is located approximately one-mile north of the northern Project boundary. Therefore, implementation of the proposed Project would result in a **less than significant** impact related to conflicts with adjacent agricultural lands.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural

lands. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Prime Farmland and Farmland of Statewide Importance are located adjacent to the northern, southern, and western boundaries of the Project site. However, the City's General Plan anticipates that agricultural lands to the north, south, and west of the Project site would develop with urban uses. Additionally, the existing agricultural uses to the north and west are separated from the Project site by West Lane and Eight Mile Road, both of which are, or are planned to be, regional arterials. The lands immediately south of the Project site are separated from the site by the relatively wide Bear Creek corridor, levees, and the stream channel itself.

Compliance with both the Stockton and San Joaquin County "Right-to-Farm" ordinances would prevent an existing agricultural operation using standard farming practices from being considered a nuisance by later adjoining uses. This protects farmers from attempts by residences to curtail agricultural activities. Similar to the proposed Project, disclosure of agricultural activities to purchasers of lots under the With Bridge Alternative would occur in order to ensure that the purchasers are aware of neighboring uses which may impact their lots.

As noted above, according to Figure 2-2, Existing and Proposed Jurisdictional Boundaries of the General Plan 2035 EIR, the northern edge of the Urban Service Area is located approximately one-mile north of the northern Project boundary. Therefore, General Plan Policy LU-2.2 does not apply to this alternative. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required; however, this alternative would have slightly more agricultural impacts than the proposed Project because more units would be constructed. The decrease in units from 1,413 units (with school) to 1,530 units (without school) under the proposed Project to 1,406 units under the With Bridge Alternative would decrease the number of units subject to the disclosure statement required by the Stockton Right-to-Farm Ordinance. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Prime Farmland and Farmland of Statewide Importance are located adjacent to the northern, southern, and western boundaries of the Project site. However, the City's General Plan anticipates that agricultural lands to the north, south, and west of the Project site would develop with urban uses. Additionally, the existing agricultural uses to the north and west are separated from the Project site by West Lane and Eight Mile Road, both of which are, or are planned to be, regional arterials. The lands immediately south of the Project site are separated from the site by the relatively wide Bear Creek corridor, levees, and the stream channel itself.

3.2 AGRICULTURAL RESOURCES

Compliance with both the Stockton and San Joaquin County "Right-to-Farm" ordinances would prevent an existing agricultural operation using standard farming practices from being considered a nuisance by later adjoining uses. This protects farmers from attempts by residences to curtail agricultural activities. Similar to the proposed Project, disclosure of agricultural activities to purchasers of lots under the General Plan 2035 Alternative would occur in order to ensure that the purchasers are aware of neighboring uses which may impact their lots.

As noted above, according to Figure 2-2, Existing and Proposed Jurisdictional Boundaries, of the General Plan 2035 EIR, the northern edge of the Urban Service Area is located approximately one-mile north of the northern Project boundary. Therefore, General Plan Policy LU-2.2 does not apply to this alternative. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required; however, this alternative would have slightly more agricultural impacts than the proposed Project because more units would be constructed. The increase in units from 1,503 units (without school) under the proposed Project to 1,978 to 2,776 units under the General Plan 2035 Alternative would increase the number of units subject to the disclosure statement required by the Stockton Right-to-Farm Ordinance. Compared to the proposed Project, this alternative is slightly inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

As noted above, neighboring agricultural lands, including Prime Farmland and Farmland of Statewide Importance, are located adjacent to the northern, southern, and western boundaries of the Project site. However, the City's General Plan anticipates that agricultural lands to the north, south, and west of the Project site would develop with urban uses. Additionally, the existing agricultural uses to the north and west are separated from the Project site by West Lane and Eight Mile Road, both of which are, or are planned to be, regional arterials. The lands immediately south of the Project site are separated from the site by the relatively wide Bear Creek corridor, levees, and the stream channel itself.

Compliance with both the Stockton and San Joaquin County "Right-to-Farm" ordinances would prevent an existing agricultural operation using standard farming practices from being considered a nuisance by later adjoining uses. This protects farmers from attempts by residences to curtail agricultural activities. Similar to the proposed Project, disclosure of agricultural activities to purchasers of lots under the Reduced Project Alternative would occur in order to ensure that the purchasers are aware of neighboring uses which may impact their lots.

As noted above, according to Figure 2-2, Existing and Proposed Jurisdictional Boundaries of the General Plan 2035 EIR, the northern edge of the Urban Service Area is located approximately one-mile north of the northern Project boundary. Therefore, General Plan Policy LU-2.2 does not apply

to this alternative. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required; however, this alternative would have slightly less agricultural impacts than the proposed Project because fewer units would be constructed. The reduction in units from 1,413 units (with school) to 1,503 units (without school) under the proposed Project to 941 units (with school) to 1,031 units (without school) units under the Reduced Project Alternative would decrease the number of units subject to the disclosure statement required by the Stockton Right-to-Farm Ordinance. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

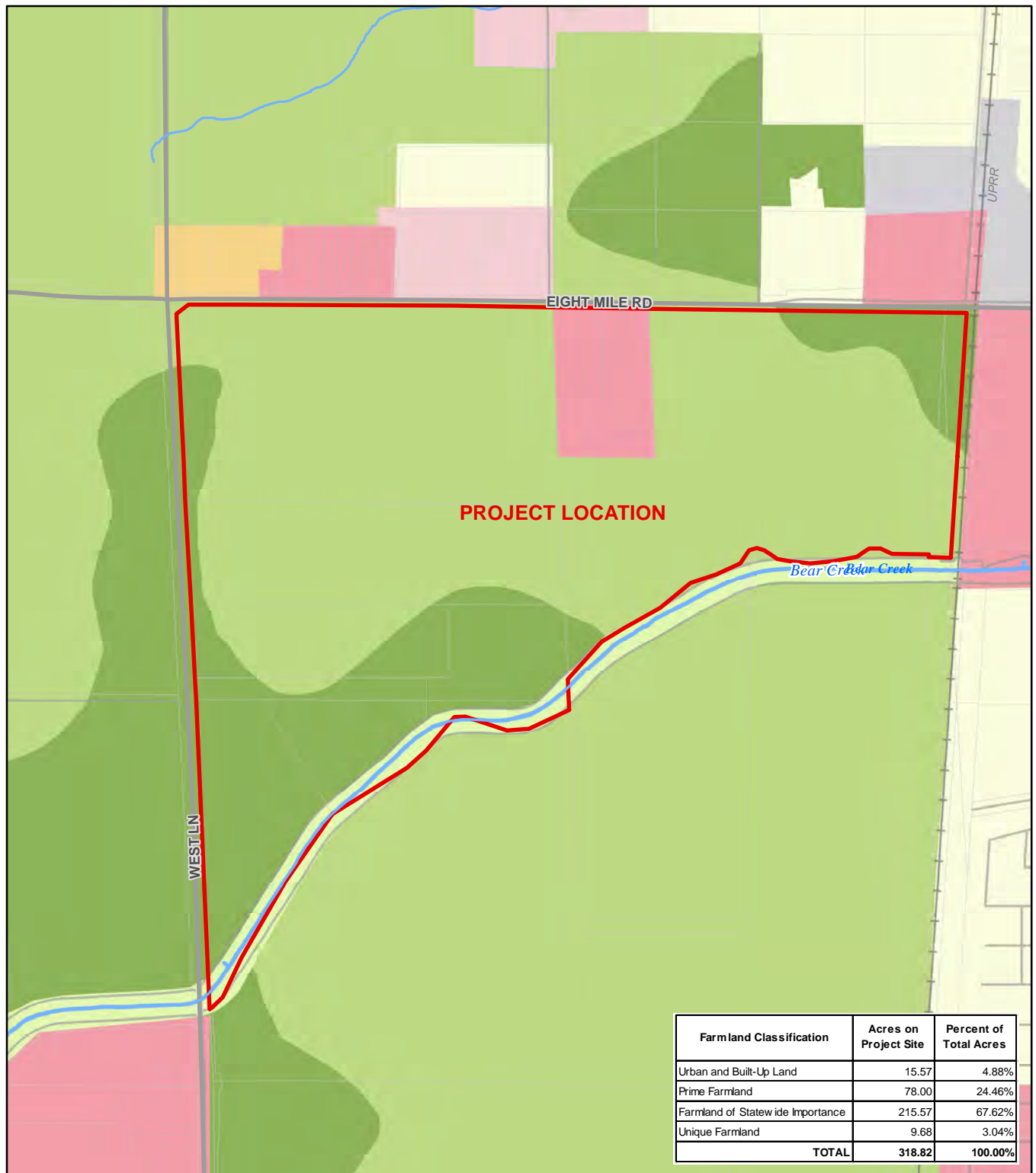
Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted above, neighboring agricultural land, including Prime Farmland and Farmland of Statewide Importance, are located adjacent to the northern, southern, and western boundaries of the Project site. However, the City's General Plan anticipates that agricultural lands to the north, south, and west of the Project site would develop with urban uses. Additionally, the existing agricultural uses to the north and west are separated from the Project site by West Lane and Eight Mile Road, both of which are, or are planned to be, regional arterials. The lands immediately south of the Project site are separated from the site by the relatively wide Bear Creek corridor, levees, and the stream channel itself.

Compliance with both the Stockton and San Joaquin County "Right-to-Farm" ordinances would prevent an existing agricultural operation using standard farming practices from being considered a nuisance by later adjoining uses. This protects farmers from attempts by residences to curtail agricultural activities. Similar to the proposed Project, disclosure of agricultural activities to purchasers of lots under the Reduced Intensity/Density Alternative would occur in order to ensure that the purchasers are aware of neighboring uses which may impact their lots.

As noted above, according to Figure 2-2, Existing and Proposed Jurisdictional Boundaries, of the General Plan 2035 EIR, the northern edge of the Urban Service Area is located approximately one-mile north of the northern Project boundary. Therefore, General Plan Policy LU-2.2 does not apply to this alternative. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. The reduction in units from 1,413 units (with school) to 1,503 units (without school) under the proposed Project to 1,130 units (with school) to 1,202 units (without school) under the Reduced Intensity/Density Alternative would decrease the number of units subject to the disclosure statement required by the Stockton Right-to-Farm Ordinance. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

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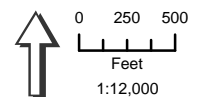
Legend

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Vacant or Disturbed Land
- Rural Residential Land
- Semi-agricultural and Rural Commercial Land
- Urban and Built-Up Land

Data sources: California Department of Conservation Farmland Mapping and Monitoring Program, San Joaquin County 2014; San Joaquin County GIS. Map date: May 18, 2016.

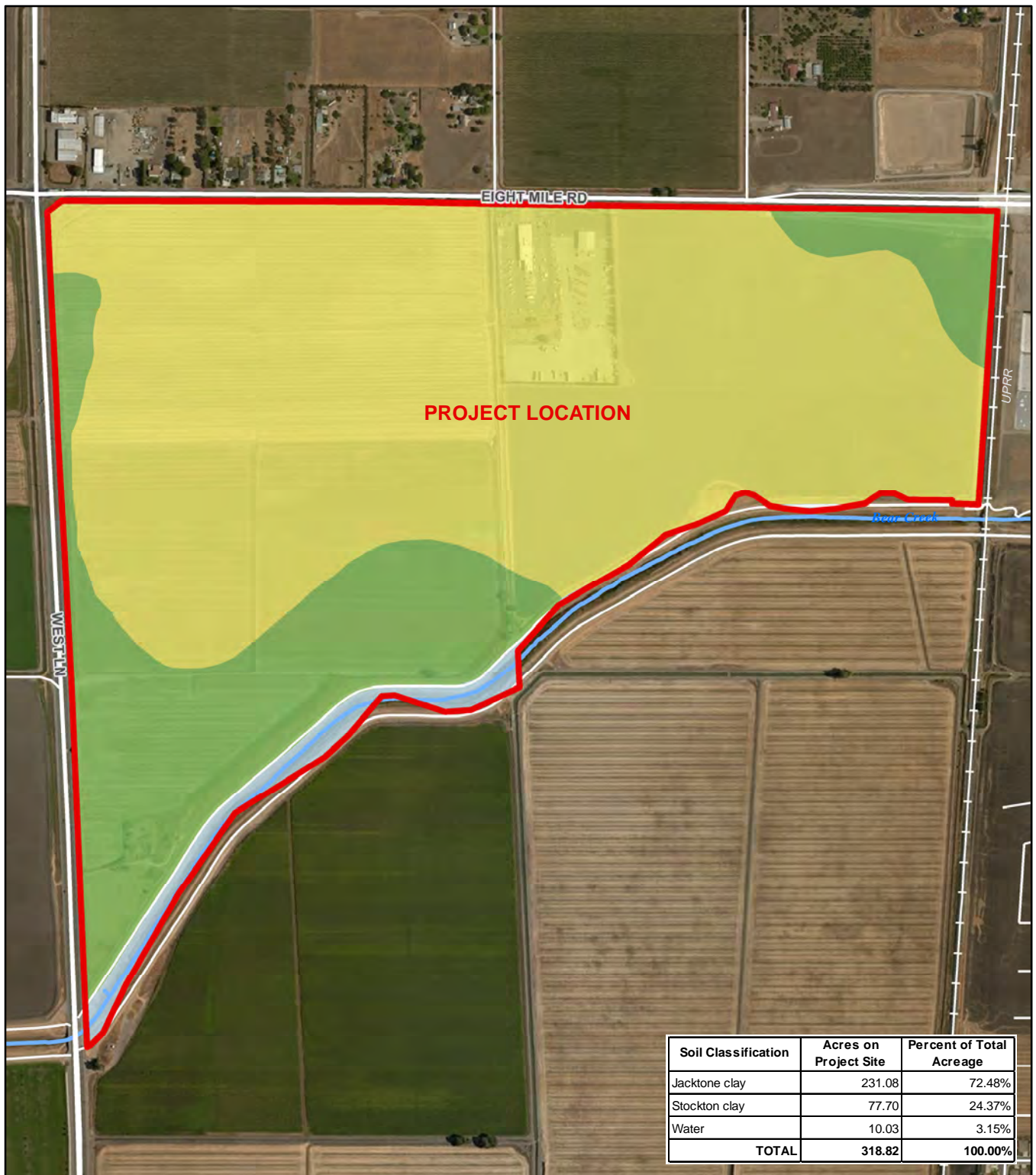
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Figure 3.2-1: Project Site Farmland Classifications



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Soil Classification	Acres on Project Site	Percent of Total Acreage
Jacktone clay	231.08	72.48%
Stockton clay	77.70	24.37%
Water	10.03	3.15%
TOTAL	318.82	100.00%

Legend

NRCS Soil Classification

- Jacktone clay, 0-2% Slopes
- Stockton clay, 0-2% Slopes
- Water

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Figure 3.2-2: Project Site Soils



Data sources: USDA National Resource Conservation Service, San Joaquin County CA (CA 077), Survey Area: Version 9, Sep 22, 2015; Tabular: Version 8, Sep 22, 2015; Spatial: Version 2, Nov 25, 2013; San Joaquin County GIS; ArcGIS Online Imagery Service. Map date: May 18, 2016.

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3.3.1 INTRODUCTION

This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from Project implementation. The analysis contained in this section is intended to be at a project-level, and covers impacts associated with the conversion of the entire site to urban uses. Following this discussion is an assessment of consistency of the proposed Project with applicable policies and local plans. The Greenhouse Gases and Climate Change analysis is located in a separate section of this document. This section is based in part on the following technical studies: *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board, 2005), *Guide for Assessing and Mitigation Air Quality Impacts* (SJVAPCD, 2002), *Guidance for Assessing and Mitigating Air Quality Impacts - 2015* (SJVAPCD, 2015), and CalEEMod (v.2016.3.2) (California Air Resources Board, 2017). Technical air quality and greenhouse gas modeling for the Project was completed by De Novo Planning Group in March 2018. The results of the modeling are included as Appendix B of this Draft EIR. There were no comments received during the NOP scoping process related to this environmental topic.

3.3.2 ENVIRONMENTAL SETTING

SAN JOAQUIN VALLEY AIR BASIN

The San Joaquin Valley Air Basin (SJVAB) (“Basin”) consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south.

The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the SJVAB throughout the year. (An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below). During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (SJVAPCD, 2002).

The pollution potential of the San Joaquin Valley is very high. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the Valley is a frequent scene of photochemical pollution.

Climate

The SJVAB has an inland Mediterranean climate with warm, dry summers and cooler winters. The average daily maximum temperature in the Basin is 65 degrees Fahrenheit (°F), with temperature highs of 95 °F in July. Average daily minimum temperature is 48 °F, with temperature lows of 45 °F in January. Normal rainfall level is approximately 9 inches per year, and occurs mainly in the winter

months from November to April. Thunderstorms occur on approximately three to four days in the spring, on average.

San Joaquin County has warm, dry days and relatively cool nights, with clear skies and limited rainfall. Winters are mild with light rains and frequent heavy fog from December to January. The average daily temperature in Stockton is 74 °F. Annual rainfall is 13 inches in Stockton, 8 inches in Tracy, and 16 inches in Lodi.

Air Movement

Marine air comes into the basin from the Sacramento River–San Joaquin River Delta, although most air movement is restricted by the surrounding mountains. Winds from the Bay Area flow northeasterly into the Sacramento Valley and southward into San Joaquin County. This results in weak winds from the north and northeast, with an average speed of seven miles per hour.

Wind speed and direction determine the dispersion of air pollutants. During the summer, wind from the north flows south and southeasterly through the Valley, through the Tehachapi Pass and into the Southeast Desert Air Basin. Thus, emissions from the San Francisco Bay Area and the Broader Sacramento air basins are transported into San Joaquin County and the Valley. Emissions in the San Joaquin Valley are then transported to the Southeast Desert and Great Basin Valley Air Basins. In late fall and winter, cold air from the mountains flows into the Valley. This results in winds from the south that flow north and northwesterly. Some emissions from San Joaquin County are transported to the Broader Sacramento air basin during these times. But the winds are relatively light, limiting the dispersion of carbon monoxide (CO) and other pollutants. Thus, high concentrations of CO remain in the Valley.

Seasonal Pollution Variations

Carbon monoxide, oxides of nitrogen, particulate matter, and lead particulate concentrations in the late fall and winter are highest when there is little interchange of air between the valley and the coast and when humidity is high following winter rains. This type of weather is associated with radiation fog, known as tule fog, when temperature inversions at ground level persist over the entire valley for several weeks and air movement is virtually absent.

Pollution potential in the San Joaquin County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area, and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM₁₀) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide “hot spots” are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG) and nitrogen oxides (NO_x) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in San Joaquin County during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM₁₀ and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original or “primary” pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form “secondary” pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of the San Joaquin Valley.

Temperature Inversions

A temperature inversion is a reversal in the normal decrease of temperature as altitude increases. In most parts of the country, air near ground level is warmer than the air above it. Semi-permanent systems of high barometric pressure fronts establish themselves over the basin, deflecting low-pressure systems that might otherwise bring cleansing rain and winds. The height of the base of the inversion is known as the “mixing height” and controls the volume of air available for the mixing and dispersion of air pollutants.

The interrelationship of air pollutants and climatic factors is most critical on days of greatly reduced atmospheric ventilation. On days such as these, air pollutants accumulate because of the simultaneous occurrence of three favorable factors: low inversions, low maximum mixing heights and low wind speeds. Although these conditions may occur throughout the year, the months of July, August and September generally account for more than 40 percent of these occurrences.

The potential for high contaminant levels varies seasonally for many contaminants. During late spring, summer and early fall, light winds, low mixing heights and sunshine combine to produce conditions favorable for the maximum production of oxidants, mainly ozone. When strong surface inversions are formed on winter nights, especially during the hours before sunrise, coupled with near-calm winds, carbon monoxide from automobile exhausts becomes highly concentrated. The highest yearly concentrations of carbon monoxide and oxides of nitrogen are measured during November, December and January.

CRITERIA POLLUTANTS

Pursuant to the Federal Clean Air Act, the United States Environmental Protection Agency (EPA) identifies six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O₃) is a photochemical oxidant and the major component of smog. While O₃ in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O₃ at ground level are a major health and environmental concern. O₃ is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O₃ levels occur typically during the warmer times of the year. Both VOCs and NO_x are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O₃ causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O₃ not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O₃ for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

Nitrogen dioxide (NO₂) is a brownish, highly reactive gas that is present in all urban atmospheres. NO₂ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to O₃ and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant NO_x. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O₃. NO_x forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO₂) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO₂ is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO₂ results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural

windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO₂ and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO₂) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death. There are two principle types of particulate matter: respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).

Respirable particulate matter (PM₁₀) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural uses (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM₁₀ causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter (PM_{2.5}) consists of small particles, which are less than 2.5 microns in size. Similar to PM₁₀, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM₁₀, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for PM_{2.5}.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also soils and damages materials, and is a major cause of visibility impairment.

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive lead exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of lead can lead to central nervous system damage. Recent studies have also shown that lead may be a factor in high blood pressure and subsequent heart disease. Lead is both a criteria pollutant, and a toxic air contaminant.

TOXIC AIR CONTAMINANTS (TACs)

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with

the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and Federal governments have set ambient air quality standards.

ODORS

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

AMBIENT AIR QUALITY

Both the U.S. EPA and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The Federal and California State ambient air quality standards are summarized in Table 3.3-1 for important pollutants. The Federal and State ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the Federal and State standards differ in some cases. In general, the California State standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM_{2.5} and PM₁₀).

The U.S. EPA established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.075 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001.

In 1997, new national standards for PM_{2.5} were adopted for 24-hour and annual averaging periods. The current PM₁₀ standards were to be retained, but the method and form for determining compliance with the standards were revised.

TABLE 3.3-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING TIME	FEDERAL PRIMARY STANDARD	STATE STANDARD
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.03 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.030 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM ₁₀	Annual	--	20 ug/m ³
	24-Hour	150 ug/m ³	50 ug/m ³
PM _{2.5}	Annual	12 ug/m ³	12 ug/m ³
	24-Hour	35 ug/m ³	--
Lead	30-Day Avg.	--	1.5 ug/m ³
	3-Month Avg.	0.15 ug/m ³	--

NOTES: PPB = PARTS PER BILLION, PPM = PARTS PER MILLION, $\mu\text{G}/\text{M}^3$ = MICROGRAMS PER CUBIC METER

SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2017; U.S. EPA, 2017.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, CARB staff recommended lowering the level of the annual standard for PM₁₀ and establishing a new annual standard for PM_{2.5}. The new standards became effective on July 5, 2003, with another revision on November 29, 2005.

The national annual average PM_{2.5} standard was most recently revised in 2012 following an exhaustive review of new literature pointed to evidence for increased risk of premature mortality at lower PM_{2.5} concentrations than the existing standard. The 2012 review resulted in retention of the existing 24-hour average PM_{2.5} and PM₁₀ standards.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within San Joaquin County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate

change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An “unclassified” designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for O₃, CO, and NO₂ as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO₂, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

San Joaquin County has a State designation of Nonattainment for O₃, PM₁₀, and PM_{2.5} and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for O₃ and PM_{2.5}. The County is designated either attainment or unclassified for the remaining national standards. Table 3.3-2 presents the State and national attainment status for San Joaquin County.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

CRITERIA POLLUTANTS	STATE DESIGNATIONS	NATIONAL DESIGNATIONS
Ozone	Nonattainment	Nonattainment
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AREA DESIGNATIONS MAPS / STATE AND NATIONAL), 2017.

San Joaquin Valley Air Basin Monitoring

The SJVAB consists of eight counties, from San Joaquin County in the north to Kern County in the south. SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure O₃, PM_{2.5}, and PM₁₀. It is important to note that the Federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for Federal standards. Data obtained from the monitoring sites throughout the SJVAB between 2014 and 2016 is summarized in Tables 3.3-3 through 3.3-5.

TABLE 3.3-3: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE

Year	Days > Standard				1-Hour Observations			8-Hour Averages				Year Coverage	
	State		National			State	Nat'l	State		National			
	1-Hr	8-Hr	1-Hr	8-Hr	Max.	D.V. ¹	D.V. ²	Max.	D.V. ¹	Max.	D.V. ²	Min	Max
2016	28	91	1	60	0.131	0.12	0.117	0.101	0.103	0.101	0.098	93	100
2015	24	74	1	55	0.135	0.12	0.116	0.110	0.103	0.110	0.099	84	99
2014	26	88	1	56	0.128	0.12	0.118	0.105	0.108	0.104	0.104	83	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V.¹ = STATE DESIGNATION VALUE. D.V.² = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR iADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-4: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM_{2.5}

Year	Est. Days > Nat'l '06 Std.	Annual Average		Nat'l Ann. Std. D.V. ¹	State Annual D.V. ²	Nat'l '06 Std. 98th Percentile	Nat'l '06 24-Hr Std. D.V. ¹	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State		
2016	25.5	15.9	15.6	18.4	19	51.4	72	66.4	66.4	86	100
2015	38.0	17.9	17.9	20.8	19	99.2	77	107.8	111.9	32	100
2014	40.4	21.6	18.6	19.7	19	107.2	71	107.2	107.2	32	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V.¹ = STATE DESIGNATION VALUE. D.V.² = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR iADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-5: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM₁₀

Year	Est. Days > Std.		Annual Average		3-Year Average		High 24-Hr Average		Year Coverage
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	
2016	0.0	157.9	50.0	47.3	46	48	152.2	132.5	100
2015	0.0	121.4	59.3	44.1	47	48	143.3	140.3	100
2014	8.4	138.8	57.9	47.5	45	48	430.1	419.5	100

NOTES: THE NATIONAL ANNUAL AVERAGE PM₁₀ STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON

3.3 AIR QUALITY

DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

San Joaquin County Air Quality Monitoring

SJVAPCD and CARB maintain two air quality monitoring sites in San Joaquin County that collect data for O₃, PM₁₀, and PM_{2.5}. These include the Stockton - Hazelton Street and Tracy – Airport monitoring sites. The Federal ozone 1-hour standard was revoked by the EPA in 2005, but subsequent litigation reinstated portions of implementation requirements under the revoked standard. As a result, the SJVAPCD adopted the 2013 Plan for the Revoked 1-Hour Ozone Standard in September 2013 to address the reinstated requirements for this standard. The data and analysis contained in this Draft EIR does not conflict with the 2013 Plan. Data obtained from the monitoring sites between 2014 through 2016 is shown in Tables 3.3-6 and 3.3-7.

TABLE 3.3-6: AMBIENT AIR QUALITY MONITORING DATA (STOCKTON – HAZELTON STREET)

POLLUTANT	CAL.	FED.	YEAR	MAX CONCENTRATION	DAYS EXCEEDED STATE/FED STANDARD
	PRIMARY STANDARD				
Ozone (O ₃) (1-hour)	0.09 ppm for 1 hour	NA	2016 2015 2014	0.102 0.094 0.090	2 / (N/A) 0 / (N/A) 0 / (N/A)
Ozone (O ₃) (8-hour)	0.07 ppm for 8 hour	0.07 ppm for 8 hour	2016 2015 2014	0.079 0.079 0.078	2 / 2 3 / 2 5 / 4
Particulate Matter (PM ₁₀)	50 ug/m ³ for 24 hours	150 ug/m ³ for 24 hours	2016 2015 2014	66.5 55.3 94.0	30.6 / 0 24.5 / 0 18.0 / 0
Fine Particulate Matter (PM _{2.5})	No 24 hour State Standard	35 ug/m ³ for 24 hours	2016 2015 2014	43.7 58.8 56.8	(N/A) / 4.0 (N/A) / 12.2 (N/A) / 16.0

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-7: AMBIENT AIR QUALITY MONITORING DATA (TRACY – AIRPORT)

POLLUTANT	CAL.	FED.	YEAR	MAX CONCENTRATION	DAYS EXCEEDED STATE/FED STANDARD
	PRIMARY STANDARD				
Ozone (O ₃) (1-hour)	0.09 ppm for 1 hour	NA	2016 2015 2014	0.109 0.107 0.097	4 / (N/A) 4 / (N/A) 1/ (N/A)
Ozone (O ₃) (8-hour)	0.07 ppm for 8 hour	0.070 ppm for 8 hour	2016 2015 2014	0.084 0.083 0.098	19 / 19 21 / 19 17 / 16
Particulate Matter (PM ₁₀)	50 ug/m ³ for 24 hours	150 ug/m ³ for 24 hours	2016 2015 2014	53.0 58.3 67.7	* / * * / * * / *
Fine Particulate Matter (PM _{2.5})	No 24 hour State Standard	35 ug/m ³ for 24 hours	2016 2015 2014	28.5 39.0 36.8	* / * * / * * / *

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

3.3.3 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, State attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The U.S. EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

The law establishes the responsibility of each State to carry out the requirements of the FCAA, giving special consideration to local industries, geography, housing patterns, etc. in order to have full comprehension of the local pollution control problems. As a result, the EPA requires each State to develop a State Implementation Plan (SIP) that explains how each State will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular State will implement to control air quality within their jurisdiction. CARB is the State agency that is responsible for preparing the California SIP.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile

driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

California Clean Air Act (CCAA)

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the State's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the Federal standards. The San Joaquin Valley Air Pollution Control District (SJVAPCD) is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the State ambient air quality standards.

Air Quality Standards

NAAQS are determined by the U.S. EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the Federal standards. As such, California has established more stringent ambient air quality standards.

Federal and State ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM₁₀) and lead. In addition, California has created standards for pollutants that are not covered by Federal standards. The State and Federal primary standards for major pollutants are shown in Table 3.3-1.

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the ARB list of TACs. Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance below which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic emissions inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors,

generators). In February 2000, ARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

LOCAL

San Joaquin Valley Air Pollution Control District (SJVAPCD)

The SJVAPCD is the local agency with primary responsibility for compliance with both the Federal and State standards and for ensuring that air quality conditions are maintained. This is done through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The eight counties that comprise the SJVAPCD are divided into three regions. These include:

- Northern Region: Merced, San Joaquin, and Stanislaus Counties
- Central Region: Madera, Fresno, and Kings Counties
- Southern Region: Tulare County and Valley portion of Kern County

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The *2007 Ozone Plan* calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

The SJVAPCD has also prepared the *2007 PM₁₀ Maintenance Plan and Request for Redesignation* (2007 PM₁₀ Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM₁₀ Attainment for the Basin to CARB. CARB concurred with the request and submitted the request to the EPA on May 8, 2006. On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the NAAQS for PM₁₀. However, the EPA noted that the Final Rule did not constitute a redesignation to attainment until all of the FCAA requirements under Section 107(d)(3) were met.

The SJVAPCD has prepared the *2008 PM_{2.5} Plan* to achieve Federal and State standards for improved air quality in the San Joaquin Valley Air Basin. The *2008 PM_{2.5} Plan* provides a comprehensive list of regulatory and incentive based measures to reduce PM_{2.5}.

In addition to the *2007 Ozone Plan*, the *2008 PM_{2.5} Plan*, and the *2007 PM₁₀ Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on January 10, 2002, and is used as a guidance document for this analysis. The SJVAPCD updated the GAMAQI in 2015 and the GAMAQI was approved by the SJVAPCD Board on March 19, 2015.

The 2015 GAMAQI includes guidance for assessing air quality impacts under CEQA, including project air impact assessment, air quality thresholds of significance for criteria pollutants and toxic air contaminants, mitigation measures should emissions exceed the applicable thresholds. The SJVAPCD recommends using the California Emissions Estimator Model (CalEEMod) for preparing air impact assessments within the San Joaquin Valley air basin. CalEEMod is the newest computer emissions estimating model developed by the California Air Pollution Control Officers Association (CAPCOA). The model calculates criteria pollutant and greenhouse gas (GHG) emissions from a variety of land uses, including residential, commercial, retail, and industrial projects. CalEEMod also calculates the benefits of implementing mitigation measures, including GHG mitigation measures. This analysis utilizes the CalEEMod model as directed by the SJVAPCD.

SJVAPCD Rules and Regulations

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following are significant rules that will apply to the proposed Project:

REGULATION VIII – FUGITIVE PM₁₀ PROHIBITIONS

Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM₁₀ emissions, predominantly from dust/dirt generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

RULE 4002

Rule 4002 applies in the event an existing building will be renovated, partially demolished or removed (National Emission Standards for Hazardous Air Pollutants); this rule applies to all sources of Hazardous Air Pollutants. The purpose of this rule is to protect the public from asbestos exposure and promote compliance by providing accurate information to the regulated community.

RULE 4102 – NUISANCE

Rule 4102 dictates that if a source operation emits or may emit air contaminants or other materials such that the emissions create a public nuisance, the owner/operator may be subject to APCD enforcement action.

RULE 4103 – OPEN BURNING

Rule 4103 prohibits the burning of agricultural material when the land is converting from agriculture to non-agricultural (i.e. urban) purposes.

RULE 4601 – ARCHITECTURAL COATINGS

Rule 4601 limits emissions of volatile organic compounds from architectural coatings by specifying storage, cleanup and labeling requirements.

RULE 4641 – CUTBACK, SLOW CURE, AND EMULSIFIED ASPHALT, PAVING AND MAINTENANCE OPERATIONS

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

RULE 8021 – CONSTRUCTION, DEMOLITION, EXCAVATION, AND OTHER EARTHMOVING ACTIVITIES

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

RULE 9510 – INDIRECT SOURCE REVIEW

Rule 9510 indirectly limits the vehicular emissions contribution of new development to regional air pollution. Through an application and review process, the developer may incorporate emission-reduction features in the project or may pay the fee prescribed in the rule. Fees collected by the APCD are indexed to the cost of providing offsetting mitigation and are used for that purpose. The provisions of the rule are described in more detail in the analysis of environmental impacts and mitigation measures.

City of Stockton General Plan

The following goals and policies of the Stockton General Plan related to air quality are applicable to the proposed Project.

Land Use Element**RESIDENTIAL DEVELOPMENT GOAL**

- LU-3. To promote a variety of housing types and densities throughout the City that address the housing needs of various age and socio-economic groups.

RESIDENTIAL DEVELOPMENT POLICY

- LU-3.9. Conflicting Uses. The City shall designate new residential developments in areas that will not create conflicts with existing or planned industrial or intensive commercial uses.

Health & Safety Element

AIR QUALITY GOAL

- HS-4. To improve air quality and to minimize the adverse effects of air pollution on human health and the economy.

AIR QUALITY POLICIES

- HS-4.3. Regional Air Quality Project Review. The City shall consult with the SJVAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVAPCD is on the distribution list for all CEQA documents.
- HS-4.4. Support Regional Air Quality Attainment Plans. The City shall support recommendations to reduce air pollutants found in the SJVAPCD local attainment plans and use its regulatory authority to mitigate “point” sources of air pollution (e.g., factories, powerplants, etc.).
- HS-4.5. City Review of Development Proposals. The City shall use the SJVAPCD Guidelines for Assessing and Mitigating Air Quality Impacts (GAAMAQI) for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The City shall continue to cooperate with the SJVAPCD in the review of development proposals.
- HS-4.6. CEQA Compliance and Air Quality Mitigation. The City shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The City shall require projects to comply with the City’s adopted air quality impact assessment and mitigation process and to provide specific mitigation measures as outlined in policies of Chapter 8 Transportation and Circulation.
- HS-4.7. Air Quality Mitigation Fees. The City shall continue the program for assessing air quality mitigation fees for all new development, with the fees to be used to fund air quality programs.
- HS-4.9. Dust Suppression Measures. The City shall require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to, the following:
 - a. Site watering or application of dust suppressants,
 - b. Phasing or extension of grading operations,
 - c. Covering of stockpiles,
 - d. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and
 - e. Revegetation of graded areas.
- HS-4.10. Travel Demand Measures. Coordinating with the SJVAPCD, the City shall require large development projects to mitigate air quality impacts. Mitigation measures may include, but are not limited to the following:

- Providing bicycle access and parking facilities,
- Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels
- vehicles, and
- Establishing telecommuting programs or satellite work centers.
- HS-4.11. Woodburning. The City shall require the use of natural gas or the installation of low-emission, EPA-certified fireplace inserts in all open hearth fireplaces in new homes. The city shall promote the use of natural gas over wood products in space heating devices and fireplaces in all existing and new homes The City shall follow the guidelines set forth in SJVACD Rule 4901.
- HS-4.12. Employment-Intensive Development. The City shall encourage employment-intensive development with a high floor area ratio where adequate transit service is planned, and discourage such development where adequate transit service is not planned.
- HS-4.17. Street Design. The City shall promote street design that provides an environment which encourages transit use, biking and walking.
- HS-4.18. Design for Transportation Alternatives. The City shall encourage all new development to be designed to promote pedestrian and bicycle access and circulation, to the greatest extent feasible.
- HS-4.19. Transportation Management Associations. The City shall encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations.

3.3.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.3-1: Project operation would conflict with or obstruct implementation of an applicable air quality plan. (Significant and Unavoidable)

Proposed Project:

The SJVAPCD is tasked with implementing programs and regulations required by the FCAA and the CCAA. In that capacity, the SJVAPCD has prepared plans to attain Federal and State ambient air quality standards. To achieve attainment with the standards, the SJVAPCD has established thresholds of significance for criteria pollutant emissions in their *SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts* (2015). Projects with emissions below the thresholds of significance for criteria pollutants would be determined to “Not conflict or obstruct implementation of the District’s air quality plan”. However, as provided by the following impact discussion (see Impact 3.3-2), the proposed Project would exceed some SJVAPCD criteria pollutant thresholds during proposed Project operation, which would represent a significant and unavoidable impact. Therefore, there is a **significant and unavoidable** impact relative to the potential for the proposed Project to conflict with or obstruct implementation of an applicable air quality plan. It is noted that the SJVAPCD will enforce Rule 9510 (Indirect Source Review), which indirectly limits the vehicular emissions contribution of new development to regional air pollution beyond the modeling outputs. Through an application and review process, the developer would be required to pay the fee prescribed in the rule. Fees collected by the SJVAPCD are indexed to the cost of providing offsetting mitigation and are used for that purpose.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the proposed Project site would remain in its current condition. Implementation of the No Build Alternative would not conflict with or obstruct implementation of an applicable air quality plan. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As provided by the following impact discussion (see Impact 3.3-2), the With Bridge Alternative would exceed some SJVAPCD criteria pollutant thresholds during operation, which would represent significant and unavoidable impact. Therefore, there is a **significant and unavoidable** impact relative to the potential to conflict with or obstruct implementation of an applicable air quality plan. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

The General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. As provided by the following impact discussion (see Impact 3.3-2), the General Plan 2035 Alternative would exceed

some SJVAPCD criteria pollutant thresholds during operation, which would represent significant and unavoidable impact. Therefore, there is a **significant and unavoidable** impact relative to the potential to conflict with or obstruct implementation of an applicable air quality plan. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as described in the Project Description, but the area utilized for the development would be reduced by approximately 33 percent. As provided by the following impact discussion (see Impact 3.3-2), the Reduced Project Alternative would exceed some SJVAPCD criteria pollutant thresholds during operation, which would represent significant and unavoidable impact. Therefore, there is a **significant and unavoidable** impact relative to the potential to conflict with or obstruct implementation of an applicable air quality plan. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under this alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. As provided by the following impact discussion (see Impact 3.3-2), the Reduced Intensity/Density Alternative would exceed some SJVAPCD criteria pollutant thresholds during operation, which would represent significant and unavoidable impact. Therefore, there is a **significant and unavoidable** impact relative to the potential to conflict with or obstruct implementation of an applicable air quality plan. Compared to the proposed Project, this alternative is superior relative to this topic.

Impact 3.3-2: Project operation would cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable)

Proposed Project:

The proposed Project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, landscape fuel combustion, consumer products, and architectural coatings.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the proposed Project. Table 3.3-8 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the proposed Project. The results of the modeling are included as Appendix B of this Draft EIR.

3.3 AIR QUALITY

TABLE 3.3-8: OPERATIONAL BUILDOUT GENERATED EMISSIONS

	ROG		NO _x		PM ₁₀		PM _{2.5}	
	tons/year		tons/year		tons/year		tons/year	
Thresholds	≤ 10 tons/year		≤ 10 tons/year		≤ 15 tons/year		≤ 15 tons/year	
Category	UM	M	UM	M	UM	M	UM	M
Area	18.20	12.95	1.47	0.69	7.89	0.11	7.89	0.11
Energy	0.19	0.19	1.66	1.66	0.13	0.13	0.13	0.13
Mobile	6.67	6.44	45.35	43.12	18.30	16.52	5.09	4.60
Total	25.06	19.58	48.49	45.47	26.32	16.76	13.11	4.84
Threshold Exceeded?	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Percent Reduction from Mitigation	21.9		6.2		36.3		63.1	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-4.

SOURCE: CALFEEMOD, v.2016.3.2.

The SJVAPCD has established thresholds of significance to which proposed Project emissions are compared to determine the level of significance. The SJVAPCD has established operations- related emissions thresholds of significance as follows: 10 tons per year of NO_x, 10 tons per year of ROG, 15 tons per year of PM₁₀, and 15 tons per year of PM_{2.5}. If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for operational-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions to the extent feasible. As shown in Table 3.3-8 above, annual emissions of ROG, NO_x, and PM₁₀ exceed the SJVAPCD thresholds of significance even after reductions estimated from implementation of the below mitigation assumptions are applied.

The following CalEEMod™ (v.2016.3.2) mitigation assumptions were incorporated into the model:

Traffic Mitigation

- Increase Density (5.83 dwelling units per acre)
- Improve Walkability Design (minimum 15 intersections per square mile)
- Improve Destination Accessibility (minimum distance to downtown is 6.5 miles)
- Increase Transit Accessibility in the Project area (0.1 miles to transit)
- Improve Pedestrian Network so that the Project area connects to offsite pedestrian networks
- Provide traffic calming measures on all street segments and intersections

Area Mitigation

- Use Low VOC Paint [150 EF (g/L)]
- Use Only Natural Gas Hearths

Water Mitigation

- Install low flow bathroom faucets
- Install low-flow kitchen faucets
- Install low-flow toilets
- Install low-flow showers
- Use water-efficient irrigation systems

PM_{2.5} emissions would be below the threshold of significance, with or without the mitigation inputs above; however, ROG, NO_x, and PM₁₀ would exceed the SJVAPCD thresholds of significance for operations even with mitigation. The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule, or ISR), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The actual calculations will be accomplished by the SJVAPCD and Project applicants as the Project (or portions of the Project) are brought forward for approval under Rule 9510. However, even with the application of the ISR and the mitigation measures described below, emissions levels may remain above the defined thresholds of significance for the Project as a whole. As such, operation of the proposed Project would have a **significant and unavoidable** impact relative to operational air emissions.

MITIGATION MEASURES

Mitigation Measure 3.3-1: *Prior to final approval of improvement plans, the Project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or Project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or Project component, the Project proponent shall incorporate mitigation measures into the proposed Project and demonstrate compliance with District Rule 9510 including payment of all fees.*

Mitigation Measure 3.3-2: *Prior to the approval of improvement plans, the Project proponent shall incorporate the following features into the applicable Project plans (e.g. site, engineering, landscaping, etc.):*

- *Bus turnouts and transit improvements where requested by the San Joaquin RTD.*
- *Continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets.*
- *Pavement and striping for bike lanes/paths.*
- *Street lighting along internal roadways and/or bike lanes/paths, sidewalks.*
- *Pedestrian signalization, signage and safety designs at signalized intersections.*
- *Shade trees to shade sidewalks in street-side landscaping areas.*
- *Shade trees to front yard.*

Mitigation Measure 3.3-3: *Prior to the approval of improvement plans, the Project proponent shall prepare and implement a transportation demand management (TDM) plan for the non-residential*

3.3 AIR QUALITY

portions of the Project that includes, but is not limited to, the following measures subject to the review and approval of the City of Stockton:

- *Provide secure bicycle parking in conjunction with the non-residential portion of the Project.*
- *Provide on-site amenities that encourage alternative transportation modes such as locker, shower, and secure bike storage facilities.*
- *Coordinate SJCOG's Commute Connection Program.*

Mitigation Measure 3.3-4: *Prior to the approval of building plans, the Project proponent shall prepare and implement the following additional mitigation measures, as feasible:*

- *Require the utilization of Energy Star-compliant roof materials on Project buildings.*
- *Require Project residences to be designed to take advantage of sun and to maximize shade.*
- *Require developers to offer buyers optional packages that incorporate passive solar design and solar heaters.*
- *Prescribe limits for idling time for commercial vehicles that are consistent with CARB standards, including delivery and construction vehicles.*
- *Require developers to install energy-efficient appliances and equipment, where applicable.*
- *Require developers to install water-efficient appliances, toilets, faucets, and shower heads, where applicable.*
- *Require developers to offer buyers optional packages that incorporate photovoltaic roofing tiles.*

Mitigation Measure 3.3-5: *Prior to and during Project construction activities, the Project proponent shall provide prospective buyers of any of the single-family residential units the option to pre-install rooftop solar.*

Mitigation Measure 3.3-6: *Prior to Project operation, the Project proponent shall install the requisite on-site electrical infrastructure necessary to allow for hook-ups for electric plug-in vehicles.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of the mitigation measures outlined above, emissions levels may remain above the defined thresholds of significance for the Project as a whole. Compliance with Rule 9510 would result in the payment of fees to the SJVAPCD to be used as offsets for emissions; however, the exact use of the fees by the SJVAPCD for offsets are not known at this time and cannot be fully calculated by the lead agency at this stage in the planning process. As such, operation of the proposed Project would have a **significant and unavoidable** impact relative to operational air emissions. The level of significance may be reduced through the regulatory enforcement of Rule 9510 at some future time.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not

result in a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project, and would reduce the number of LDR units. This would result in a reduction of seven units when compared to the proposed Project. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the With Bridge Alternative. The modeling effort utilized the same basic parameters for this alternative as provided for the proposed Project. Table 3.3-9 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the With Bridge Alternative.

As shown in Table 3.3-9 below, annual emissions of ROG, NO_x, and PM₁₀ exceed the SJVAPCD thresholds of significance. Compared to the proposed Project, the With Bridge Alternative would result in an approximately equal amount of operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

TABLE 3.3-9: WITH BRIDGE ALTERNATIVE OPERATIONAL BUILDOUT GENERATED EMISSIONS

	ROG		NO _x		PM ₁₀		PM _{2.5}	
	tons/year		tons/year		tons/year		tons/year	
<i>Thresholds</i>	≤ 10 tons/year		≤ 10 tons/year		≤ 15 tons/year		≤ 15 tons/year	
<i>Category</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>
Area	18.14	12.89	1.47	0.69	7.89	0.11	7.89	0.11
Energy	0.19	0.19	1.65	1.65	0.13	0.13	0.13	0.13
Mobile	6.64	6.42	45.20	42.97	18.23	16.46	5.08	4.58
Total	24.98	19.50	48.32	45.31	26.25	16.70	13.09	4.82
Threshold Exceeded?	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Percent Reduction from Mitigation	21.9		6.2		36.4		63.2	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-4.

SOURCE: CAL EEMOD, v.2016.3.2.

PM_{2.5} emissions would be below the threshold of significance, with or without the mitigation inputs above; however, the ROG, NO_x, and PM₁₀ would exceed the SJVAPCD thresholds of significance for operations even with mitigation. Similar to the proposed Project, the With Bridge Alternative is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in

3.3 AIR QUALITY

substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. However, even with the application of the ISR and the mitigation measures described above, emissions levels may remain above the defined thresholds of significance for the With Bridge Alternative as a whole. As such, operation of the With Bridge Alternative would have a **significant and unavoidable** impact relative to operational air emissions. Compared to the proposed Project, this alternative is superior relative to this topic.

General Plan 2035 Alternative:

The General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the General Plan 2035 Alternative. The CalEEMod™ (v.2016.3.2) modeling effort utilized the same assumptions for this alternative. Table 3.3-10 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the General Plan 2035 Alternative.

As shown in Table 3.3-10 below, annual emissions of ROG, NO_x, and PM₁₀ exceed the SJVAPCD thresholds of significance. Compared to the proposed Project, the General Plan 2035 Alternative would result in an increase in operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

TABLE 3.3-10: GENERAL PLAN 2035 ALTERNATIVE OPERATIONAL BUILDOUT GENERATED EMISSIONS

	ROG		NO _x		PM ₁₀		PM _{2.5}	
	tons/year		tons/year		tons/year		tons/year	
Thresholds	≤ 10 tons/year		≤ 10 tons/year		≤ 15 tons/year		≤ 15 tons/year	
Category	UM	M	UM	M	UM	M	UM	M
Area	19.83	14.58	1.43	0.65	7.88	0.10	7.88	0.10
Energy	0.22	0.22	1.90	1.90	0.15	0.15	0.15	0.15
Mobile	7.21	6.96	49.04	46.62	19.80	17.87	5.51	4.97
Total	27.26	21.76	52.37	49.17	27.83	18.12	13.54	5.22
Threshold Exceeded?	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Percent Reduction from Mitigation	20.2		6.1		34.9		61.4	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-4.

SOURCE: CAL EEMOD, V.2016.3.2.

PM_{2.5} is below the thresholds of significance; however, the ROG, NO_x, and PM₁₀ would exceed the SJVAPCD thresholds of significance for operations even with mitigation. Similar to the proposed

Project, the General Plan 2035 Alternative is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. However, even with the application of the ISR and the mitigation measures described above, emissions levels may remain above the defined thresholds of significance for the General Plan 2035 Alternative as a whole. As such, operation of the General Plan 2035 Alternative would have a **significant and unavoidable** impact relative to operational air emissions. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as described in the Project Description, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a school.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the Reduced Project Alternative. The CalEEMod™ (v.2016.3.2) modeling effort utilized the same assumptions for this alternative. Table 3.3-11 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the Reduced Project Alternative.

TABLE 3.3-11: REDUCED PROJECT ALTERNATIVE OPERATIONAL BUILDOUT GENERATED EMISSIONS

	ROG		NO _x		PM ₁₀		PM _{2.5}	
	tons/year		tons/year		tons/year		tons/year	
<i>Thresholds</i>	≤ 10 tons/year		≤ 10 tons/year		≤ 15 tons/year		≤ 15 tons/year	
<i>Category</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>	<i>UM</i>	<i>M</i>
Area	12.24	8.68	1.00	0.47	5.36	0.07	5.35	0.07
Energy	0.13	0.13	1.11	1.11	0.09	0.09	0.090	0.090
Mobile	3.37	3.24	23.37	22.15	10.01	9.03	2.78	2.51
Total	15.75	12.06	25.49	23.74	15.45	9.20	8.23	2.68
Threshold Exceeded?	Yes	Yes	Yes	Yes	Yes	No	No	No
Percent Reduction from Mitigation	31.31		13.83		53.63		78.42	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-4.

SOURCE: CALEEMOD, v.2016.3.2.

As shown in Table 3.3-11 above, annual emissions of ROG and NO_x exceed the SJVAPCD thresholds of significance, even with mitigation incorporated. Compared to the proposed Project, the Reduced Project Alternative would result in a reduction in operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

PM_{2.5} emissions would be below the threshold of significance, with or without the mitigation inputs above; however, the ROG and NO_x would exceed the SJVAPCD thresholds of significance for operations even with mitigation. PM₁₀ would be below the threshold of significance with mitigation inputs. Similar to the proposed Project, the Reduced Project Alternative is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. However, even with the application of the ISR and the mitigation measures described above, emissions levels may remain above the defined thresholds of significance for the Reduced Project Alternative as a whole. As such, operation of the Reduced Project Alternative would have a **significant and unavoidable** impact relative to operational air emissions. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under this alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a school.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the Reduced Intensity/Density Alternative. The CalEEMod™ (v.2016.3.2) modeling effort utilized the same assumptions for this alternative. Table 3.3-12 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the Reduced Intensity/Density Alternative.

TABLE 3.3-12: REDUCED INTENSITY/DENSITY ALTERNATIVE OPERATIONAL BUILDOUT GENERATED EMISSIONS

	ROG		NO _x		PM ₁₀		PM _{2.5}	
	tons/year		tons/year		tons/year		tons/year	
Thresholds	≤ 10 tons/year		≤ 10 tons/year		≤ 15 tons/year		≤ 15 tons/year	
Category	UM	M	UM	M	UM	M	UM	M
Area	17.65	12.40	1.33	0.55	7.87	0.09	7.87	0.09
Energy	0.15	0.15	1.29	1.29	0.10	0.10	0.10	0.10
Mobile	3.88	3.74	26.94	25.53	11.55	10.42	3.21	2.90
Total	21.67	16.29	29.56	27.37	19.53	10.61	11.18	3.09
Threshold Exceeded?	Yes	Yes	Yes	Yes	Yes	No	No	No
Percent Reduction from Mitigation	24.9		7.4		45.6		72.4	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂. CO SCREENING IS PERFORMED UNDER IMPACT 3.3-4.

SOURCE: CALFEEMOD, V.2016.3.2.

As shown in Table 3.3-12 above, annual unmitigated emissions of ROG, NO_x, and PM₁₀ exceed the SJVAPCD thresholds of significance. With mitigation, PM₁₀ would be reduced to below the applicable SJVAPCD threshold of significance. Compared to the proposed Project, the Reduced Intensity/Density Alternative would result in a reduction in operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

Similar to the proposed Project, the Reduced Intensity/Density Alternative is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. However, even with the application of the ISR and the mitigation measures described above, emissions levels may remain above the defined thresholds of significance for the Reduced Project Alternative as a whole. As such, operation of the Reduced Intensity/Density Alternative would have a **significant and unavoidable** impact relative to operational air emissions. Compared to the proposed Project, this alternative is superior relative to this topic.

Impact 3.3-3: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. (Less than Significant with Mitigation)

Proposed Project:

Construction Activities

Construction activities will consist of multiple phases over several years. These construction activities can be described as site improvements (grading, underground infrastructure, and topside improvements) and vertical construction (building construction and architectural coatings). For purposes of this analysis, it is assumed that Project build-out would occur from 2019 through early

2024. Actual construction emissions will be dependent on market conditions and may be spread out over an extended period. A schedule that goes beyond 2024 would further reduce the potential to exceed the applicable criteria pollutant thresholds (given that they are measured in terms of tons per year).

Site Improvements: The exact construction schedule of the entire Project is largely dependent on market demands. For purposes of this analysis it is assumed that site improvements are installed in one phase. This approach will present a more conservative and worst-case scenario.

The site improvement phase of construction will begin with site preparation. This step will include the use of dozers, backhoes, and loaders to strip (clear and grub) all organic materials and the upper half-inch to inch of soil from the Project site. This task will generally take 20 days to complete and will include vehicle trips from construction workers. Given that the Project site lacks significant vegetation, this step may be less than the assumed 20 days.

After the site is striped of organic materials grading will begin. This activity will involve the use of excavators, graders, dozers, scrapers, loaders, and backhoes to move soil around the Project site to create specific engineered grade elevations and soil compaction levels. Grading the Project site would take approximately 180 days and will include vehicle trips from construction workers. *(Note: It would be possible to grade the site under a more compacted schedule using more equipment operating or under a longer timeframe with less equipment.).*

The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and access aprons and then paving of all streets and parking lots. This task will involve the use of pavers, paving equipment, and rollers and will take approximately 80 days and will include vehicle trips from construction workers. *(Note: It would be possible to install the topside improvements under a more compacted schedule using more equipment, or under a longer timeframe with less equipment).*

Building Construction/Architectural Coatings: Building construction involves the vertical construction of structures and landscaping around the structures. This task will involve the use of forklifts, generator sets, welders and small tractors/loaders/backhoes. The exact construction schedule of the entire Project is largely dependent on market demands. For purposes of this analysis it is assumed that the entire Project is constructed in approximately four years. The actual building construction phase may be much shorter or much longer. Architectural coatings involve the interior and exterior painting associated with the structures. This task will generally begin five months after construction begins on the structure and will generally be completed with the completion of the individual buildings.

Construction Emissions

The proposed Project is larger in scope and size than the SJVAPCD's Small Project Analysis Level (SPAL). Therefore, a quantification of Project construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5} has been performed using CalEEMod™ (v. 2016.3.2). In addition to the operational model assumptions presented under Impact 3.3-2 above, below is a list of model assumptions used in the

construction screens of CalEEMod. Table 3.3-13 presents the estimated construction phase schedule, which shows the duration of each construction phase.

TABLE 3.3-13: CONSTRUCTION PHASE

PHASE #	PHASE NAME	START DATE	END DATE	# DAYS WEEK	# DAYS
1	Site Preparation	1/1/2019	1/28/2019	5	20
2	Grading	1/29/2019	10/7/2019	5	180
3	Building Construction	10/8/2019	10/11/2023	5	1,047
4	Paving	10/8/2019	1/27/2020	5	80
5	Architectural Coating	12/8/2019	1/10/2024	5	1,068

SOURCE: CAL EEMOD, v.2016.3.2.

Table 3.3-14 shows the off-road construction equipment used during construction for each phase.

TABLE 3.3-14: OFF-ROAD EQUIPMENT

EQUIPMENT TYPE	UNIT AMOUNT	HOURS/DAY	HORSEPOWER	LOAD FACTOR
SITE PREPARATION				
Rubber Tired Dozers	3	8.00	247	0.40
Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading				
Excavators	2	8.00	158	0.38
Graders	1	8.00	187	0.41
Rubber Tired Dozers	1	8.00	247	0.40
Scrapers	2	8.00	367	0.48
Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction				
Cranes	1	7.00	231	0.29
Forklifts	3	8.00	89	0.20
Generator Sets	1	8.00	84	0.74
Tractors/Loaders/Backhoes	3	7.00	97	0.37
Welders	1	8.00	46	0.45
Paving				
Pavers	2	8.00	130	0.42
Paving Equipment	2	8.00	132	0.36
Rollers	2	8.00	80	0.38
Architectural Coatings				
Air Compressors	1	6.00	78	0.48

SOURCE: CAL EEMOD, v.2016.3.2.

Table 3.3-15 shows the construction emissions for the construction years 2019 through early 2024.

The SJVAPCD has established construction-related emissions thresholds of significance as follows: 10 tons per year of NO_x, 10 tons per year of ROG, or 15 tons per year of PM₁₀ or PM_{2.5}. If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for construction-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table 3.3-15 above, annual emissions will not exceed the SJVAPCD thresholds of significance in any given year. However, regardless of emission quantities, the SJVAPCD requires construction-related mitigation in accordance with their rules and regulations. Implementation of the following mitigation

3.3 AIR QUALITY

measures will ensure that the proposed Project would reduce construction-related emissions to a **less than significant** impact.

TABLE 3.3-15: CONSTRUCTION EMISSIONS IN TONS PER YEAR (UNMITIGATED)

	ROG	NO _x	PM ₁₀ Total	PM _{2.5} Total
Thresholds	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	1.11	7.33	1.58	0.78
2020	6.76	6.12	1.26	0.47
2021	6.64	5.39	1.21	0.43
2022	6.55	4.95	1.19	0.41
2023	6.36	3.320	0.95	0.31
2024	0.18	0.01	<0.01	<0.01
Total	27.59	27.09	6.18	2.40
Threshold Exceeded in any year?	No	No	No	No

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂.

SOURCE: CALFEEMOD, V.2016.3.2.

MITIGATION MEASURES

Mitigation Measure 3.3-7: *The Project proponent shall ensure that the Project complies with all applicable SJVAPCD rules and regulations.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of the mitigation measure outlined above, the proposed Project would reduce construction-related emissions to a **less than significant** impact.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Table 3.3-16 shows the construction emissions for the construction years 2019 through early 2024. The construction phasing for the With Bridge Alternative was assumed to be the same as the proposed Project.

TABLE 3.3-16: WITH BRIDGE ALTERNATIVE CONSTRUCTION EMISSIONS (UNMITIGATED)

	ROG	NO _x	PM ₁₀ Total	PM _{2.5} Total
Thresholds	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	1.11	7.31	1.58	0.78
2020	6.69	6.09	1.25	0.47
2021	6.57	5.38	1.21	0.43
2022	6.48	4.94	1.18	0.41
2023	6.29	3.31	0.94	0.31
2024	0.34	0.01	0.01	<0.01
Total	27.47	27.04	6.18	2.40
Threshold Exceeded in any year?	No	No	No	No

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂.

SOURCE: CALEEMOD, V.2016.3.2.

As shown in Table 3.3-16, annual emissions of ROG, NO_x, PM₁₀, and PM_{2.5} will not exceed the SJVAPCD thresholds of significance within a single year throughout the construction timeframe. Compared to the proposed Project, the With Bridge Alternative would result in approximately equal construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

Regardless of emission quantities, the SJVAPCD requires construction-related mitigation in accordance with their rules and regulations. Implementation of the same mitigation measures as the proposed Project will ensure that the With Bridge Alternative would reduce construction-related emissions to the extent possible. Because this alternative would result in construction emissions which would not exceed the SJVAPCD thresholds, the With Bridge Alternative would have a **less than significant** impact related to construction emissions. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

Table 3.3-17 shows the construction emissions for the construction years 2019 through early 2024. The construction phasing for the General Plan 2035 Alternative was assumed to be the same as the proposed Project.

As shown in Table 3.3-17, annual emissions of ROG, NO_x, PM₁₀, and PM_{2.5} will not exceed the SJVAPCD thresholds of significance within a single year throughout the construction timeframe. Compared to the proposed Project, the General Plan 2035 Alternative would result in an increase in construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

3.3 AIR QUALITY

TABLE 3.3-17: GENERAL PLAN 2035 ALTERNATIVE CONSTRUCTION EMISSIONS (UNMITIGATED)

	ROG	NO _x	PM ₁₀ Total	PM _{2.5} Total
Thresholds	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	1.23	7.56	1.72	0.82
2020	7.73	7.09	1.97	0.66
2021	7.57	6.27	1.92	0.62
2022	7.46	5.77	1.89	0.60
2023	7.19	3.84	1.51	0.47
2024	0.20	0.01	0.01	<0.01
Total	31.38	30.54	9.01	0
Threshold Exceeded in any year?	No	No	No	No

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂.

SOURCE: CALFEEMOD, V.2016.3.2.

Regardless of emission quantities, the SJVAPCD requires construction-related mitigation in accordance with their rules and regulations. Implementation of the same mitigation measures as the proposed Project will ensure that the With Bridge Alternative would reduce construction-related emissions to the extent possible. Because this alternative would result in construction emissions which would not exceed the SJVAPCD thresholds, the With Bridge Alternative would have a **less than significant** impact related to construction emissions. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This approximately 200.15-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

Table 3.3-18 shows the construction emissions for the construction years 2019 through early 2024.

TABLE 3.3-18: REDUCED PROJECT ALTERNATIVE CONSTRUCTION EMISSIONS (UNMITIGATED)

	ROG	NO _x	PM ₁₀ Total	PM _{2.5} Total
Thresholds	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	0.94	7.02	1.41	0.75
2020	4.65	4.94	0.89	0.36
2021	4.55	4.34	0.85	0.33
2022	4.49	3.97	0.82	0.31
2023	4.34	2.71	0.65	0.23
2024	0.12	0.01	<0.01	<0.01
Total	19.09	22.99	4.62	1.98
Threshold Exceeded in any year?	No	No	No	No

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂.

SOURCE: CALFEEMOD, v.2016.3.2.

As shown in Table 3.3-18 above, all annual emissions will be below the SJVAPCD thresholds of significance in any one year. Compared to the proposed Project, the Reduced Project Alternative would result in a decrease in construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

Regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the same mitigation measures as the proposed Project will ensure that the Reduced Project Alternative would reduce construction related emissions to the extent possible. With implementation of Mitigation Measure 3.3-5, the Reduced Project Alternative would have a **less than significant** impact related to construction emissions. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Table 3.3-19 shows the construction emissions for the construction years 2019 through early 2024. As shown in Table 3.3-19, all annual emissions will be below the SJVAPCD thresholds of significance in any one year. Compared to the proposed Project, the Reduced Intensity/Density Alternative would result in a decrease in construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

3.3 AIR QUALITY

TABLE 3.3-19: REDUCED INTENSITY/DENSITY ALTERNATIVE CONSTRUCTION EMISSIONS (UNMITIGATED)

	ROG	NO _x	PM ₁₀ Total	PM _{2.5} Total
Thresholds	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	1.07	7.10	1.52	0.77
2020	6.46	5.27	1.00	0.39
2021	6.35	4.64	0.96	0.36
2022	6.27	4.25	0.94	0.34
2023	6.11	2.89	0.74	0.26
2024	0.18	0.01	<0.01	<0.01
Total	26.42	24.16	5.17	2.11
Threshold Exceeded in any year?	No	No	No	No

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO, AND SO₂.

SOURCE: CALEEMOD, V.2016.3.2.

Regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the same mitigation measures as the proposed Project will ensure that the Reduced Intensity/Density Alternative would reduce construction related emissions to the extent possible. With implementation of Mitigation Measure 3.3-5, the Reduced Intensity/Density Alternative would have a **less than significant** impact related to construction emissions. Compared to the proposed Project, this alternative is superior relative to this topic.

Impact 3.3-4: The proposed Project would not result in carbon monoxide hotspot impacts. (Less than Significant)

Proposed Project:

Project traffic would increase concentrations of CO along streets providing access to the Project site. CO is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

The SJVAPCD recommends utilizing a screening approach for analyzing CO concentrations to determine if dispersion modeling is warranted. The methodology provides lead agencies with a conservative indication of whether Project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The recommended screening criteria are divided into two tiers, as described below.

First Tier: The proposed Project will result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the proposed Project will not result in deterioration of intersection level of service (LOS) to LOS E or F; or
- The Project will not contribute additional traffic to an intersection that already operates at LOS of E or F.

For the proposed Project, the first tier is not met because, according to the traffic analysis prepared for the proposed Project (KD Anderson & Associates, 2017), the operations at the Morada Lane / SR 99 East Frontage Road and the Eight Mile Road / SR 99 West Frontage Road intersections under the Existing condition currently operates at Peak Hour LOS E or F. Additionally, there are four intersections that would operate at an LOS E or F during the Peak Hour for Existing Plus Approved Projects (EPAP) Plus Project condition:

- #3 Eight Mile Road & Thornton Road
- #8 Eight Mile Road & West Lane
- #21 SR 99 East Frontage Rd & SR 99 Northbound Ramps (Morada Lane)
- #22 Morada Lane & SR 99 West Frontage Road

As such, the proposed Project does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined.

Second Tier: If all of the following criteria are met, the proposed Project will result in a less-than-significant impact to air quality for local CO.

- The Project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The Project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

The proposed Project screens out under the second tier because it meets all three criteria. First, the intersections that will operate at LOS E or F (listed above), will only experience traffic of between 1,339 to 1,633 vehicles per hour during the AM peak hour. The maximum of daily trips is significantly below the 31,600 vehicles per hour threshold. Secondly, these intersections do not include a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway or other locations where horizontal or vertical mixing of air will be substantially limited. Lastly, the mix of vehicle types at these intersections is not anticipated to be substantially different from the County average (KD Anderson, 2017). As such, the proposed Project screens out satisfactorily under tier 2, and the impacts of CO from the Project would be less than significant.

The traffic study for the proposed Project examined LOS for road segments, intersections, and SR 99 ramps affected by the proposed Project. There are six intersections that would operate at an LOS E or F during the Peak Hour for EPAP Plus Project condition. The screening approach for analyzing CO concentrations was used to analyze CO impacts for the proposed Project. The proposed Project screens out satisfactorily under tier 2, as discussed above. Therefore, changes in carbon monoxide levels resulting from the proposed Project would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not increase traffic on local area roadways and, thus, would not increase concentrations of carbon monoxide along streets providing access to the Project site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmental superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As noted above, elevated concentrations (i.e. hotspots) of CO are usually only found near areas of high traffic volume and congestion. A screening approach for analyzing CO concentrations was used to determine if dispersion modeling is warranted. This methodology provides a conservative indication of whether Project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The screening criteria are divided into two tiers, as described below.

First Tier: For the With Bridge Alternative, the first tier is not met because, according to the traffic analysis prepared for the proposed Project (KDAnderson & Associates, 2017), the operations at the Morada Lane / SR 99 East Frontage Road and the Eight Mile Road / SR 99 West Frontage Road intersections under the Existing condition currently operates at Peak Hour LOS E or F. Additionally, there are four intersections that would operate at an LOS E or F during the Peak Hour for EPAP Plus With Bridge Alternative condition:

- #3 Eight Mile Road & Thornton Road
- #8 Eight Mile Road & West Lane
- #21 SR 99 East Frontage Rd & SR 99 Northbound Ramps (Morada Lane)
- #22 Morada Lane & SR 99 West Frontage Road

The With Bridge Alternative does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined.

Second Tier: The With Bridge Alternative screens out under the second tier because it meets all three criteria. First, the intersections that will operate at LOS E or F (listed above), will only experience traffic of between 1,339 to 1,633 vehicles per hour during the AM peak hour. The maximum of daily trips is significantly below the 31,600 vehicles per hour threshold. Secondly, these intersections do not include a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited. Lastly, the mix of vehicle types at these intersections is not anticipated to be substantially different from the County average (KD Anderson, 2016). As such, the With Bridge Alternative screens out satisfactorily under tier 2.

The With Bridge Alternative screens out satisfactorily under tier 2, as discussed above. Therefore, changes in carbon monoxide levels resulting from the With Bridge Alternative would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As noted above, elevated concentrations (i.e. hotspots) of CO are usually only found near areas of high traffic volume and congestion. A screening approach for analyzing CO concentrations was used to determine if dispersion modeling is warranted. This methodology provides a conservative indication of whether Project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The screening criteria are divided into two tiers, as described below.

First Tier: For the General Plan 2035 Alternative, the first tier is not met because, according to the traffic analysis prepared for the proposed Project (KDAnderson & Associates, 2017), the operations at the Morada Lane / SR 99 East Frontage Road and the Eight Mile Road / SR 99 West Frontage Road intersections under the Existing condition currently operates at Peak Hour LOS E or F. Additionally, there are two intersections that would operate at an LOS E or F during the Peak Hour for EPAP Plus General Plan 2035 Alternative condition:

- #21 SR 99 East Frontage Rd & SR 99 Northbound Ramps (Morada Lane)
- #22 Morada Lane & SR 99 West Frontage Road

As such, the General Plan 2035 Alternative does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined.

Second Tier: The General Plan 2035 Alternative screens out under the second tier because it meets all three criteria. First, the intersections that will operate at LOS E or F (listed above), will only experience traffic of between 1,339 to 1,633 vehicles per hour during the AM peak hour. The maximum of daily trips is significantly below the 31,600 vehicles per hour threshold. Secondly, these intersections do not include a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited. Lastly, the mix of vehicle types at these intersections is not anticipated to be substantially different from the County average (KD Anderson, 2016). As such, the General Plan 2035 Alternative screens out satisfactorily under tier 2.

The General Plan 2035 Alternative screens out satisfactorily under tier 2, as described above. Therefore, changes in carbon monoxide levels resulting from the General Plan 2035 Alternative would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact. Compared to the proposed Project, this alternative is slightly inferior relative to this topic.

3.3 AIR QUALITY

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 197.05 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 197.05 acres and would eliminate the existing industrial uses and proposed commercial uses. As noted above, elevated concentrations (i.e. hotspots) of CO are usually only found near areas of high traffic volume and congestion. A screening approach for analyzing CO concentrations was used to determine if dispersion modeling is warranted. This methodology provides a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The recommended screening criteria are divided into two tiers, as described below.

First Tier: For the Reduced Project Alternative, the first tier is not met because, according to the traffic analysis prepared for the proposed Project (KDAnderson & Associates, 2017), the operations at the Morada Lane / SR 99 East Frontage Road and the Eight Mile Road / SR 99 West Frontage Road intersections under the Existing condition currently operates at Peak Hour LOS E or F. Additionally, there are four intersections that would operate at an LOS E or F during the Peak Hour for EPAP Plus Reduced Project Alternative condition:

- #3 Eight Mile Road & Thornton Road
- #8 Eight Mile Road & West Lane
- #21 SR 99 East Frontage Rd & SR 99 Northbound Ramps (Morada Lane)
- #22 Morada Lane & SR 99 West Frontage Road

As such, the Reduced Project Alternative does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined.

Second Tier: The Reduced Project Alternative screens out under the second tier because it meets all three criteria. First, the intersections that will operate at LOS E or F (listed above), will only experience traffic of between 1,339 to 1,633 vehicles per hour during the AM peak hour. The maximum of daily trips is significantly below the 31,600 vehicles per hour threshold. Secondly, these intersections do not include a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited. Lastly, the mix of vehicle types at these intersections is not anticipated to be substantially different from the County average (KD Anderson, 2016). As such, the Reduced Project Alternative screens out satisfactorily under tier 2.

The Reduced Project Alternative screens out satisfactorily under tier 2, as described above. Therefore, changes in carbon monoxide levels resulting from the Reduced Project Alternative would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. As noted above, elevated concentrations (i.e. hotspots) of carbon monoxide are usually only found near areas of high traffic volume and congestion. A screening approach for analyzing CO concentrations was used to determine if dispersion modeling is warranted. This methodology provides a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The recommended screening criteria are divided into two tiers, as described below.

First Tier: For the Reduced Intensity/Density Alternative, the first tier is not met because the operations at the Morada Lane / SR 99 East Frontage Road and the Eight Mile Road / SR 99 West Frontage Road intersections under the Existing condition currently operates at Peak Hour LOS E or F. Additionally, there are four intersections that would operate at an LOS E or F during the Peak Hour for EPAP Plus Reduced Intensity/Density Alternative condition:

- #3 Eight Mile Road & Thornton Road
- #8 Eight Mile Road & West Lane
- #21 SR 99 East Frontage Rd & SR 99 Northbound Ramps (Morada Lane)
- #22 Morada Lane & SR 99 West Frontage Road

As such, the Reduced Intensity/Density Alternative does not screen out satisfactorily under tier 1. The screening approach requires that if the first tier of screening criteria is not met then the second tier of screening criteria shall be examined.

Second Tier: The Reduced Intensity/Density Alternative screens out under the second tier because it meets all three criteria. First, the intersections that will operate at LOS E or F (listed above), will only experience traffic of between 1,339 to 1,633 vehicles per hour during the AM peak hour. The maximum of daily trips is significantly below the 31,600 vehicles per hour threshold. Secondly, these intersections do not include a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited. Lastly, the mix of vehicle types at these intersections is not anticipated to be substantially different from the County average (KD Anderson, 2016). As such, the Reduced Intensity/Density Alternative screens out satisfactorily under tier 2.

The Reduced Intensity/Density Alternative screens out satisfactorily under tier 2, as described above. Therefore, changes in carbon monoxide levels resulting from the Reduced Intensity/Density Alternative would not result in violations of the ambient air quality standards, and would represent a **less than significant** impact. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Impact 3.3-5: The proposed Project would not result in public exposure to toxic air contaminants. (Less than Significant)

Proposed Project:

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and Federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT emissions in California will decrease at an equal or greater rate than the U.S. EPA's national projections.

The CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 3.3-20 provides the CARB minimum separation recommendations on siting sensitive land uses.

TABLE 3.3-20: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

<i>SOURCE CATEGORY</i>	<i>ADVISORY RECOMMENDATIONS</i>
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	<ul style="list-style-type: none"> • Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-ethylene	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB, 2005).

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools.

There are sensitive receptors such as residences and parks that are proposed as part of this Project. The new residences and park amenities are well beyond the minimum separation distance from toxic air emitters. Additionally, the only source category identified in the CARB minimum separation standards that would be developed as part of the Project would be the convenience store with attached fueling facility. As shown in Table 3.3-20, the CARB minimum separation recommendations from gasoline dispensing facilities applies if the facility has a throughput of 3.6 million gallons per year or greater. However, the proposed fueling facility is anticipated to have a throughput under 3.6 million gallons per year because the fueling facility would be considered a neighborhood gas station and is not located along a major freeway. According to the Retail Fuel Report and Data for California released by the California Energy Commission, the average gasoline sales per station in 2012 was 1.58 million gallons per year. Additionally, the fueling facility would be located approximately two miles west of State Route 99 and approximately four miles east of Interstate 5. Three existing fueling facilities in the Project area, ARCO (900 S Cherokee Lane, Lodi), Shell (7700 Moreland Street, Stockton), and ARCO (255 E Harney Lane, Lodi) are located within 0.5-miles of State Route 99. Two existing fueling facilities in the Project area, Chevron (2905 W Benjamin Holt Drive, Stockton) and Shell (6437 W Banner Street, Lodi) are located within 0.15-miles of Interstate 5. Travelers along State Route 99 and Interstate 5 would likely utilize one of the three aforementioned fueling facilities because of their close distances to the freeway. The

3.3 AIR QUALITY

proposed residential units would be a minimum of 600 feet away from the proposed fueling facility, which is well beyond the minimum separation distance from the fueling facility. Additionally, although not proposed as part of the Project, should a dry cleaner business which uses perchloro-ethylene opt to lease one of the future retail shops, the business would be required to maintain adequate separation from sensitive land uses, or consult with the local air district to ensure that it meets all applicable requirements. Therefore, implementation of the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce sensitive receptors to the Project area which could be exposed to toxic air contaminants. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project. As noted above, the CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel PM, benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses.

Similar to the proposed Project, sensitive receptors, such as residences and parks, would be developed as part of the With Bridge Alternative. The new residences and park amenities are well beyond the minimum separation distance toxic air emitters. Additionally, the only source category identified in the CARB minimum separation standards that would be developed as part of the With Bridge Alternative would be the convenience store with attached fueling facility. However, the fueling facility is anticipated to have a throughput under 3.6 million gallons per year because the fueling facility would be considered a neighborhood gas station and is not located along a major freeway. As noted above, the average gasoline sales per station in 2012 was 1.58 million gallons per year. The fueling facility included as part of the With Bridge Alternative would not likely exceed the State average for gasoline sales. Additionally, the residential units would be a minimum of 600 feet away from the fueling facility. Implementation of the With Bridge Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As noted above, the CARB Handbook indicates that

mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel PM, benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses.

Similar to the proposed Project, sensitive receptors, such as residences and parks, would be developed as part of the General Plan 2035 Alternative. The new residences and park amenities are well beyond the minimum separation distance toxic air emitters. Additionally, the only source category identified in the CARB minimum separation standards that would be developed as part of the General Plan 2035 Alternative would be the convenience store with attached fueling facility. However, the fueling facility is anticipated to have a throughput under 3.6 million gallons per year because the fueling facility would be considered a neighborhood gas station and is not located along a major freeway. As noted above, the average gasoline sales per station in 2012 was 1.58 million gallons per year. The fueling facility included as part of the General Plan 2035 Alternative would not likely exceed the State average for gasoline sales. Additionally, the residential units would be a minimum of 600 feet away from the fueling facility. Implementation of the General Plan 2035 Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 197.05 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 197.05 acres and would eliminate the existing industrial uses and proposed commercial uses.

As noted above, the CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel PM, benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses.

Similar to the proposed Project, sensitive receptors, such as residences and parks, would be developed as part of the Reduced Project Alternative. The new residences and park amenities are well beyond the minimum separation distance toxic air emitters. Additionally, unlike the proposed Project, the Reduced Project Alternative does not include any of the source categories identified in the CARB minimum separation standards. Implementation of the Reduced Project Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted above, the CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel PM, benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses.

Similar to the proposed Project, sensitive receptors, such as residences and parks, would be developed as part of the Reduced Intensity/Density Alternative. The new residences and park amenities are well beyond the minimum separation distance toxic air emitters. Additionally, unlike the proposed Project, the Reduced Intensity/Density Alternative does not include any of the source categories identified in the CARB minimum separation standards. Implementation of the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.3-6: The proposed Project would not result in exposure to odors. (Less than Significant)

Proposed Project:

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The general nuisance rule (Heath and Safety Code §41700) is the basis for the threshold.

Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. The proposed Project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses. The proposed commercial area in the northwest portion of the Project site would include a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room.

Commercial uses, particularly retail, are not typically associated with the creation of objectionable odors. However, restaurants, especially fast food restaurants, have the potential to generate substantial sources of odors as a result of cooking processes and food waste disposal. Char

broilers, deep-fryers, and ovens tend to produce food odors that could be considered offensive to some people. The food waste produced by the proposed quick service restaurant could putrefy if not properly managed, which could produce objectionable odors. The proposed restaurant would involve food preparation that could result in cooking exhaust and smoke, and would produce food waste. As odors are highly subjective, one receptor may consider cooking exhaust and related smoke an acceptable odor, while another receptor may find such odors objectionable. Nonetheless, the restaurant use would be required to comply with all State and local regulations associated with cooking equipment and controls, such as grease filtration and removal systems, exhaust hood systems, and blowers to move air into the hood systems, through air cleaning equipment, and then outdoors.¹ Such equipment would ensure that pollutants associated with smoke and exhaust from cooking surfaces would be captured and filtered, allowing only filtered air to be released into the atmosphere. A few single-family residences are located immediately opposite the proposed commercial and residential uses on Eight Mile Road; however, the nearby sensitive receptors are located more than 800 feet from the Project site, and odors dissipate with distance. Furthermore, a number of existing industrial and commercial uses are located in the vicinity of the Project site. As a result, odors associated with cooking exhaust would be minimized and would not be considered a major source of objectionable odors that would affect a substantial number of people.

Decomposition of biological materials, such as food waste and other trash, could create objectionable odors if not properly contained and handled. The proposed Project would provide waste receptacles throughout the facilities and would utilize outdoor trash dumpsters with lids, which would be picked up regularly during normal solid waste collection operating hours within the area. The dumpster lids are intended to contain odors emanating from the dumpsters. The dumpsters would be stored in screened areas for further protection from potential objectionable odors. The garbage collected on-site and stored in the outdoor dumpsters would not be on-site long enough to cause substantial odors. Thus, the outdoor, enclosed, and covered trash dumpsters that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

In conclusion, impacts would be **less than significant** regarding this environmental topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in objectionable odors. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

¹ City of Stockton Municipal Code. Chapter 13.40: Discharges of Fats, Oils and Grease From Food Service Establishments. Current through Ordinance 2017-03-28-1502 and the July 2017 code supplement.

3.3 AIR QUALITY

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the With Bridge Alternative would not introduce any odor-generating land uses and is not located in the vicinity of any such existing or planned land uses. The With Bridge Alternative would likely result in similar commercial uses as the proposed Project.

Similar to the proposed Project, the restaurant use under the With Bridge Alternative would be required to comply with all State and local regulations associated with cooking equipment and controls, such as grease filtration and removal systems, exhaust hood systems, and blowers to move air into the hood systems, through air cleaning equipment, and then outdoors. Such equipment would ensure that pollutants associated with smoke and exhaust from cooking surfaces would be captured and filtered, allowing only filtered air to be released into the atmosphere.

Similar to the proposed Project, the With Bridge Alternative would provide waste receptacles throughout the facilities and would utilize outdoor trash dumpsters with lids, which would be picked up regularly during normal solid waste collection operating hours within the area. The dumpster lids are intended to contain odors emanating from the dumpsters. The dumpsters would be stored in screened areas for further protection from potential objectionable odors. The garbage collected on-site and stored in the outdoor dumpsters would not be on-site long enough to cause substantial odors. Thus, the outdoor, enclosed, and covered trash dumpsters that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

In conclusion, impacts would be **less than significant** regarding this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Similar to the proposed Project, the General Plan 2035 Alternative would not introduce any odor-generating land uses and is not located in the vicinity of any such existing or planned land uses. The General Plan 2035 Alternative would likely result in similar commercial uses as the proposed Project.

Similar to the proposed Project, the restaurant use under the General Plan 2035 Alternative would be required to comply with all State and local regulations associated with cooking equipment and controls, such as grease filtration and removal systems, exhaust hood systems, and blowers to move air into the hood systems, through air cleaning equipment, and then outdoors. Such equipment would ensure that pollutants associated with smoke and exhaust from cooking surfaces would be captured and filtered, allowing only filtered air to be released into the atmosphere.

Similar to the proposed Project, the General Plan 2035 Alternative would provide waste receptacles throughout the facilities and would utilize outdoor trash dumpsters with lids, which would be picked up regularly during normal solid waste collection operating hours within the area.

The dumpster lids are intended to contain odors emanating from the dumpsters. The dumpsters would be stored in screened areas for further protection from potential objectionable odors. The garbage collected on-site and stored in the outdoor dumpsters would not be on-site long enough to cause substantial odors. Thus, the outdoor, enclosed, and covered trash dumpsters that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

In conclusion, impacts would be **less than significant** regarding this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 197.05 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 197.05 acres and would eliminate the existing industrial uses and proposed commercial uses.

Similar to the proposed Project, the Reduced Project Alternative would not introduce any odor-generating land uses and is not located in the vicinity of any such existing or planned land uses. Residential areas are not typically associated with the creation of objectionable odors. Any trash generated by the Reduced Project Alternative would be limited to the residential areas. The garbage resulting from the residential uses would be collected and stored at each residence would not be on-site long enough to cause substantial odors. Thus, the trash receptacles that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

In conclusion, impacts would be **less than significant** regarding this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Similar to the proposed Project, the Reduced Intensity/Density Alternative would not introduce any odor-generating land uses and is not located in the vicinity of any such existing or planned land uses. Residential areas are not typically associated with the creation of objectionable odors. Any trash generated by the Reduced Intensity/Density Alternative would be limited to the residential areas. The garbage resulting from the residential uses would be collected and stored at each residence would not be on-site long enough to cause substantial odors. Thus, the trash receptacles

that would be picked up regularly would provide proper containment and handling of the trash generated on-site.

In conclusion, impacts would be **less than significant** regarding this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

3.4.1 INTRODUCTION

This section describes the geomorphic provinces/bioregions, vegetation, wildlife, soils, hydrogeomorphic features, wetlands, special status species, regulatory setting, and impacts that are expected on biological resources. The analysis contained in this section is intended to be at a Project-level, and covers impacts associated with the conversion of the entire site to an urban use. The following analysis is based in part on *Baseline Biological Resources Assessment at the Bear Creek East Project Site, Stockton, California* (Moore Biological Consultants 2010) (see Appendix F), and in part on field surveys and records searches performed by De Novo Planning Group in 2016. Comments received during the NOP comment period regarding biological resources include: U.S. Army Corps of Engineers (USACE). The comment noted that the Project site is within the jurisdiction of the USACE under the authority of Section 404 of the Clean Water Act. Impact 3.4-6 includes a discussion pertaining to Section 404 of the Clean Water Act.

Methods

PREVIOUS INVESTIGATIONS

Moore Biological Consultants prepared a Biological Resources Assessment for the project site in 2010. That study was based on CNDDDB records searches (2004, 2006, and 2010) and field surveys March 25, 2005, May 17 and August 11, 2006, and May 2010.

RECENT INVESTIGATIONS

Following the previous investigations by Moore Biological Consultants between 2004 and 2010, the project went on hold. In 2015, the investigations were reinitiated by De Novo Planning Group.

Pre-Field Investigation

Prior to the field investigation, numerous maps, databases, and reports were reviewed including:

- U.S. Geological Survey (USGS) 7.5-minute Quadrangle
- USGS National Hydrography Data Set
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps
- National Resource Conservation Service (NRCS) Soil Survey
- California Wildlife Habitat Relationships (CWHR) maps
- California Natural Diversity Database (CNDDDB)
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants
- U.S. Fish and Wildlife Service's (USFWS) IPac
- U.S. Fish and Wildlife Service's (USFWS) Official List
- *Baseline Biological Resources Assessment at the Bear Creek East Project Site, Stockton, California* (Moore Biological Consultants 2010)

Field Investigations

Field investigations were performed in the study area on Field investigations were performed in the study area on April and July 2015, and March and May 2016 by Principal Biological Steve

McMurtry. The surveys served several purposes. First, they served as reconnaissance of the site to establish the existing conditions of the site and to verify information gathered in the pre-field investigation and from previous investigations. This included identification of the habitat types, hydrologic features, topography, soil characteristics, vegetation. The field investigations followed the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). Field investigations were performed during the floristic period for species in the region. Field investigations were performed on foot using transects. Habitat was recorded, and the project site was inspected for the presence, or potential for presence of wildlife. The area was inspected for its upland and aquatic habitat functions. The field investigations coincided with the optimal period for observing nesting birds, breeding amphibians, and active reptiles. The site was also examined for evidence of scat and tracks of mammals.

Field Tools/Equipment

Tools used during the field investigations included a Trimble GeoExplorer XH Handheld (sub-foot unit), 30-meter tape measure, diameter tape, spade, Munsell color chart, Vortex 20-60x80 spotting scope, and Bushnell 10x42 binoculars.

3.4.2 ENVIRONMENTAL SETTING

GEOMORPHIC PROVINCES/BIOREGION

The City of Stockton is located in the western portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River is located just south and west of the City. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The City of Stockton is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous of the ten bioregions in the State, with an estimated 2 million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion.

The bioregion is bordered on the west by the coastal mountain ranges. Its eastern boundary joins the southern two-thirds of the Sierra bioregion, which features Yosemite, Kings Canyon, and Sequoia National Parks. At its northern end, the San Joaquin Valley bioregion borders the southern end of the Sacramento Valley bioregion. To the west, south, and east, the bioregion extends to the edges of the valley floor.

Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are protected in this bioregion in publicly owned parks,

reserves, and wildlife areas. The bioregion is considered the State's top agricultural producing region with the abundance of fertile soil.

LOCAL SETTING

Location

The Project site is located in the northeastern portion of the City of Stockton, immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials; on the east by the Union Pacific Railroad (UPRR); and on the south by Bear Creek and the associated Bear Creek Levee. The Project site is located within a portion of Section 2 of Township 2 North, Range 6 East MDBM, on the Lodi South, California, 7.5-minute series quadrangle map.

Vegetation

The Project site primarily consists of vacant fields that have been leveled for agricultural use. Non-cultivated portions of the Project site are vegetated with various non-native annual grassland species such as oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), foxtail barley (*Hordeum murinum*), Bermuda grass (*Cynodon dactylon*), perennial ryegrass (*Lolium perenne*), fiddleneck (*Amsinckia menziesii*), black mustard (*Brassica nigra*), bull thistle (*Cirsium vulgare*), prickly lettuce (*Lactuca serriola*), pigweed (*Amaranthus albus*), dove weed (*Eremocarpus setigerus*), common mallow (*Malva neglecta*) and filaree (*Erodium botrys*). (Moore Biological Consultants 2010).

There are few trees located on the Project site. One is a large valley oak tree (*Quercus lobata*) located in the south-central portion of the Project site near the toe of the landward side of the north Bear Creek levee; an additional large oak is located in the vicinity of the former residence in the southwest corner of the Project site. Both oak trees are Heritage Trees, as defined below. A third Heritage Oak is located within the proposed community park, east of the proposed alignment of Ham Lane. An arborist study of the three trees (Gianelli, 2006) was prepared in January 2006 and updated in February 2007. The study identified the three trees that met Heritage Oak criteria, and considered them to have moderate to high retention value. The arborist identified one additional oak tree within the Project site; this non-Heritage tree is located within the Bear Creek right-of-way and would not be subject to development disturbance.

In addition to the oak trees, there are also several ornamental trees located in the southwest portion of the Project site, near the former farmhouse. These trees consist of cedar (*Cedrus deodara*), pine (*Pinus* sp.), buckeye (*Aesculus californicus*), and tree-of-heaven (*Ailanthus altissima*). No blue elderberry (*Sambucus* sp.) shrubs, a required habitat type for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), were observed within or adjacent to the Project site.

Within the City of Stockton, native oak trees, including Valley oak, coast live oak (*Quercus agrifolia*) and interior live oak (*Quercus wislizenii*), are subject to City protection. Native oak trees with a trunk diameter of 16 inches or greater as measured at twenty-four (24) inches above actual grade are considered Heritage Oak trees and are subject to special protection under the City's Heritage

Tree Permit Ordinance, Chapter 16.1430. The requirements of this ordinance are reviewed and applied in the subsequent analysis of Project impacts on oak trees, below.

Wildlife

A limited number of wildlife species were observed during field surveys of the Project site. Some of the more common birds observed include red-tailed hawk (*Buteo jamaicensis*), yellow-billed magpie (*Pica nuttalli*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), Western scrub jay (*Aphelocoma coerulescens*) and red-winged blackbird (*Agelaius phoeniceus*). All of these are species commonly found in residential and rural areas in the region.

There are few potential nest trees within the Project site that are suitable for nesting raptors and other protected migratory birds, including Swainson's hawk (*Buteo swainsoni*). Given the size of the Project site, the presence of nesting habitat (large trees), as well as the presence of foraging habitat (large open fields), it is likely one or more pairs of raptors, plus a variety of songbirds, nest on the site each year.

A limited variety of mammal species, all of which are common to agricultural and semi-rural areas in the Stockton vicinity, occur on the Project site. Mammals observed during wildlife surveys of the Project site include: desert cottontail (*Sylvilagus audubonii*), muskrat (*Ondatra zibethicus*), and ground squirrel (*Spermophilus beecheyi*). However, striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), coyote (*Canis latrans*), and raccoon (*Procyon lotor*) are also expected to occur on the Project site. A number of species of small rodents including mice (*Mus musculus*, *Reithrodontomys megalotis*, and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur.

Based on habitat types present, a limited number of amphibians and reptiles may use habitats on the Project site. The Pacific chorus frog (*Pseudacris regilla*) was the only amphibian observed, and the Western fence lizard (*Sceloporus occidentalis*) was the only reptile observed. Although none were observed, the site and surrounding lands provide suitable habitat for species including coast horned lizard (*Phrynosoma coronatum*), western toad (*Bufo boreas*), common king snake (*Lampropeltis getulus*), gopher snake (*Pituophis melanoleucus*), and common garter snake (*Thamnophis sirtalis*).

Wildlife Habitats

Agricultural and natural plant communities provide habitat for a variety of biological resources in the region. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under a Habitat Conservation Plan, Natural Community Conservation Plan, CEQA, the Fish and Game Code, or the Clean Water Act. Additionally, sensitive habitats are usually protected under specific policies from local agencies. Below is a brief description of the wildlife habitats found on the Project site. Figure 3.4-1 illustrates the land cover types in the vicinity of the Project site.

Irrigated Row Crops and Field Crops (Agricultural): Under the California Wildlife Habitat Relationship System (CWHRS), the Project site is mapped as Irrigated Row Crops and Field Crops

land. The Project site has historically been actively used for agricultural use. The Project site is generally flat and well drained, and as a result it is well suited for many crops. Alfalfa fields, hay, row crops, orchards, annual grasslands, cattle pasture, and dairies dominate the agricultural areas in the region. Agricultural fields commonly have irrigation canals, ditches, and stock ponds that serve as a water source or drainage for the fields and habitat for a variety of plants and animals. Such irrigation canals/ditches and catchment systems are located on the western and northern boundary of the Project site and are used in association with existing agricultural production. The western half of the Project site is under row crop production, and the eastern half is a vineyard.

Riverine Communities: A riverine community is an area that is inundated or saturated by surface or ground water. These areas often include swamps, marshes, bogs, lakes, rivers, wetlands, and similar areas. “Hydrology” is one of three key indicators used by the regulatory agencies in their determination of presence of “wetlands” and “other waters.” Hydrology refers to the presence of water at or above the soil surface for a sufficient period of the year. Hydrology, or the presence of water, is a catalyst for the formation of wetlands and riparian habitat along the perimeter of these areas. The Bear Creek is an anthropogenically modified riverine system located along the southern boundary of the Project site. The Bear Creek contains levees on the north and south side of the channel, and it is used as a flood control facility as it crosses through the incorporated City of Stockton.

Soils

The USDA/NRCS Web Soil Survey indicates the presence of two soil series occurring within the Project site. Table 3.4-1 identifies the soils found on the Project site. The NRCS Soils Map is provided in Figure 3.2-2 in Section 3.2, Agricultural Resources.

TABLE 3.4-1: USDA SOIL SERIES INFORMATION

UNIT SYMBOL	NAME	ACRES IN AOI	PERCENT OF AOI
180	Jacktone clay	231.08	72.48%
250	Stockton clay	77.70	24.37%

SOURCE: NRCS WEB SOIL SURVEY 2016.

Jacktone clay: This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are moderately deep to a hardpan. Slopes range from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow rapid.

Stockton clay: This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are deep to a hardpan. Stockton clay is formed in alluvium derived from mixed rock sources. Slope ranges from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow rapid.

Hydrogeomorphic Features

San Joaquin County is located in the San Joaquin River Hydrologic Region. The San Joaquin River is the principal river of the region, and all other streams of the region are tributary to it. The Project

site is located in the San Joaquin River watershed, within the Lower Cosumnes hydrologic area, Bear Creek and Lower Bear Creek hydrologic sub-areas.

Bear Creek is a modified natural channel that conducts base flow and storm runoff from its upstream drainage area, which includes foothill and lowland agricultural areas north and east of the Project site. Bear Creek is also used to distribute irrigation water. Bear Creek is a perennial stream and serves as a terminal storm drainage facility. Outside the Stockton urban area, Bear Creek drains more than 92 square miles in eastern San Joaquin and western Calaveras counties.¹ The San Joaquin County Water Conservation and Flood Control District maintains Bear Creek and its associated levee system.

Waters of the U.S. and Wetlands

Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. Both the California Department of Fish and Wildlife (CDFW) and the U.S. Army Corps of Engineers (USACE) have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

The Project site includes potential jurisdictional Waters of the U.S. (i.e., features subject to USACE permitting authority) - some of which may also be considered wetlands. These areas consist of the Bear Creek channel and on-site ditches constructed to distribute agricultural irrigation water and/or agricultural drainage. Determining whether or not a feature is “jurisdictional” is complex and may be based on a number of different criteria. The jurisdictional status of non-natural wetlands such as irrigation ditches can be especially difficult to determine; the authority for determination of jurisdiction is currently shared by the USACE and the U.S. Environmental Protection Agency (EPA). A wetland delineation (Moore Biological, 2006) identified 7.47 acres of potential Waters of the U.S.:

Bear Creek channel area (on-site portion)	5.87 ac.
AT&T and trucking facility detention basins	0.43 ac.
Irrigation laterals	0.68 ac.
Roadside ditch	0.49 ac.

Bear Creek, a perennial drainage that flows in an east to west direction across the southern portion of the Project site, is a jurisdictional water of the U.S., as it is tributary to the Sacramento-San Joaquin Delta. Bear Creek has a low flow channel and a flood terrace, and these features are bounded by levees on either side. The Bear Creek channel generally becomes wider as it reaches the western edge of the Project site. Vegetation along the fringes of Bear Creek consists of emergent wetland species, including tule (*Scirpus acutus*), water primrose (*Ludwigia peploides*),

¹ U.S. Geological Survey. Feature Detail Report for: Bear Creek. Available: https://geonames.usgs.gov/apex/f?p=gnispq:3:0::NO::P3_FID:218821 and ESRI GIS data.

cattail (*Typha* sp.), Mediterranean barley (*Hordeum murinum*), umbrella sedge (*Cyperus eragrostis*) and California wild rose (*Rosa californica*). A levee along Bear Creek provides clear separation between jurisdictional waters and adjacent farmlands.

Several agricultural and drainage ditches are located on the Project site, as well as two drainage detention basins. The Project site is supplied with irrigation water from the Woodbridge Irrigation District's gravity canal system, a portion of which terminates at the northeast corner of the Project site. Irrigation water is also supplied to the Project site from an existing canal located along the west side of West Lane. The ditches have the potential to fall under USACE jurisdiction if there is connectivity with Waters of the U.S., such as in situations where water that flows out of jurisdictional Waters of the U.S. via gravity is then conveyed in the ditches. The portion of the Project site north of the levee is not hydrologically connected to Bear Creek; the Bear Creek levee and floodwall separates the Waters of the U.S. from created irrigation ditches serving the agricultural land within the Project site.

Two irrigation laterals extend south from Eight Mile Road along the alignment of Ham Lane. These parallel features are defined by a variably discernible ordinary high water mark. They are one to two feet in depth and lack any vegetation. These features are fed only by local rainfall from the agricultural fields and do not receive flows from off-site waters of the U.S. The laterals empty to Bear Creek through operable culvert structures; as a result, these features are believed to be outside USACE jurisdiction. A final jurisdictional determination would be made by the USACE.

A roadside ditch is located adjacent to West Lane. The ditch varies in depth, width and amount of vegetation and receives water from a culvert beneath a field within the Project site. The ditch discharges under West Lane and to Bear Creek through a culvert. As this ditch appears to be entirely created to drain road edges, it is believed to be outside USACE jurisdiction. The jurisdictional status of the two detention basins, two irrigation laterals and the roadside ditch will be confirmed by the USACE verification of a wetland delineation.

There are two detention basins located within the Industrial land that serves the AT&T site (PacBell) and Crane site (Bragg Investment). The basins appear to be supported by runoff from the adjoining industrial use, have no outlet and were excavated in uplands. As a result, it is believed that these features are non-jurisdictional. It should be noted that there is not anticipated impacts to the two detention basins located within the Industrial land.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service's (USFWS) endangered and threatened species lists. The background search was regional in scope and focused on the documented occurrences within 10 miles of the Project site. Table 3.4-2 provides a list of sixteen special-status plants and Table 3.4-3 provides a list of twenty special-status animals. Figures 3.4-2 and 3.4-3 present the documented occurrences within a one-mile and ten-mile radius of the Project site.

TABLE 3.4-2: SPECIAL-STATUS PLANT SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	STATUS (FED./CA/ CNPS/SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT	BLOOMING PERIOD	POTENTIAL TO OCCUR IN PROJECT AREA
Suisun Marsh aster <i>Aster lentus</i>	--/--/1B.2./Yes	Sacramento-San Joaquin Delta, Suisun Marsh, Suisun Bay: Contra Costa, Napa, Sacramento, San Joaquin, and Solano Counties	Brackish and freshwater marshes and swamps; below 3 m	May- November	Not Present
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	--/--/1B.2./Yes	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay area	Playas on adobe clay, valley and foothill grassland, vernal pools in alkaline soils; below 60 m	March-June	Not Present
Heartscale <i>Atriplex cordulata</i>	--/--/1B.2./Yes	Western Central Valley and valleys of adjacent foothills	Saline or alkaline areas in chenopod scrub, meadows and seeps, sandy soils in valley and foothill grassland; below 375 m	April- October	Not Present
San Joaquin spearscale <i>Atriplex joaquiniana</i>	--/--/1B.2./No	West edge of Central Valley from Glenn County to Tulare County	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 835 m	April- October	Not Present
Big tarplant <i>Blepharizonia plumosa</i>	--/--/1B.1./No	San Francisco Bay area with occurrences in Alameda, Contra Costa, San Joaquin, Stanislaus, and Solano Counties	Valley and foothill grassland; 30-505 m	July- Oct	Not Present
Watershield <i>Brasenia schreberi</i>	--/--/2B.3./No	Scattered locations in Sierra Nevada, northern Coast Ranges, and some foothills	Marshes and swamps /freshwater. 30-2200m.	June- September	Not present.
Bristly sedge <i>Carex comosa</i>	--/--/2.1./Yes	Scattered occurrences throughout California; Oregon and Washington	Coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; below 625 m	May- September	Not Present
Palmate-bracted bird's beak <i>Cordylanthus palmatus</i>	E/E/1B.1./No	Livermore Valley and scattered locations in the Central Valley from Colusa County to Fresno County	Alkaline sites in chenopod scrub and valley and foothill grassland; 5-155 m	May- October	Not Present
Round-leaved filaree <i>Erodium macrophyllum</i>	--/--/2.1./No	Scattered occurrences in the Great Valley, southern north Coast Ranges, San Francisco Bay area, south Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges	Cismontane woodland, valley and foothill grassland on clay soils; 15-1,200 m	March-May	Not Present
Delta button-celery <i>Eryngium racemosum</i>	--/E/1B.1./Yes	San Joaquin River delta floodplains and adjacent Sierra Nevada foothills: Calaveras, Merced, San Joaquin, and Stanislaus Counties	Riparian scrub, seasonally inundated depressions along floodplains on clay soils; below 75 m	June- August	Not Present
Woolly rose-mallow <i>Hibiscus lasiocarpus</i>	--/--/1B.2./Yes	Scattered locations in central California in the central and southern Sacramento Valley, deltaic Central Valley from Butte to San Joaquin Counties	Freshwater marshes along rivers and sloughs; below 120 m	June- September	Not present.
Delta tulle pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	--/--/1B.2./Yes	San Francisco Bay region, also part of the Central Valley in Alameda, Contra Costa, Napa, Santa Clara, San Joaquin, Solano, and Sonoma Counties	Freshwater or brackish marsh; 5-330 m	May- September	Not Present

BIOLOGICAL RESOURCES

3.4

SPECIES	STATUS (FED./CA/ CNPS/SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT	BLOOMING PERIOD	POTENTIAL TO OCCUR IN PROJECT AREA
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	--/R/1B.1/Yes	Southern Sacramento Valley, Sacramento-San Joaquin River delta, northeast San Francisco Bay area: Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, and Solano Counties	Freshwater or brackish marsh in tidal zone	April- November	Not Present
Sanford's arrowhead <i>Sagittaria sanfordii</i>	--/--/1B.2/Yes	Scattered locations in Central Valley and Coast Ranges	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 610 m	May- October	Not Present
Side-flowering skullcap <i>Scutellaria lateriflora</i>	--/--/2.2/Yes	Northern San Joaquin Valley, east of the Sierra Nevada, Inyo and San Joaquin Counties; New Mexico, Oregon, and elsewhere	Mesic meadows, marshes and swamps; below 500 m	July- September	Not Present
saline clover <i>Trifolium hydrophilum</i>	--/--/1B.2/No	Scattered locations in Central Valley and Coast Ranges	Marshes and swamps, valley and foothills grassland (mesic, alkaline), vernal pools. Below 300m.	April-June	Not Present

NOTES: CNPS = CALIFORNIA NATIVE PLANT SOCIETY

SJMSCP = SAN JOAQUIN MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL CALIFORNIA ENDANGERED SPECIES ACT.

R = RARE UNDER THE CALIFORNIA ENDANGERED SPECIES ACT

CALIFORNIA NATIVE PLANT SOCIETY

1B = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA AND ELSEWHERE.

2 = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE.

3 = A REVIEW LIST – PLANTS ABOUT WHICH MORE INFORMATION IS NEEDED.

4 = PLANTS OF LIMITED DISTRIBUTION – A WATCH LIST

.1 = SERIOUSLY ENDANGERED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED-HIGH DEGREE AND IMMEDIACY OF THREAT).

.2 = FAIRLY ENDANGERED IN CALIFORNIA (20-80% OCCURRENCES THREATENED).

.3 = NOT VERY ENDANGERED IN CALIFORNIA (<20% OF OCCURRENCES THREATENED).

3.4 BIOLOGICAL RESOURCES

TABLE 3.4-3: SPECIAL-STATUS WILDLIFE AND FISH SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	STATUS (FED/CA/ SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN PROJECT AREA
INVERTEBRATES				
an andrenid bee <i>Andrena subopasta</i>	--/--/No	Resident of California	Collects pollen primarily from <i>Arenaria</i> California, but also <i>Orthocarpus erianthus</i> and <i>Lasthenia</i> .	Appropriate habitat is not present.
Midvalley fairy shrimp <i>Branchinecta mesovallensis</i>	PE/--/Yes	Have been found in Sacramento, Solano, Yolo, Contra Costa, San Joaquin, Madera, Merced and Fresno counties. The increase of known locations lends additional support to the idea that the range and distribution of midvalley fairy shrimp is greater than the distribution of known occurrences.	Shallow ephemeral pools, vernal swales, and various artificial ephemeral wetland habitats.	Appropriate habitat is not present.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/--/Yes	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	Appropriate habitat is not present.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/--/Yes	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools.	Appropriate habitat is not present.
AMPHIBIANS				
California tiger salamander <i>Ambystoma californiense tigrinum</i> c.)	T/SSC/Yes	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	Appropriate habitat is not present.
Foothill yellow-legged frog <i>Rana boylei</i>	--/C/Yes	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	Appropriate habitat is not present within the developed area. Potential habitat is present in Bear Creek. The upland areas on the Project site are not expected to serve as habitat given that they are regularly disturbed in association with the agricultural operations.

SPECIES	STATUS (FED/CA/ SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN PROJECT AREA
REPTILES				
Giant garter snake <i>Thamnophis couchi</i> <i>gigas</i>	T/T/Yes	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	Aquatic habitat is present in Bear Creek and in the irrigation ditches within the Project site. The upland areas on the Project site are not expected to serve as habitat given that they are regularly disturbed in association with the agricultural operations.
Western pond turtle <i>Clemmys</i> <i>marmorata</i>	--/SSC/Yes	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Appropriate habitat is not present within the developed area, including the irrigation ditches. Potential habitat is present in Bear Creek. The upland areas on the Project site are not expected to serve as habitat given that they are regularly disturbed in association with the agricultural operations.
BIRDS				
White-tailed kite <i>Elanus leucurus</i>	--/FP/Yes	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Known to occur in the region. Potential nesting and foraging habitat present within Project area.
Swainson's hawk <i>Buteo swainsoni</i>	--/T/Yes	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields	Known to occur in the region. Potential nesting and foraging habitat present within Project area. Observed foraging over the Project site.
California black rail <i>Laterallus</i> <i>jamaicensis</i> <i>coturniculus</i>	--/T/Yes	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	Appropriate habitat not present.

3.4 BIOLOGICAL RESOURCES

SPECIES	STATUS (FED/CA/ SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN PROJECT AREA
Western burrowing owl <i>Athene cunicularia hypugea</i>	--/SSC/Yes	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	Known to occur in the region. Potential nesting and foraging habitat present within Project area.
Least Bell's vireo <i>Vireo bellii pusillus</i>	E/E/No	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite.	Appropriate habitat is not present.
song sparrow ("Modesto" population) <i>Melospiza melodi</i>	--/SSC/No	Occurs primarily below 200 ft (61 m) elevation in the Central Valley from Colusa County in the Sacramento Valley south through the Sacramento-San Joaquin River Delta (exclusive of Suisun Marsh) to the northern San Joaquin Valley of Stanislaus County.	Emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Also nest in riparian forests of Valley Oak with a sufficient understory of blackberry along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites	Appropriate habitat is not present.
Tricolored blackbird <i>Agelaius tricolor</i>	--/SSC/Yes	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	Appropriate habitat is not present.
FISH				
Delta smelt <i>Hypomesus transpacificus</i>	T/T/Yes	Primarily in the Sacramento-San Joaquin Estuary but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand.	Appropriate habitat is not present.
Central steelhead <i>Oncorhynchus mykiss</i>	T/--/No	Sacramento River and tributary Central Valley rivers.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8°C to 18°C. Habitat types are riffles, runs, and pools.	Appropriate habitat is not present.
Longfin smelt <i>Spirinchus thaleichthys</i>	--/SSC/Yes	Occurs in estuaries along the California coast. Adults concentrated in Suisun, San Pablo, and North San Francisco Bays.	Prior to spawning, these fish aggregate in deepwater habitats available in the northern Delta, including, primarily, the channel habitats of Suisun Bay and the Sacramento River. Spawning occurs in fresh water on the San Joaquin River below Medford Island and on the Sacramento River below Rio Vista.	Appropriate habitat is not present.

SPECIES	STATUS (FED/CA/ SJMCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN PROJECT AREA
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	--/SSC/Yes	Sacramento splittail are found only in California's Central Valley. Currently largely confined to: (1) the Delta, (2) Suisun Bay, (3) Suisun Marsh, (4) Napa River, (5) Petaluma River, and (6) other parts of the Sacramento-San Joaquin Estuary.	Adults require flooded vegetation for spawning and rearing, and are often found in areas subject to flooding. Spawning occurs on submerged vegetation in temporarily flooded upland and riparian habitat. Spawning occurs in the lower reaches of rivers, bypasses used for flood management, dead-end sloughs and in larger sloughs such as Montezuma Slough.	Appropriate habitat is not present.

STATUS EXPLANATIONS:

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PE = PROPOSED FOR ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PT = PROPOSED FOR THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE FEDERAL ENDANGERED SPECIES ACT.

D = DELISTED FROM FEDERAL LISTING STATUS.

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE.

SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA

3.4.3 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the State and nation including the CDFW, USFWS, USACE, and the Central Valley Regional Water Quality Control Board. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the Federal, State and local regulations that are applicable to the proposed Project.

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act (FESA), passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from “take” unless a take permit is issued by the USFWS. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, possess, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Federal Bald and Golden Eagle Protection Act

The Federal Bald and Golden Eagle Protection Act provide regulations to protect bald and golden eagles as well as their nests and eggs from willful damage or injury.

Clean Water Act – Section 404

Section 404 of the CWA regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACE as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” [33 C.F.R. §328.3(e)].

The USACE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a Federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Central Valley Regional Water Quality Control Board (CVRWQCB). To obtain the water quality certification, the CVRWQCB must indicate that the proposed fill would be consistent with the standards set forth by the State.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. The Act requires authorization from the USACE for any excavation or deposition of materials into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

STATE

Fish and Game Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the State. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code §1601-1603 – Streambed Alteration

Under the California Fish and Game Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "Streambed Alteration Agreement" from CDFW prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the Federal or State endangered species list may be considered rare or endangered if the species meets certain criteria. (CEQA Guidelines § 15380) Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low populations, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and Federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional, multi-species planning before the special measures of the CESA become necessary.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate State water quality and protect beneficial uses. The act also authorizes the NPDES program under the CWA, which establishes water quality requirements for discharges to waters of the State.

Water Quality Control Plan for the Sacramento-San Joaquin River Basins

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the Central Valley RWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta.

State and Federal laws mandate the protection of designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Additional protected beneficial uses of the SJR include groundwater recharge and fresh water replenishment.

LOCAL

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

A Habitat Conservation Plan (HCP) is a Federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (FESA). An approved HCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under FESA during development activities.

A Natural Community Conservation Plan (NCCP) is a State planning document administered by CDFW. An approved NCCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under CESA during growth and development activities.

The Project site is located within the boundary of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), which serves as a USFWS approved HCP, and a CDFW approved NCCP. The SJMSCP is administered by SJCOG and the City of Stockton is a participating agency.

Background: The key purpose of the SJMSCP, is to provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple-use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to Project Proponents and society at large.

San Joaquin County's past and future (2001-2051) growth has affected and will continue to affect 97 special status plant, fish and wildlife species in 52 vegetative communities scattered throughout San Joaquin County's 1,400+ square miles and 900,000+ acres, which include 43% of the Sacramento-San Joaquin Delta's Primary Zone. The SJMSCP, in accordance with ESA 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 which affect the plant, fish and wildlife species covered by the Plan, hereinafter referred to as "SJMSCP Covered Species". In addition, the SJMSCP provides some compensation to offset the impacts of Open Space land Conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial Open Space uses.

The SJMSCP compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-Federal flood control projects, new parks and trails, maintenance of existing facilities for non-Federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects.

These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lodi, Manteca, Ripon, Stockton and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which will be covered by the SJMSCP. In addition, 5,340 acres is allocated for anticipated projects (e.g., annexations, general plan amendments)

The 97 SJMSCP Covered Species include 25 State and/or Federally listed species. The SJMSCP Covered Species include 27 plants (6 listed), 4 fish (2 listed), 4 amphibians (1 listed), 4 reptiles (1 listed), 33 birds (7 listed), 15 mammals (3 listed) and 10 invertebrates (5 listed).

Implementation: The SJMSCP is administered by a Joint Powers Authority consisting of members of the SJCOG, the California Department of Fish and Wildlife (CDFW), and the US Fish and Wildlife Service. Development project applicants are given the option of participating in the SJMSCP as a way to streamline compliance with required local, State and Federal laws regarding biological resources, and typically avoid having to approach each agency independently. According to the SJMSCP, adoption and implementation by local planning jurisdictions provides full compensation and mitigation for impacts to plants, fish and wildlife. Adoption and implementation of the SJMSCP also secures compliance pursuant to the State and Federal laws such as CEQA, the National Environmental Policy Act (NEPA), the Planning and Zoning Law, the State Subdivision Map Act, the Porter-Cologne Act and the Cortese-Knox Act in regard to species covered under the SJMSCP.

Applicants pay mitigation fees on a per-acre basis, as established by the Joint Powers Authority according to the measures needed to mitigate impacts to the various habitat and biological resources. Different types of land require different levels of mitigation; i.e., one category requires that one acre of a similar land type be preserved for each acre developed, while another type requires that two acres be preserved for each acre developed. The entire County is mapped according to these categories so that land owners, project proponents and project reviewers are easily aware of the applicable SJMSCP fees for the proposed development.

The appropriate fees are collected by the City and remitted to SJCOG for administration. SJCOG uses the funds to preserve open space land of comparable types throughout the County, often coordinating with other private or public land trusts to purchase conservation easements or buy land outright for preservation. Development occurring on land that has been classified under the SJMSCP as “no-pay” would not be required to pay a fee. This category usually refers to already urbanized land and infill development areas. Although the fees are automatically adjusted on an annual basis, based on the construction cost index, they often cannot keep pace with the rapidly rising land prices in the Central Valley. Therefore, SJCOG is currently in the process of updating the mitigation fee schedule to more accurately match the market value of the various land types.

City of Stockton General Plan

The City of Stockton General Plan designates the Project site as Low Density Residential (LDR maximum 8.7 du/ac), High Density Residential (HDR maximum 23.2 du/acre), Commercial (C Maximum FAR: 0.3, maximum 29 du/acre), and Industrial (I maximum FAR 0.6). The General Plan

3.4 BIOLOGICAL RESOURCES

Natural & Cultural Resources Element provides a goal and policy framework for the preservation and conservation of natural and biological resources. The following goal and policies of the Stockton General Plan related to biological resources are applicable to the proposed Project.

Natural & Cultural Resources Element

GENERAL NATURAL AND CULTURAL RESOURCE POLICIES

- NCR-1.1 Protect Natural Resources. The City shall strive to protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources (including Oak trees) from encroachment or destruction by incompatible development.
- NCR-1.3 Preserve Open Space. The City shall promote contiguous and compact development to preserve open space land.
- NCR-1.4 Environmental Review Process. The City shall use its environmental and design review process to ensure effective protection of natural and cultural resources and compliance with Federal, State, and City policies and regulations.

BIOLOGICAL RESOURCES POLICIES

- NCR-2.1 Protect Sensitive Habitats. The City shall support preservation, restoration, and enhancement of the designated habitats of State or Federally listed rare, threatened, endangered and/or other sensitive and special status species.
- NCR-2.2 Management of Wetlands. The City shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats. Where possible and appropriate, such communities shall be restored or expanded.
- NCR-2.3 Management of Sensitive Habitats. The City shall favor sensitive habitat protection and enhancement of contiguous areas over small-segmented remainder parcels.
- NCR-2.4 Impacts to Sensitive Habitats. The City shall consider the loss of sensitive habitats due to development to be a significant environmental impact. All development that is proposed to disturb or remove sensitive habitat shall demonstrate mitigation for this loss.
- NCR-2.5 SJCOG Multi Species Habitat Conservation and Open Space Plan. The City shall continue to coordinate with the San Joaquin Council of Governments and comply with the terms of the Multi Species Habitat Conservation and Open Space Plan to protect critical habitat areas that support endangered species and other special-status species.
- NCR-2.6 New Development in Sensitive Areas. The City shall require careful planning of new development in areas that are known to have particular value for biological resources to maintain sensitive vegetation and wildlife habitat.
- NCR-2.7 Development Review. The City shall review development proposals against the California NDDB to assist in identifying potential conflicts with sensitive habitats or special status species.
- NCR-2.8 Development Review. The City shall review development proposals in accordance with applicable Federal, State, and local statutes protecting special-status species and jurisdictional wetlands.

- NCR-2.9 Appropriate Mitigation Measures. The City shall impose appropriate mitigation measures using protocols defined by the applicable statute (e.g., USFWS, CDFG, etc.).
- NCR-2.10 Wetland Resources. The City shall require that a wetland delineation be prepared using the protocol defined by the U.S. Army Corps of Engineers. On development sites with the potential to contain wetland resources, a report on the findings of this survey shall be submitted to the City as part of the application process.
- NCR-2.11 Maintain Biological Resource Database. The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally sensitive habitats and lists of special-status species. [New Policy].
- NCR-2.12 Requirements for Biological Studies. On sites that have the potential to contain critical or sensitive habitats or special-species or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist. A report on the findings of this survey shall be submitted to the City as part of the application process.
- NCR-2.13 Encourage Planting of Native Vegetation. The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure the a maximum number and variety of well-adapted plants are maintained.
- NCR-2.14 Protect Delta Habitats. The City shall approve only those activities in the Delta and related waterways that are consistent with the sensitive environmental characteristics of these areas.
- NCR-2.15 Levee Vegetation. The City shall require disturbance of levee vegetation be minimized and vegetation replacement be consistent with flood control and reclamation district constraints.
- NCR-2.16 Fisheries and Riparian Habitat. The City shall protect the fisheries and riparian habitat of the Delta and waterways from damage caused by the operation of marinas or the Port of Stockton.
- NCR-2.17 Development within the Primary Zone of the Delta. The City shall ensure that future changes to the City's General Plan and Development Code for lands in the city located within the Primary Zone of the Delta, as defined by the Delta Protection Act of 1992, be consistent with the goals of, and comply with, the Land Use and Resources Management Plan for the Primary Zone of the Delta adopted pursuant to Section 29763.5 of the Delta Protection Act of 1992.

NATURAL & CULTURAL RESOURCES IMPLEMENTATION MEASURES

- Implementation Measure #1. The City shall adopt specific criteria for the protection of natural and cultural resources as part of the City's environmental review process.
- Implementation Measure #2. The City shall investigate the establishment of a land trust for open space lands and consider opportunities for acquiring natural habitat and agricultural areas for permanent open space and natural parks.
- Implementation Measure #3. The City shall establish a mitigation fee for wildlife habitat preservation and replacement. Such a fee could fund the identification of key wildlife habitat areas and/or a land trust.

- Implementation Measure #4. The City shall adopt a tree preservation ordinance to protect healthy landmark or historic trees from removal.

Recreation & Waterways Element

WATERWAYS POLICY

- RW-5.2 Improve Riparian Corridors. The City shall endeavor to protect, preserve, and improve riparian corridors and incorporate them in the City's parks and trails system.

City of Stockton Municipal Code

The Stockton Municipal Code, Title 16 Development Code protects Heritage Oak Trees through permit requirements. Section 16.130.020 provides the Director with Review Authority for permits to remove heritage trees. The decision of the Director is subject to an appeal to the Council in compliance with Chapter 16.100 (Appeals). (Ord. 015-09 C.S., eff. 12-3-09). Section 16.130.030 provides the permit requirements, and describes the process for approval or denial of a permit application. Section 16.130.040 establishes fines for violation of this requirement. Section 16.130.050 provides exemptions under emergencies. Section 16.130.060 establishes the replacement requirements.

3.4.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on biological resources if it will:

- 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 U.S. Fish and Wildlife Service;
- 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 Wildlife or U.S. Fish and Wildlife Service;
- 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;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

IMPACTS AND MITIGATION

Impact 3.4-1: The proposed Project has the potential to have a direct or indirect effect on special-status invertebrate species. (Less than Significant)Proposed Project:

There are four special-status invertebrates that are documented within a 10-mile radius of the Project site including: an andrenid bee (*Andrena subapasta*), midvalley fairy shrimp (*Branchinecta mesoavallensis*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and vernal pool fairy shrimp (*Branchinecta lynchi*). The State, Federal, and SJMSCP statuses are shown in Table 3.4-3. Of the four documented species, there are two Federally listed threatened species, and no State listed species. The valley elderberry longhorn beetle, midvalley fairy shrimp, and vernal pool fairy shrimp are covered species under the SJMCP and the proposed project will participate in the SJMSCP.

No special-status invertebrates were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the proposed Project. Therefore, the proposed Project would have a **less than significant** impact on special-status invertebrate species.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on special-status species. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the development would be the same; however, the With Bridge Alternative would increase the

construction activity footprint slightly with the construction of a bridge across Bear Creek. The bridge would extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity because it has the highest potential to have special status species given the aquatic habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project. The exact design would dictate the impacts. For instance, a span bridge installed with a crane would ensure that there are no direct impacts within the Bear Creek channel. With a span bridge the impacts would be limited to the construction of the abutments. Alternative bridge designs could call for piles in the Bear Creek channel, which would have direct impacts on the water feature and biological resources contained in the feature.

No special-status invertebrates were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the With Bridge Alternative. Therefore, the With Bridge Alternative would have a **less than significant** impact on special-status invertebrate species. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek. The bridge would extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, because it is the area with the highest potential to have special status species given the aquatic habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project. The exact design would dictate the impacts. For instance, a span bridge installed with a crane would ensure that there are no direct impacts within the Bear Creek channel. With a span bridge the impacts would be limited to the construction of the abutments. Alternative bridge designs could call for piles in the Bear Creek channel, which would have direct impacts on the water feature and biological resources contained in the feature.

No special-status invertebrates were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the 2035 General Plan Alternative. Therefore, the 2035 General Plan Alternative would have a **less than significant** impact on special-status invertebrate species. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species compared to the proposed Project. Construction of this alternative would reduce the potential direct and indirect impacts that would occur under the proposed Project. However, there were no special status invertebrates or their habitat on the Project site and none are anticipated to be directly or indirectly impacted by the proposed Project.

No special-status invertebrates were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the Reduced Project Alternative. Therefore, the Reduced Project Alternative would have a **less than significant** impact on special-status invertebrate species. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

No special-status invertebrates were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the Reduced Intensity/Density Alternative. Therefore, the Reduced Intensity/Density Alternative would have a **less than significant** impact on special-status invertebrate species. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-2: The proposed Project has the potential to have direct or indirect effects on special-status reptile and amphibian species. (Less than Significant with Mitigation)

Proposed Project:

There are four special-status amphibian/reptile species that are documented within a 10-mile radius of the Project site including: California tiger salamander (*Ambystoma californiense* (*A. tigrinum c.*)), foothill yellow-legged frog (*Rana boylei*), giant garter snake (*Thamnophis couchi gigas*), and western pond turtle (*Clemmys marmorata*). The State, Federal, and SJMSCP statuses are shown in Table 3.4-3. All of the four special-status amphibian/reptile species are covered by the SJMSCP.

The California tiger salamander (*Ambystoma californiense*) is both State and federally listed as a threatened species. Critical habitat has been designated for the California tiger salamander but the project site is not within designated critical habitat. The nearest critical habitat is Unit cv-6, which is about 20 miles east of the project site at the base of the Sierra Nevada foothills along the Calaveras, San Joaquin, and Stanislaus county borders. California tiger salamanders are typically associated with vernal pools or similar habitats consisting of seasonal pools or ponds (including human-made ponds that dry out in summer) surrounded by grasslands. Adult California tiger salamanders spend most of their lives underground in small mammal burrows, which are a required habitat element. California tiger salamanders are relatively poor burrowers and require refuges created by ground squirrels and other burrowing mammals. These salamanders estivate in burrows during the dry months. After the onset of winter rains, adult salamanders move to larger, longer lasting vernal pools and other seasonal pools to breed. Breeding season is November through February, with the timing dependent on rainfall. The larval stage of California tiger salamanders usually lasts 3 to 6 months. Following metamorphosis, juveniles emigrate at night from drying breeding sites traveling up to 1.3 miles to refuge sites.

The project site lacks significant refuge opportunities, which are essential to estivating California tiger salamanders. The portion of the project site that is farmed is actively tilled in association with the farming practices. The tilling process prevents creation of refuge sites. The portion of the project site that includes the Bear Creek levee is maintained (graded) to prevent burrows or other crevices to minimize potential weaknesses in the levee. The farm roads lack burrows. The Project site does not contain essential estivation habitat for California tiger salamander. There are no documented California tiger salamanders along the Bear Creek and none are anticipated to be present.

Bear Creek represents potentially-suitable habitat for foothill yellow-legged frog (*Rana boylei*), which is known to occur in aquatic habitats, such as creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby. Bear Creek provides aquatic habitat for foothill yellow-legged frog. Bear Creek and the banks/levees along Bear Creek serve as potential habitat, but regular disturbance from vegetation removal activities along the banks/levees, such as burning, mowing, and herbicide spraying, makes it very unlikely that foothill yellow-legged frog would be present. There are no known occurrences of this species in Bear Creek. The agricultural portion of the Project site is not appropriate habitat. The nearest previously documented foothill yellow-legged frog occurrence is located approximately ten miles to the north of the Project site, and while this special status species is not anticipated to be affected by the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur.

The irrigation ditches and Bear Creek represent potentially-suitable habitat for giant garter snake (*Thamnophis gigas*), which is a Federal and State listed threatened species. Essential giant garter snake habitat components consist of 1) adequate water during early spring through mid-fall to provide prey base and cover, 2) emergent wetland vegetation for escape cover and foraging habitat, 3) uplands for basking and retreat sites, and 4) higher elevation upland for cover and flood refugia. The USFWS considers areas within 200 feet of aquatic habitat to represent potential upland habitat. Additionally, the USFWS identifies various levels of impact to giant garter snake habitat, from temporary to permanent, and applies mitigation requirements accordingly. The nearest previously documented giant garter snake occurrence is located approximately five miles to the south, and while this special status species is not anticipated to be affected by the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur.

Bear Creek represents potentially-suitable habitat for western pond turtle (*Clemmys marmorata*), which is known to occur in aquatic habitats such as streams, ponds, freshwater marshes, and lakes. These turtles require still or slow-moving water with instream emergent woody debris, rocks, or other similar features for basking sites. Western pond turtle nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils. Bear Creek provides aquatic habitat for western pond turtles. The banks/levees along Bear Creek could provide suitable nesting sites, but regular disturbance from vegetation removal activities, such as burning, mowing, and herbicide spraying, makes it very unlikely that pond turtles would nest in the banks. The agricultural portion of the Project site is unlikely to be utilized by western pond turtle. The nearest previously documented western pond turtle occurrence is located approximately seven miles to the west of the Project site, and while this special status species is not anticipated to be affected by the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur.

Bear Creek and irrigation ditches provides potential aquatic habitat for several species, including those discussed above. Filling the irrigation ditches and the land immediately adjacent to the irrigation ditches would present a potential impact to this habitat; however, no special-status

3.4 BIOLOGICAL RESOURCES

reptiles or amphibians were observed within the Project site or offsite improvement corridors during field surveys and none are expected to be affected by the proposed Project. Bear Creek is planned to be preserved in open space uses; however, there will be an outfall structure installed at the southwestern corner of the Project site in association with the storm drainage system. Special status reptile or amphibian species that could be affected by the proposed Project, including any impacts to Bear Creek in association with the outfall structure, will be mitigated through the participation in the SJMSCP. Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.4-1: *Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed Project.*

RESULTING LEVEL OF SIGNIFICANCE

The SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, with implementation of the mitigation measure outlined above, the potential impacts to special status species would be reduced to a **less than significant** level.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on special-status species. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species, including giant garter snake, yellow legged-frog, and western pond turtle given the aquatic

habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the With Bridge Alternative would have a **less than significant** impact related to loss of habitat for special status reptile or amphibian species. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species, including giant garter snake, yellow legged-frog, and western pond turtle given the aquatic habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the General Plan 2035 Alternative would have a **less than significant** impact related to loss of habitat for special status reptile or amphibian species. Compared to the proposed Project, this alternative is inferior relative to this topic.

3.4 BIOLOGICAL RESOURCES

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species when compared to the proposed Project. Construction of this alternative would reduce the potential direct impacts, as well as indirect impacts that would occur under the proposed Project. However, there were no special status amphibians/reptiles or their habitat on the agricultural portion of the Project site and none are anticipated to be directly or indirectly impacted by the proposed Project.

The Reduced Project Alternative would result in similar construction impacts related to urban development of 67 percent of the Project site; however, this alternative would reduce the potential for impacts to biological resources by approximately 33 percent. However, the reduction to 33 percent of the area developed would not change the fact that there is no anticipated impact to special status amphibians/reptiles. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the Reduced Project Alternative would have a **less than significant** impact related to loss of habitat for special status reptile or amphibian species. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the Reduced Intensity/Density Alternative would have a **less than significant** impact related to loss of habitat for special status reptile or amphibian species. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-3: The proposed Project has the potential to have direct or indirect effects on special-status bird species (Less than Significant with Mitigation)Proposed Project:

Special-status birds that are documented within a ten-mile radius of the Project site include: White-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*), California black rail (*Laterallus jamaicensis coturniculus*), Western burrowing owl (*Athene cunicularia hypogaea*), Least Bell's vireo (*Vireo bellii pusillus*), song sparrow ("Modesto" population) (*Melospiza melodi*), and Tricolored blackbird (*Agelaius tricolor*). The Project site may provide suitable foraging habitat for a variety of potentially occurring special-status birds, including those listed above. There are few potential nest trees within the Project site that are suitable for nesting raptors and other protected migratory birds. Given the size of the Project site, the presence of nesting habitat (large trees), as well as the presence of foraging habitat (large open fields), it is likely one or more pairs of raptors, plus a variety of songbirds, nest on the site each year.

Nesting Birds: Colonial nesting water bird rookery sites of double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night heron (*Nycticorax nycticorax*), among others are considered sensitive and are known to be present in the region. There is also an extensive list of songbirds that are considered sensitive and are known to be present in the region. These species are not formally listed and protected pursuant to either the State or Federal Endangered Species Acts but are of stated interest to CDFW and are protected by the Migratory Bird Treaty Act (MBTA).

The irrigation ditches and Bear Creek presents potentially suitable habitat for these species, although rookeries of these species have not been previously reported in this area nor were they observed during any of the field surveys. The agricultural area throughout the Project site provides foraging habitat for a variety of birds. In general, the nesting season for these nesting birds is from March through August, but may vary depending on weather conditions or disturbances.

The fill of these irrigation ditches would remove these areas, which is potential nesting habitat for these colonial nesters. The construction of the outfall structure would temporarily impact habitat along Bear Creek. The proposed Project would eliminate the agricultural areas on the Project site, which serve as foraging habitat for birds in the region. Construction activities on the Project site would create temporary sources of noise and light that could affect nesting birds if they located adjacent to the Project site in the future. The ongoing activities associated with the operational phase (i.e. human and/or domesticated animal presence, light, noise, etc.) could disrupt nesting if they located adjacent to the Project site in the future.

Nesting Raptors (Birds of Prey): All raptors (owls, hawks, eagles, falcons), including common species, and their nests, are protected from take pursuant to the Fish and Game Code of California Section 3503.5, and the Federal Migratory Bird Treaty Act, among other Federal and State regulations. Powerlines and trees located in the region represent potentially suitable nesting

3.4 BIOLOGICAL RESOURCES

habitat for a variety of special-status raptors, including white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*), and Cooper's hawk (*Accipiter cooperii*). The agricultural land on the Project site and vicinity represents potentially suitable nesting habitat for the ground-nesting northern harrier (*Circus cyaneus*) and burrowing owl (*Athene cunicularia*) and it also serves as foraging habitat for a wide variety of raptors. The CNDDDB currently contains seven records for Swainson's hawk within one mile of the Project site. Additionally, Swainson's hawk has been observed foraging during the surveys. In general, raptor nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. In addition to the species described above, common raptors such as red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*), among others, may nest in or adjacent to the Project site.

The proposed Project would eliminate the agricultural areas on the Project site, which serve as potential nesting habitat for ground-nesting northern harrier (*Circus cyaneus*) and burrowing owl (*Athene cunicularia*) and foraging habitat for a variety of raptors in the region including Swainson's hawk (*Buteo swainsoni*). Construction activities on the Project site would create temporary sources of noise and light that could affect nesting raptors if they located adjacent to the Project site in the future. The ongoing activities associated with the operational phase (i.e. human and/or domesticated animal presence, light, noise, etc.) could disrupt nesting raptors if they located adjacent to the Project site in the future.

Other Birds: Other special-status birds that may occur on the Project site but are not known to nest in this region, or suitable nesting habitat is not present on the Project site include: ferruginous hawk (*Buteo rega*), golden eagle (*Aquila chrysaetos*), merlin (*Falco columbarius*) and prairie falcon (*Falco mexicanus*). Foraging habitat for these species is present in the agricultural fields within the Project site.

The proposed Project would eliminate the agricultural areas on the Project site, which serve as potential foraging habitat for these other birds. Construction activities on the Project site would create temporary sources of noise and light that could affect these birds if they located adjacent to the Project site in the future. The ongoing activities associated with the operational phase (i.e. human and/or domesticated animal presence, light, noise, etc.) could disrupt these birds if they located adjacent to the Project site in the future, although given the separation created by the open space designation the impact is less than significant.

Conclusion: Colonial nesters, nesting songbirds, raptors, and other birds are covered by the SJMSCP, which serves as a special-purpose permit for the incidental take of species that are protected. Coverage requires compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed Project. Coverage under the SJMSCP would fully mitigate all habitat impacts on these birds. Incidental take, avoidance, and minimization measures are designed to fully mitigate direct and indirect impacts to

the individuals and their activities. Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.4-2: *If construction activities occur during the avian breeding season (March 1 – August 31) then the Project proponent shall conduct pre-construction surveys to prevent impacts to nesting birds. No more than 15 days prior to the start of construction a bird survey shall be conducted by a qualified biologist to identify any active nests within the Project site. If construction stops for a period of 15 days or more during the avian breeding season then an additional bird survey shall be conducted. The biologist will conduct a survey on the Project site for all special-status birds protected by the Federal and State ESA, MBTA and CFGC, including but not limited to those that are documented within a ten-mile radius of the Project site and are known to nest in the region. The biologist shall map all nests that are within, and visible from, the Project site. If nests are identified, the biologist shall develop buffer zones around active nests as deemed appropriate in coordination with the CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice per week and a report submitted to the City and CDFW monthly.*

RESULTING LEVEL OF SIGNIFICANCE

Implementation of Mitigation Measure 3.4-2 would require a preconstruction survey of the Project site and immediate vicinity prior to construction. If nesting birds are found, an appropriate buffer would be developed around active nests as deemed appropriate in coordination with the CDFW to ensure that the nesting birds are not disrupted during the breeding season. With implementation of the mitigation measure outlined above, the potential impacts to bird species would be reduced to a **less than significant** level.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on special-status species. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. This alternative would result in the same number of HDR units as the proposed Project (340 units), and would reduce the number of LDR units from 1,073 under the proposed Project to 1,066 units, for a total of 1,406 units. This would result in a reduction of seven units when compared to the

3.4 BIOLOGICAL RESOURCES

proposed Project. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species, including colonial nesting water birds, nesting song-birds, and some raptors given the higher diversity of habitat. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Mitigation Measure 3.4-2 would require a preconstruction survey of the Project site and immediate vicinity prior to construction and if nesting birds are found, an appropriate buffer would be developed around active nests to ensure that the nesting birds are not disrupted during the breeding season. Implementation of the With Bridge Alternative with Mitigation Measure 3.4-1 would ensure that potential impacts to the loss of habitat for special status non-nesting birds are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species, including colonial nesting water birds, nesting song-birds, and some raptors given the higher diversity of habitat. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to

biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Mitigation Measure 3.4-2 would require a preconstruction survey of the Project site and immediate vicinity prior to construction and if nesting birds are found, an appropriate buffer would be developed around active nests to ensure that the nesting birds are not disrupted during the breeding season. Implementation of the General Plan 2035 Alternative with Mitigation Measure 3.4-1 would ensure that potential impacts to the loss of habitat for special status non-nesting birds are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species when compared to the proposed Project. Construction of this alternative would reduce the potential direct impacts, as well as indirect impacts that would occur under the proposed Project from the loss of foraging habitat associated with the agricultural land.

While the Reduced Project Alternative would result in similar construction impacts related to urban development of 67 percent of the Project site, this alternative would reduce the potential for impacts to foraging habitat by approximately 33 percent. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Mitigation Measure 3.4-2 would require a preconstruction survey of the Project site and immediate vicinity prior to construction and if nesting birds are found, an appropriate buffer would be developed around active nests to ensure that the nesting birds are not disrupted during the breeding season. Implementation of the Reduced Project Alternative, with the Mitigation Measure 3.4-1, would ensure that potential impacts to the loss of habitat for special status non-nesting birds are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Mitigation Measure 3.4-2 would require a preconstruction survey of the Project site and immediate vicinity prior to construction and if nesting birds are found, an appropriate buffer would be developed around active nests to ensure that the nesting birds are not disrupted during the breeding season. Implementation of the Reduced Intensity/Density Alternative, with the Mitigation Measure 3.4-1, would ensure that potential impacts to the loss of habitat for special status non-nesting birds are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-4: The proposed Project has the potential to result in direct or indirect effects on special-status mammal species. (Less than Significant)

Proposed Project:

There were no special-status mammals that are documented by the CNDDDB within a 10-mile radius of the Project site. Nevertheless, this analysis discusses various mammals that, while not documented in databases, are known to occur in the region.

Riparian (San Joaquin Valley) woodrat and riparian brush rabbit: Riparian woodrats are most numerous where shrub cover is dense and least abundant in open areas. In riparian areas, highest densities of woodrats and their stick houses/lodges are often encountered in willow thickets with an oak overstory. They are common where there are deciduous valley oaks, but few live oaks. The field survey did not reveal any woodrat houses/lodges. The riparian habitat along the Bear Creek is not dense and does not provide optimal habitat for this species.

The riparian brush rabbit also inhabits dense, brushy areas of riparian forests, marked by extensive thickets of wild rose (*Rosa* spp.), blackberries (*Rubus* spp.), and willows (*Salix* spp.). Thriving mats of low-growing vines and shrubs serve as ideal living sites where they build tunnels under and through the vegetation. Suitable existing habitat for riparian brush rabbits is characterized by an abundance of woody ground litter and fewer willows, signifying areas of higher ground not subject to regular or heavy flooding. The riparian habitat along the Bear Creek is not dense and does not provide optimal habitat for this species.

The Project site does not contain appropriate habitat for riparian (San Joaquin Valley) woodrat and riparian brush rabbit. The habitat on the Project site is limited in vegetative composition (almost barren) due to the regular agricultural activities. These species were not observed during the field surveys and have not been documented on the Project site. Based on field surveys these species are not present. Therefore, the proposed Project would have a **less than significant** impact on this special-status species.

American badger, San Joaquin kit fox, or San Joaquin pocket mouse: The Project site is frequently disturbed from active agricultural activities. As a result, the Project site does not contain high

quality habitat for the American badger, San Joaquin kit fox, or San Joaquin pocket mouse. All but one of the documented occurrences of the San Joaquin kit fox occur on the southwest side of Tracy near the foothills. One documented occurrence is located near Mountain House. San Joaquin kit fox is not anticipated to occur in the Project vicinity. There is only one documented occurrence of American badger southeast of Tracy, although they are known to occur in many other places throughout San Joaquin County. The closest documented occurrence of San Joaquin pocket mouse is near Tracy. It is highly unlikely that the Project site is used by American badger, San Joaquin kit fox, or San Joaquin pocket mouse and these species have not been observed during recent or previous field surveys. Therefore, the proposed Project would have a **less than significant** impact on these species.

Special-status bats: The Project site provides potential habitat for several special-status bats, including: Greater western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillei*), small-footed myotis/bat (*Myotis ciliolabrum*), long-eared myotis/bat (*Myotis evotis*), fringed myotis/bat (*Myotis thysanodes*), long-legged myotis/bat (*Myotis volans*), and Yuma myotis/bat (*Myotis yumanensis*). These species are not Federal or State listed; however, they are considered CDFW species of special concern and/or are tracked by the CNDDB.

The project site does not contain day or night roosting habitat for bats. Development of the Project site would eliminate foraging habitat for special status bats by removing the open agricultural areas. These special status bat species were not observed during the field surveys and have not been documented on the Project site; therefore, they are not expected to be directly affected. Therefore, the proposed Project would have a **less than significant** impact on special status bat species.

Conclusion: These species are covered species under the SJMCP and participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. SJCOG, Inc. as administrator of the SJMSCP will impose appropriate avoidance and minimization measures as part of the incidental take permit. Mitigation Measure 3.4-1, previously listed, will ensure coverage under the SJMSCP.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on special-status species. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

3.4 BIOLOGICAL RESOURCES

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species given the higher diversity of habitat. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The With Bridge Alternative would have a **less than significant** impact related to the loss of potential foraging habitat for special-status mammal species. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species given the higher diversity of habitat. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The General Plan 2035 Alternative would have a **less than significant** impact related to the loss of potential foraging habitat for special-status mammal species. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species when compared to the proposed Project. Construction of this alternative would reduce the potential direct impacts, as well as indirect impacts that would occur under the proposed Project from the loss of foraging or movement habitat associated with the agricultural land.

While the Reduced Project Alternative would result in similar construction impacts related to urban development of 67 percent of the Project site, this alternative would reduce the potential for impacts to foraging and movement habitat by approximately 33 percent. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The Reduced Project Alternative would have a **less than significant** impact related to the loss of potential foraging habitat for special-status mammal species. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The Reduced Intensity/Density Alternative would have a **less than significant** impact related to the loss of potential foraging habitat for special-status mammal species. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-5: The proposed Project has the potential for direct or indirect effects on candidate, sensitive, or special-status plant species. (Less than Significant)

Proposed Project:

The CNDDDB records search identified sixteen documented special-status plant species within a 10-mile radius of the Project site. These sixteen special status plants include: Suisun Marsh aster (*Aster lentus*), Alkali milk-vetch (*Astragalus tener* var. *Tener*), Heartscale (*Atriplex cordulata*), San Joaquin spearscale (*Atriplex joaquiniana*), Big tarplant (*Blepharizonia plumose*), Watershield

3.4 BIOLOGICAL RESOURCES

(*Brasenia schreberi*), Bristly sedge (*Carex comosa*), Palmate-bracted bird's beak (*Cordylanthus palmatus*), Round-leaved filaree (*Erodium macrophyllum*), Delta button-celery (*Eryngium racemosum*), Woolly rose-mallow (*Hibiscus lasiocarpus*), Delta tule pea (*Lathyrus jepsonii* var. *Jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), Sanford's arrowhead (*Sagittaria sanfordii*), Side-flowering skullcap (*Scutellaria lateriflora*), and saline clover (*Trifolium hydrophilum*).

Of the sixteen documented species, one is Federally listed, two are State listed, twelve are CNPS 1B listed, and four are CNPS 2 listed. All Federal and State listed species are covered species under the SJMCP.

Field surveys and habitat evaluations were performed in March 2005, May and August 2006, and May 2010 by Moore Biological. Additional surveys were performed in April and July 2015, and March and May 2016 by Principal Biologist Steve McMurtry De Novo Planning Group. The collection of field surveys included surveys that coincided with the blooming period for special many status plants known to occur within the region. The conditions of the Project site are highly disturbed due to the active agricultural operations. No special-status plants were observed within the Project site during field surveys. The surveys were conducted within the blooming period for all species. Implementation of the individual phases, and the proposed Project as a whole, will have a **less than significant** impact on special status plants.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on any special-status plants. It is noted, however, that the proposed Project is not anticipated to affect special status plants because none are believed to be present. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status plant species. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological

resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The With Bridge Alternative will have a **less than significant** impact on special status plants. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status plant species. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The General Plan 2035 Alternative will have a **less than significant** impact on special status plants. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species when compared to the proposed Project. Construction of this alternative would reduce the potential direct impacts, as well as indirect impacts that would occur under the proposed Project. However, there were no special status plants on Project site and none are anticipated to be directly or indirectly impacted by the proposed Project.

The Reduced Project Alternative would result in similar construction impacts related to urban development of 67 percent of the Project site; however, this alternative would reduce the potential for impacts to biological resources by approximately 33 percent. However, the reduction

to 33 percent of the area developed would not change the fact that there is no anticipated impact to special status plants. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The Reduced Project Alternative will have a **less than significant** impact on special status plants. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. The Reduced Intensity/Density Alternative will have a **less than significant** impact on special status plants. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-6: Effects on Protected Wetlands and Jurisdictional Waters. (Less than Significant)

Proposed Project:

A Wetland Delineation (Moore Biological 2005) was prepared for the Project site. In March 2016, De Novo Planning Group reviewed the Moore Biological (2005) wetland delineation and visited the Project site to determine the applicability of this previous study for use in the EIR. It was concluded that the conditions of the Project site in 2005 remain unchanged from the conditions reported in the wetland delineation. The wetland delineation will require a verification by the regulatory agency (US Army Corps of Engineers) prior to any disturbance or fill activities. The Wetland Delineation (Moore Biological 2005), combined with the field investigations by De Novo in 2015 and 2016, serves as the basis for the following analysis.

There is 7.47 acres of potentially jurisdictional waters of the U.S. within the project site as shown in Table 3.4-4 below. The full wetland delineation, including maps and routine wetland determination forms, is included in the appendix.

TABLE 3.4-4: WETLAND DELINEATION RESULTS

WETLAND TYPE	TOTAL WETLANDS (ACRES)	IMPACTS (ACRES)
WETLANDS		
Irrigation laterals	0.68	0.68
Roadside ditch	0.49	0.49
OTHER WATERS		
Detention Basins (AT&T and Crane facilities basins)	0.43	0.00
Bear Creek	5.87	0.14
Total	7.47	1.31

* THE PROPOSED OUTFALL DESIGN IS ANTICIPATED TO IMPACT 0.14 ACRE OF BEAR CREEK.

SOURCE: MOORE BIOLOGICAL, 2005, DE NOVO PLANNING, 2016.

The Project site contains State and Federally protected wetlands and other waters of the United States, consisting of irrigation laterals, roadside ditches, and detention basins. The Project site also contains Bear Creek, which is a U.S. water. The development of the land uses within the Project site will require fill and/or discharge into 0.68 acres of irrigation laterals, 0.49 acres of roadside ditch, and an estimated 0.14 acres of Bear Creek. The total anticipated fill is 1.31 acres. While the 0.14 acres of Bear Creek is confirmed jurisdictional, it is possible that the 1.17 acres of irrigation laterals and roadside ditch would fall under the agricultural ditch exemption.

Two irrigation laterals (0.68 acres) extend south from Eight Mile Road along the alignment of Ham Lane. These parallel features are defined by a variably discernible ordinary high water mark, are one to two feet in depth and lack any vegetation. These features are fed only by local rainfall from the agricultural fields and do not receive flows from off-site waters of the U.S. The laterals empty to Bear Creek through operable culvert structures; as a result, these features are believed to be outside USACE jurisdiction. A final jurisdictional determination would be made by the USACE.

A roadside ditch (0.49 acres) is located adjacent to West Lane. The ditch varies in depth, width and amount of vegetation and receives water from a culvert beneath a field within the Project site. The ditch discharges under West Lane and to Bear Creek through a culvert. As this ditch appears to be entirely created to drain road edges, it is believed to be outside USACE jurisdiction. The jurisdictional status of the two detention basins, two irrigation laterals and the roadside ditch will be confirmed by the USACE.

There are two detention basins (0.43 acres) located within the Industrial land use that serve the AT&T site (PacBell) and Crane site (Bragg Investment). The basins appear to be supported by runoff from the adjoining industrial use, have no outlet and were excavated in uplands. As a result, it is believed that these features are non-jurisdictional. It should be noted that there are no anticipated impacts/fill to the two detention basins located within the Industrial land.

A levee along Bear Creek provides clear separation between jurisdictional waters and the adjacent farmlands. There were 5.87 acres of jurisdictional water delineated associated with Bear Creek within the Project site. The 5.87 acres of jurisdictional water will be preserved as open space. However, the proposed Project will require the construction of a storm drainage outfall (0.14

3.4 BIOLOGICAL RESOURCES

acres) within Bear Creek levee structure. The section of Bear Creek at the outfall is bounded by levees on both sides, providing a clear separation between the creek and adjacent farmlands. The exact design and placement of the storm drain outfall has not been identified on the Project site; therefore the impact acreage on Bear Creek cannot be precisely quantified. The 0.14 acres is estimated based on standard outfall structure constructed within levee systems in the region. A typical outfall detail is included in the appendix.

The U.S. Army Corps of Engineers has regulatory responsibility for navigable waters as well as "all other waters such as...streams ...wetlands...and natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce" (33 CFR 323.2) under Section 404 of the Clean Water Act. A formal jurisdictional determination must be made by the USACE relative to the wetlands delineated on the Project site. Because these on-site irrigation laterals, roadside ditches, and detention ponds are manmade and function to drain upland agricultural runoff they are expected to be exempted from the USACE jurisdiction under the Irrigation Ditch Exemption pursuant to Federal Regulations (33 CFR 323.4(a)(3)). Until a USACE determination is made, the on-site irrigation laterals, roadside ditches, and detention ponds will be assumed to be jurisdictional.

Implementation of the proposed Project, including the storm drainage outfall, would impact two irrigation laterals (0.68 acres), roadside ditch (0.49 acres), and a portion of Bear Creek (0.14 acres). The total fill is anticipated to be 1.31 acres. This is a potentially significant impact. Compliance with existing RWQCB and USACE procedures and regulations would ensure the impact is **less than significant**.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on jurisdictional waters. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to jurisdictional waters when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. There was 5.87 acres of jurisdictional waters mapped in association with Bear Creek. The proposed Project would preserve most of that acreage, limiting impacts to 0.14 acres in association with the construction of an outfall. Construction of the bridge would present new direct impacts to jurisdictional water, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to wetlands during construction activities. Similar to the proposed Project, all fill activity would need to be permitted and compensated. Compliance with existing RWQCB and USACE procedures and regulations would ensure that any fill activity would be permitted, which requires compensatory mitigation. Compliance with the same permitting requirements as the proposed Project would ensure impacts related to wetlands and jurisdictional waters under the With Bridge Alternative would be **less than significant**. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to jurisdictional waters when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. There was 5.87 acres of jurisdictional waters mapped in association with Bear Creek. The proposed Project would preserve most of that acreage, limiting impacts to 0.14 acres in association with the construction of an outfall. Construction of the bridge would present new direct impacts to jurisdictional water, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, all fill activity would need to be permitted and compensated. Mitigation Measure 3.4-3 will ensure that any fill activity would be permitted, which requires compensatory mitigation. Implementation of the same mitigation as the proposed Project would ensure impacts related to wetlands and jurisdictional waters under the General Plan 2035 Alternative would be **less than significant**. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts when compared to the proposed Project. Construction of this alternative, however, would not eliminate the impacts to any of the areas that were delineated as potentially jurisdictional. Similar to the proposed Project, all fill activity would need to be permitted and compensated. Compliance with existing RWQCB and USACE procedures and regulations would ensure that any fill activity would be permitted, which requires compensatory

mitigation. Compliance with the same permitting requirements as the proposed Project would ensure impacts related to wetlands and jurisdictional waters under the Reduced Project Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to jurisdictional water when compared to the proposed Project because the physical footprint of the Project site would be the same. Compliance with existing RWQCB and USACE procedures and regulations would ensure that any fill activity would be permitted, which requires compensatory mitigation. Compliance with the same permitting requirements as the proposed Project would ensure impacts related to wetlands and jurisdictional waters under the Reduced Intensity/Density Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-7: Adverse Effects on Riparian Habitat or Sensitive Natural Community. (Less than Significant with Mitigation)

Proposed Project:

The CNDDDB record search revealed documented occurrences of two sensitive habitats within 10 miles of the Project site including: Valley Oak Woodland and Coastal and Valley Freshwater March. Neither of these sensitive natural communities occurs on the Project site. The strip of herbaceous riparian habitat along the Bear Creek edge will remain in open space to preserve the biological functions of the area, with the exception of the acreage affected by the storm drainage outfall construction.

The storm drain outfall would be constructed along the north bank of the Bear Creek levee. The section of Bear Creek at the outfall is bounded by levees on both sides, providing a clear separation between the herbaceous riparian area and adjacent farmlands. The water side of the levees is vegetated with a discontinuous band of herbaceous riparian plants. The exact design and placement of the storm drain outfall has not been identified on the Project site; however, it is anticipated that 0.14 acres of impacts to riparian habitat along Bear Creek would occur. The storm drainage outfall will be located in an area with low vegetation density and no tree coverage to minimize impacts. Implementation of the following mitigation measure would ensure that the potential impact to riparian habitat is reduced to a **less than significant** level. There are no other sensitive natural communities on the Project site.

MITIGATION MEASURES

Mitigation Measure 3.4-3: Prior to installation of the storm drainage outfall, compensate/replace for any disturbance to riparian habitat along Bear Creek in association with the storm drainage outfall. Compensation/replacement ratios shall be at a minimum ratio of 1 acre restored, created, and/or preserved for every 1 acre of riparian disturbed. The acreage impacted shall be calculated based on the final design of the storm drainage outfall. Compensation may comprise onsite restoration/creation, off-site restoration, preservation, or mitigation credits (or a combination of these elements). The applicant shall provide documentation of compliance to the City of Stockton.

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.4-3 requires compensation/replacement (at a minimum ratio of 1 acre restored, created, and/or preserved for every 1 acre of riparian disturbed) for any disturbance to riparian habitat along Bear Creek in association with the storm drainage outfall. With implementation of Mitigation Measure 3.4-3, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on riparian habitat. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. There is herbaceous riparian habitat along the edge of Bear Creek, and aquatic habitat within Bear Creek. The proposed Project would preserve most of that acreage, limiting impacts to 0.14 acres in association with the construction of an outfall. Construction of the bridge would present new direct impacts to the riparian and aquatic habitat, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, all fill activity would need to be permitted and loss of riparian and aquatic habitat would be compensated. Mitigation

3.4 BIOLOGICAL RESOURCES

Measure 3.4-3 will ensure that the loss of riparian habitat is compensated. Implementation of the same mitigation as the proposed Project would ensure impacts related to riparian or sensitive natural communities under the With Bridge Alternative would be **less than significant**. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. There is herbaceous riparian habitat along the edge of Bear Creek, and aquatic habitat within Bear Creek. The proposed Project would preserve most of that acreage, limiting impacts to 0.14 acres in association with the construction of an outfall. Construction of the bridge would present new direct impacts to the riparian and aquatic habitat, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, all fill activity would need to be permitted and loss of riparian and aquatic habitat would be compensated. Mitigation Measure 3.4-3 will ensure that the loss of riparian habitat is compensated. Implementation of the same mitigation as the proposed Project would ensure impacts related to riparian or sensitive natural communities under the General Plan 2035 Alternative would be **less than significant**. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts when compared to the proposed Project. Construction of this alternative, however, would not eliminate the impacts to any of the herbaceous riparian habitat along Bear Creek. Similar to the proposed Project, all fill activity would need to be permitted and loss of riparian and aquatic habitat would be compensated. Mitigation Measure 3.4-3 will ensure that the loss of riparian habitat is compensated. Implementation of the same mitigation as the proposed Project would ensure impacts related to riparian or sensitive natural communities under the Reduced Project Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to riparian habitat when compared to the proposed Project because the physical footprint of the Project site would be the same. Mitigation Measure 3.4-3 will ensure that the loss of riparian habitat is compensated. Implementation of the same mitigation as the proposed Project would ensure impacts related to riparian or sensitive natural communities under the Reduced Intensity/Density Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-8: Interference with the Movement of Native Fish or Wildlife Species or with Established Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites. (Less than Significant)

Proposed Project:

The CNDDDB records search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the Project site. Bear Creek, however, is a tributary to the San Joaquin River Delta, which is a natural movement corridor for native fish that are documented in the region including: delta smelt (*Hypomesus transpacificus*), Central Valley steelhead (*Oncorhynchus mykiss*), longfin smelt (*Spirinchus thaleichthys*), Sacramento splittail (*Pogonichthys macrolepidotus*), and river lamprey (*Lampetra ayresii*).

The proposed Project would not result in any direct disturbance to the San Joaquin River Delta; however, there would be direct disturbance to Bear Creek during construction of the outfall. The outfall would require limited construction activities on the bank/levee of Bear Creek. These activities would not be expected to have a direct impact on special status fish species as they would not interfere with movement or use of the San Joaquin River Delta during or after the construction activities.

Construction activities associated with the outfall could have indirect impacts on these fish species downstream from the potential for sedimentation and other pollution to enter into the San Joaquin River Delta during construction. The outfall construction will require authorization from the USACE, RWQCB, and CDFW through the regulatory permit processes (See Mitigation Measure 3.4-3 and 3.4-4). These regulatory agencies will impose standard conditions that include best management practices that are aimed at minimizing pollution associated with construction activities.

The ongoing operational phase of the proposed Project requires discharge of stormwater into the San Joaquin River Delta through the above referenced outfall. The discharge of stormwater could

result in indirect impacts to special status fish and wildlife if stormwater was not appropriately treated through BMPs prior to its discharge to the San Joaquin River Delta. Federal and State law provides a requirement to prevent, control and reduce stormwater pollutants. This includes requirements to implement best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Under this requirement, the owner or operator of a commercial or industrial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

There are various non-structural and structural stormwater BMPs that can be implemented to reduce pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPs are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities. The following mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into Bear Creek. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife in Bear Creek, or the downstream Delta system. Implementation of these structural and non-structural BMPs would ensure that this impact is **less than significant**.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect impact to the water quality and fish/wildlife in Bear Creek, and downstream Delta system. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. The construction and operation of the Bear Creek Bridge would present new direct impacts to the water quality and fish/wildlife in Bear Creek,

and downstream Delta system, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into Bear Creek. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife in Bear Creek, or the downstream Delta system. Implementation of the same structural and non-structural BMPs as the proposed Project would ensure that this potential impact is reduced to a **less than significant** level. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. The construction and operation of the Bear Creek Bridge would present new direct impacts to the water quality and fish/wildlife in Bear Creek, and downstream Delta system, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into Bear Creek. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife in Bear Creek, or the downstream Delta system. Implementation of the same structural and non-structural BMPs as the proposed Project would ensure that this potential impact is reduced to a **less than significant** level. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for indirect impacts to water quality and fish/wildlife in Bear Creek when

compared to the proposed Project. The Reduced Project Alternative would still require the construction of the outfall, so the potential for direct impacts would remain the same during construction. The reduced urban area would result in a reduction in the potential for urban pollution to runoff and discharge into Bear Creek. This impact would result in similar construction impacts related to urban development for the balance of the Project site. Similar to the proposed Project, mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into Bear Creek. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife in Bear Creek, or the downstream Delta system. Implementation of the same structural and non-structural BMPs as the proposed Project would ensure that this potential impact is reduced to a **less than significant** level. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to water quality and fish/wildlife in Bear Creek, and downstream Delta system when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, mitigation measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into Bear Creek. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife in Bear Creek, or the downstream Delta system. Implementation of the same structural and non-structural BMPs as the proposed Project would ensure that this potential impact is reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-9: Conflict with an Adopted Habitat Conservation Plan. (Less than Significant)

Proposed Project:

The proposed Project is subject to the SJMSCP. The proposed Project does not conflict with the SJMSCP. Therefore, the proposed Project would have a **less than significant** impact relative to this topic. Mitigation Measure 3.4-1 requires participation in the SJMSCP.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on special-status species and would not be subject to the SJMSCP. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is

required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species given the aquatic habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the With Bridge Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. Bear Creek is the most biologically sensitive area in the vicinity, and is the area with the highest potential to have special status species given the aquatic habitat and herbaceous riparian edge along the creek. Construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for impacts to biological resources during construction activities. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the General Plan

2035 Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to special status species when compared to the proposed Project. Construction of this alternative would reduce the potential direct impacts, as well as indirect impacts that would occur under the proposed Project.

While the Reduced Project Alternative would result in similar construction impacts related to urban development of 67 percent of the Project site, this alternative would reduce the potential for impacts to biological resources by approximately 33 percent. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the Reduced Project Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Mitigation Measure 3.4-1 will ensure coverage under the SJMSCP. Therefore, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.4-10: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant with Mitigation)

Proposed Project:

The Stockton Municipal Code provides an application process that is required in order to remove heritage trees. The Municipal Code establishes that any heritage tree that is removed or effectively removed shall be replaced on a three (3) for one (1) basis at the discretion of the Director. The size of the replacement trees shall be determined by the Director based on the size of the tree that was removed, but shall be at least 15-gallon container stock. If possible, the replacement trees shall be planted on the same parcel as the tree that was removed. In those cases where it is not

possible to replace the tree on the same parcel, the replacement tree(s) shall be planted in a City park or other location determined by the Director. (Ord. 015-09 C.S., eff. 12-3-09).

The proposed Project would involve extensive grading and disturbance of the Project site as construction proceeds, and proposed land uses would involve removal of most or all of the existing vegetation. There are three Heritage Oak trees located in the southern portion of the Project site near the Bear Creek levee. It is anticipated that all three trees would be removed; however, it may be possible to avoid one or more of these trees during the more refined engineering phase of the Project. If any Heritage Oak trees were able to be avoided, their root systems would still be subject to potential impact as the result of development activity in the vicinity.

With the implementation of the following mitigation measures, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURES

Mitigation Measure 3.4-4: *The Project proponent shall if possible avoid removal of the three Heritage Oak trees located within the Project site. The Project proponent shall implement remedial pruning or other recommendations set forth in the Arborist's report for any Heritage Tree that will be retained so as to preserve the tree and protect the general public. Subdivision and site improvement plans shall be subject to the review of the City Parks Facility Planner/Landscape Architect (Public Works Department).*

Mitigation Measure 3.4-5: *For the Heritage Oak trees that must be removed, a permit shall be obtained pursuant to the Stockton Heritage Tree Ordinance. Replacement oak trees shall be planted on the same site as the removed tree if at all possible; otherwise, an alternate site shall be selected by the applicant and submitted to the City Parks Facility Planner/Landscape Architect (Public Works) for approval. The size of replacement trees shall be based on the original trees' retention value (as determined by a certified Arborist retained by the owner/developer) as follows:*

<u>Retention Value</u>	<u>Replacement Oak Size</u>
Low	One 15-gallon
Moderate	Two 15-gallon
Moderate-high	Five 15-gallon
High	Eight 15-gallon

The Project proponent shall provide the resources necessary to ensure that the newly planted replacement trees become established in their new location. The Project proponent shall retain the services of a certified Arborist for a period of three years. Site inspections will be made by the Arborist weekly within the first six months of planting and monthly for the remaining thirty months. The Arborist's function will be to monitor the condition of the newly planted trees and report to the City and Project proponent any trees that are in need of attention or replacement. The Project proponent shall be responsible for purchasing and planting any replacement trees deemed necessary by the Arborist over the three-year period. Any newly planted trees in need of attention,

3.4 BIOLOGICAL RESOURCES

as so-deemed by the Arborist, shall be properly cared for by the Project proponent until the Arborist finds that they are in satisfactory condition.

Mitigation Measure 3.4-6: *Grading of the area that includes any Heritage Oak to be preserved shall be designed to preserve existing grade to the drip line surrounding the Heritage Tree, in order to enhance survivability. Prior to construction, a temporary barrier shall be placed around the drip line of any preserved Heritage Oak that is within 25 feet of any planned grading or construction activity. No storage or operation of any equipment will occur within this barrier. No construction materials or fill will be stockpiled within this barrier, and trespassing will be prohibited.*

Mitigation Measure 3.4-7: *Future development shall avoid removal of non-Heritage oak trees located within the Project site, if possible. If avoidance is not feasible, replacement oak trees shall be planted as directed by a certified Arborist, and replanted trees shall be monitored as the replanting for replacement of Heritage oak trees as set forth in Mitigation Measure 3.4-5.*

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.4-4 requires the Project applicant to avoid removal of the three Heritage Oak trees located within the Project site. Mitigation Measure 3.4-5 requires a permit to be obtained pursuant to the Stockton Heritage Tree Ordinance before removing any heritage trees from the site. Mitigation Measure 3.4-6 requires that measures be implemented to preserve the existing grade to the drip line surrounding any heritage trees. Mitigation Measure 3.4-7 requires avoidance of non-heritage oak trees where possible. With implementation of Mitigation Measures 3.4-4 through 3.4-7, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could a direct or indirect effect on Heritage Oak Trees. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

The With Bridge Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the With Bridge Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. While construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project, there are no additional Heritage Oak Trees that would be affected;

however, one of the Heritage Oak Trees would not be able to be avoided. The two other Heritage Oak Trees may still be able to be avoided.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing would require one of the three Heritage Oak Trees to be removed. Similar to the proposed Project, the Project proponent would be required to comply with the provisions of the Stockton Heritage Tree Ordinance, including issuance of a Heritage Tree Permit. Removal of the Heritage Oak Tree would require mitigation in the form of replacement tree plantings. Mitigation Measures 3.4-4 through 3.4-7 would require compliance with the Stockton Municipal Code for removal and replacement of trees, or the protection of the root systems for tree that can be avoided. With the implementation of the same mitigation measures as the proposed Project, this alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would result in essentially the same biological impacts to special status species when compared to the proposed Project because the physical footprint of the Project site would be the same; however, the General Plan 2035 Alternative would increase the footprint slightly with the construction of a bridge across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connect with Holman Road. While construction of the bridge would present new direct impacts, as well as indirect impacts that would not otherwise occur under the proposed Project, there are no additional Heritage Oak Trees that would be affected; however, one of the Heritage Oak Trees would not be able to be avoided. The two other Heritage Oak Trees may still be able to be avoided.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing would require one of the three Heritage Oak Trees to be removed. Similar to the proposed Project, the Project proponent would be required to comply with the provisions of the Stockton Heritage Tree Ordinance, including issuance of a Heritage Tree Permit. Removal of the Heritage Oak Tree would require mitigation in the form of replacement tree plantings. Mitigation Measures 3.4-4 through 3.4-7 would require compliance with the Stockton Municipal Code for removal and replacement of trees, or the protection of the root systems for tree that can be avoided. With the implementation of the same mitigation measures as the proposed Project, this alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

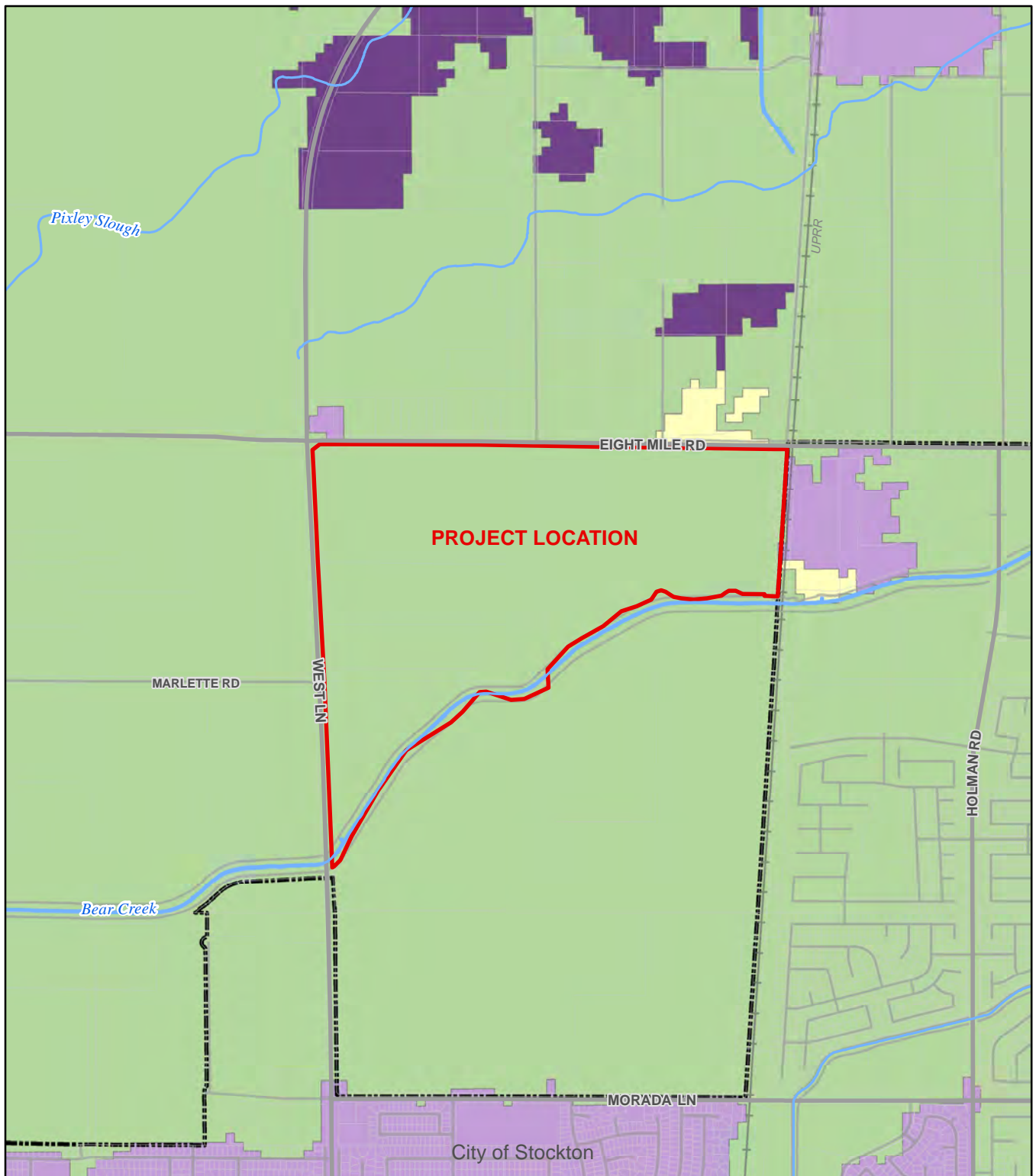
3.4 BIOLOGICAL RESOURCES

The Reduced Project Alternative would result in 33 percent less land developed, which would reduce the potential for biological impacts to Heritage Oak Trees when compared to the proposed Project. Similar to the proposed Project, the Project proponent would be required to comply with the provisions of the Stockton Heritage Tree Ordinance, including issuance of a Heritage Tree Permit. It is anticipated that the Heritage Oak Trees could be avoided through this alternative. This alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Intensity/Density Alternative would result in essentially the same biological impacts to Heritage Oak Trees when compared to the proposed Project because the physical footprint of the Project site would be the same. Similar to the proposed Project, the Project proponent would be required to comply with the provisions of the Stockton Heritage Tree Ordinance, including issuance of a Heritage Tree Permit. Removal of the Heritage Oak Tree would require mitigation in the form of replacement tree plantings. Mitigation Measures 3.4-4 through 3.4-7 would require compliance with the Stockton Municipal Code for removal and replacement of trees, or the protection of the root systems for tree that can be avoided. With the implementation of the same mitigation measures as the proposed Project, this alternative would have a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

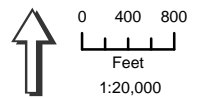


TRA VIGNE

Figure 3.4-1: Land Cover Types

Legend

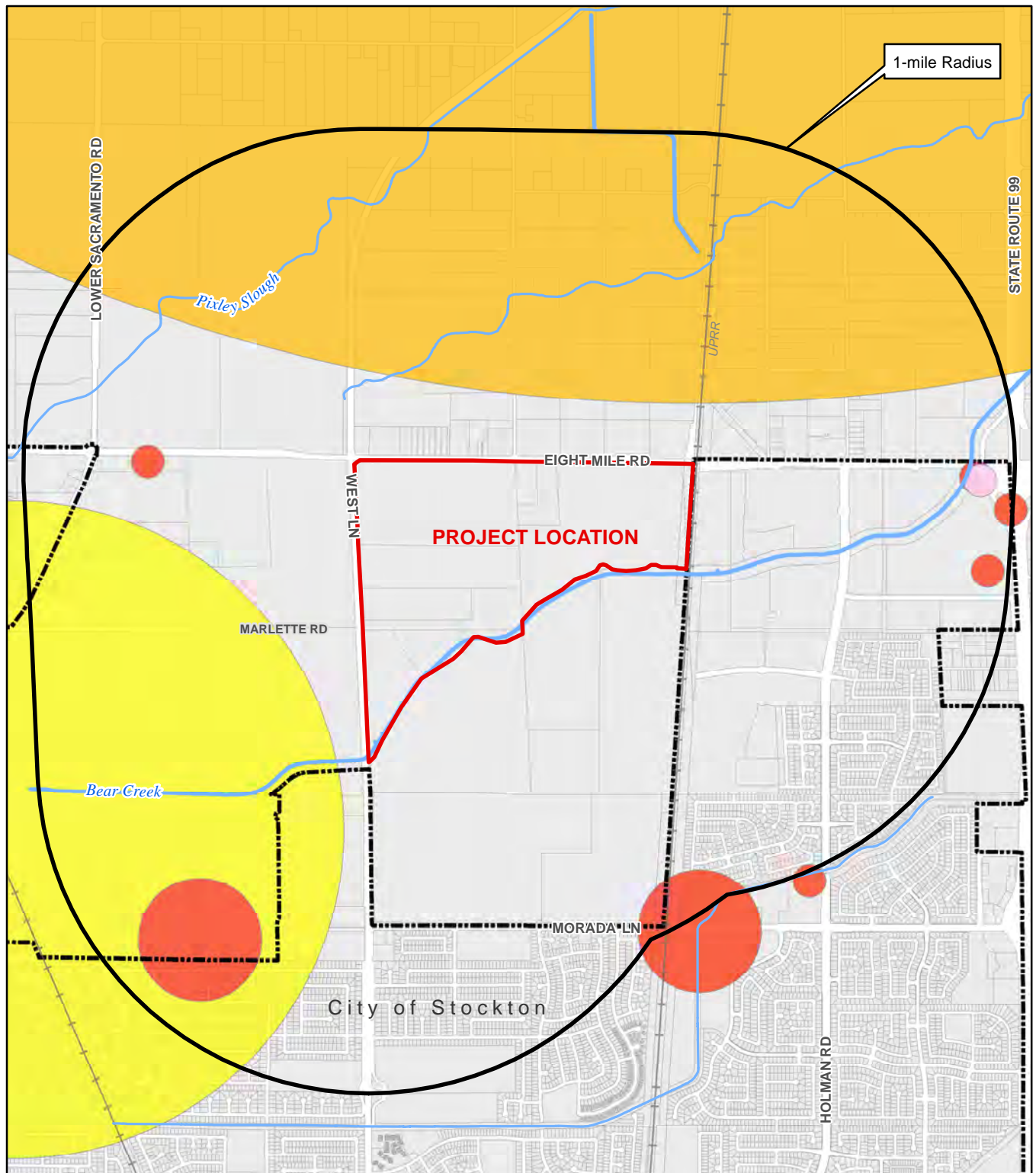
- Annual Grassland
- Irrigated Row and Field Crops
- Orchard - Vineyard
- Urban



Data sources: California Department of Forestry and Fire Protection's CALFIRE Fire and Resource Assessment Program FRAP Vegetation (FVEG15.1); San Joaquin County GIS. Map date: May 18, 2016.

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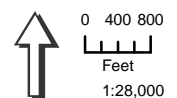
TRA VIGNE

Figure 3.4-2: California Natural Diversity Database

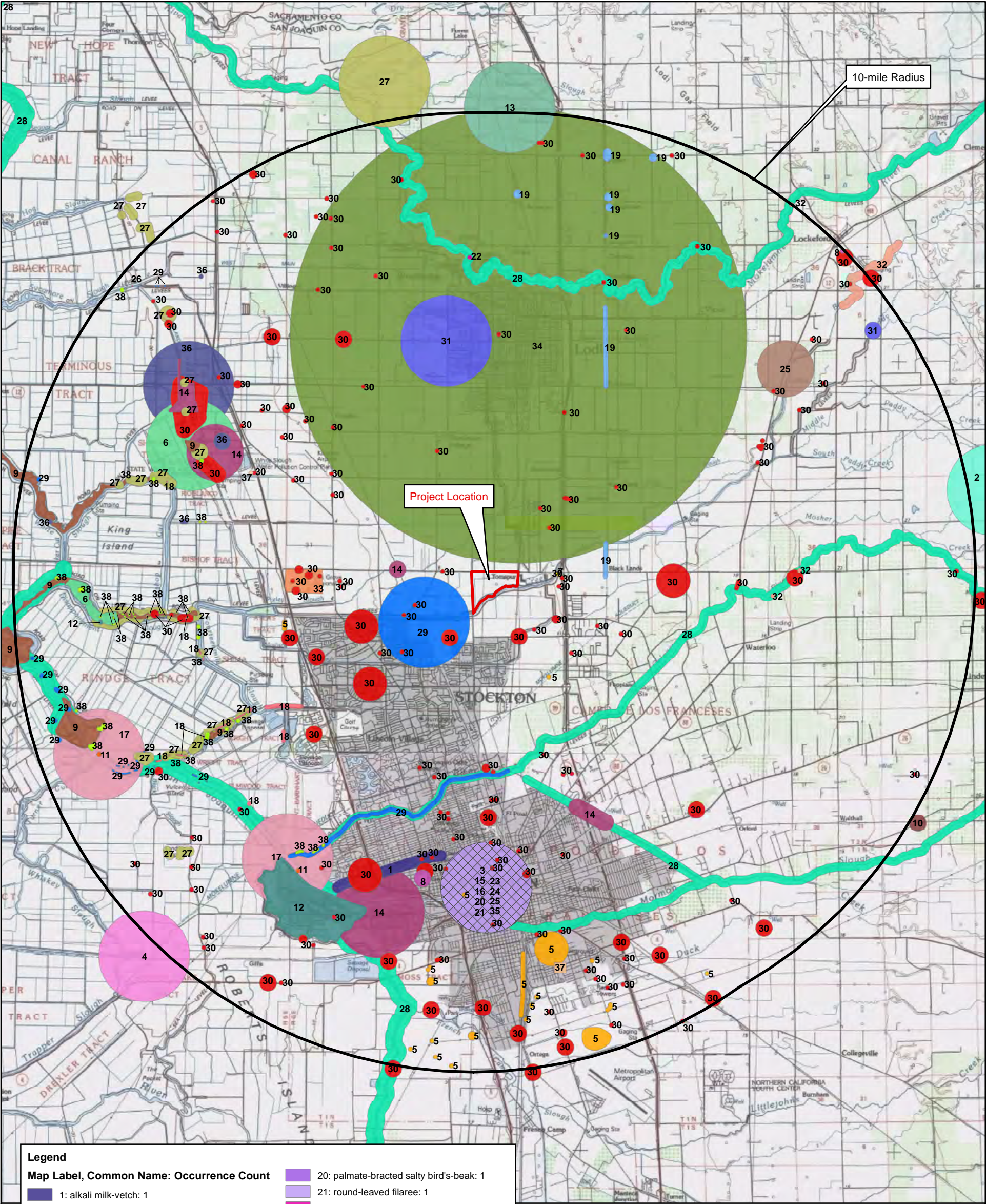
1-mile Radius Search

Legend

- California linderella
- Suisun Marsh aster
- Swainson's hawk
- vernal pool tadpole shrimp



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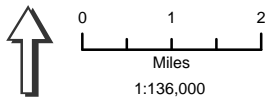


Legend

Map Label, Common Name: Occurrence Count

- | | |
|---|---|
| 1: alkali milk-vetch: 1 | 20: palmate-bracted salty bird's-beak: 1 |
| 2: an andrenid bee: 1 | 21: round-leaved filaree: 1 |
| 3: big tarplant: 1 | 22: Sacramento splittail: 1 |
| 4: bristly sedge: 1 | 23: saline clover: 1 |
| 5: burrowing owl: 20 | 24: San Joaquin spearscale: 1 |
| 6: California black rail: 2 | 25: Sanford's arrowhead: 2 |
| 7: California linderiella: 1 | 26: side-flowering skullcap: 1 |
| 8: California tiger salamander: 2 | 27: song sparrow ("Modesto" population): 11 |
| 9: Coastal and Valley Freshwater Marsh: 6 | 28: steelhead - Central Valley DPS: 3 |
| 10: Delta button-celery: 1 | 29: Suisun Marsh aster: 12 |
| 11: Delta smelt: 2 | 30: Swainson's hawk: 129 |
| 12: Delta tule pea: 2 | 31: tricolored blackbird: 2 |
| 13: foothill yellow-legged frog: 1 | 32: valley elderberry longhorn beetle: 4 |
| 14: giant garter snake: 5 | 33: Valley Oak Woodland: 1 |
| 15: heartscale: 1 | 34: vernal pool tadpole shrimp: 1 |
| 16: least Bell's vireo: 1 | 35: watershield: 1 |
| 17: longfin smelt: 2 | 36: western pond turtle: 5 |
| 18: Mason's lilaeopsis: 8 | 37: white-tailed kite: 2 |
| 19: midvalley fairy shrimp: 7 | 38: woolly rose-mallow: 15 |
| | Area of Multiple Species Occurrence |

TRA VIGNE
Figure 3.4-3: California Natural Diversity Database
10-mile Radius Search



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3.5.1 INTRODUCTION

This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. The NOP was sent to the Native American Heritage Commission (NAHC) for review and comment. The NAHC provided comments, but did not provide a list of Native American contacts. The NAHC comment letter outlined the applicable cultural resources provisions, regulations, and requirements. The applicable cultural resources provisions are outlined in Section 3.5.3, Regulatory Setting, of this section. Impact 3.5-5 discusses potential impacts related to tribal cultural resources. Full comments received are included in Appendix A. There were no other comments received during the public review period for the NOP related to cultural resources. Information in this section is derived primarily from the *Cultural Resource Assessment for the Tra Vigne Project, City of Stockton, San Joaquin County, California* (Peak & Associates, Inc., 2016).

3.5.2 ENVIRONMENTAL SETTING

PROJECT SETTING

The Project site is immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. An irrigation catch pond runs along the north side of the Project site. The Project site is located within a portion of Section 2 of Township 2 North, Range 6 East MDBM. The site is shown on the Lodi South, California, 7.5-minute series quadrangle map.

CULTURAL AND HISTORICAL SETTING

Summary of Prehistory Studies

The Central Valley region was among the first in the state to attract intensive anthropological fieldwork (i.e. excavations), and research has continued to the present day. This has resulted in a substantial accumulation of data.

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson, 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves, 1936). Excavation data, in particular from the stratified Windmill site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento City College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in

soils within sites (Lillard, Heizer and Fenenga, 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmill Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis* sp. rather than red *Haliotis* sp. Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

The Hotchkiss Culture (Late Horizon) burial pattern retains the use of the flexed mode, and there is wide spread evidence of cremation. During this period, there is lesser use of red ocher, heavy use of baked clay and *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, extensive use of shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto, 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term "Complex" to refer to the particular archeological entities (above called "Horizons") as defined in this region. Ragir's (1972) cultures are the same as Schulz's complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span.

There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases

and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips' (1958) earlier "tradition", although it is tied more specifically to the archeological record in California.

Ethnography

The Project area lies within the northern portion of the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber, 1925; Latta, 1949). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber, 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. On the north they were bordered by the Plains Miwok, and on the west by the Sacan or Bay Miwok and Costanoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis, 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook, 1955; Baumhoff, 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta, 1949; Kroeber, 1925), with most constructed from the readily available tules found

in the extensive marshes of the low-lying valley areas. The housepit depressions for the structures ranged in diameter from three meters to 18 meters (Wallace, 1978:470).

Historical Background

The agricultural value of the San Joaquin Valley was recognized early in time, with much of the region used for dry land grain farming. The early completion of railroads through the region helped provide a ready means of shipping farm products. The 1870 San Joaquin County maps shows the Western Pacific railroad line immediately east of the Project site. By 1883, the rail line had been acquired by the Central Pacific and by 1905, the Southern Pacific.

In 1870, the western portion of the Project lands had been acquired by W.J. Floyd with P. Leshner acquiring the eastern portion. Floyd apparently acquired the northern half of the section by 1883, with his home located in the northeastern corner of the Project area (Thompson and West, 1883).

It cannot be determined when the residential complex was completed in the southeastern portion of the Project site. The lands of the Project site changed hands a number of times. The portion in the southwestern portion of section 2 within the Project site, owned by W.J. Floyd in 1870, had been sold to B.M. Hoenshell by 1883 and to W.D. Buckley by 1905. The early topographic map from 1910 shows a building within the southwestern portion of the Project area. By 1910, there are other land alterations, including an east-west oriented berm to the north of the residence, a levee along Bear Creek, and a north-south oriented berm in the central portion of the Project site.

The Project site has been under cultivation for about 150 years, with alterations to the land related to management of Bear Creek waters and residential use of a portion of the property. The residential complex was removed from the Project site in 2005. The land is now planted as a vineyard.

METHODOLOGY

Records Search

Records of previously recorded cultural resources and cultural resource investigations were examined by the Central California Information Center of the California Historical Resources Information System for the Project area (CCIC File # 9631 L) on February 12, 2016. One site had been reported in the Project area, and one possible site, a lithic scatter, noted during a 2004 survey of the property. Site forms were not prepared for the reported findings.

During removal of buildings from the Project site in 2005, in an area said to contain human remains by the former site resident, partial remains of two individuals and 5 artifacts were located in a disturbed context. The San Joaquin County Coroner was contacted when the remains were discovered; the Coroner consulted with the NAHC, who appointed a "most likely lineal descendant." The remains only were removed from the property in 2005, and placed in storage.

Recently, the remains have been placed into the custody of the local Native American group appointed “most likely lineal descendant” in 2005. The continuing involvement of the same individual and return of remains to this party were discussed and approved by the NAHC. Reburial of the recovered remains, possibly within the Project site, will be arranged at a later date.

A site record was recently submitted to the Central California Information Center, and the area has now been assigned a permanent number in the State system, CA-SJO-363.

The possible site area in the eastern portion of the Project site appears to have been a lithic scatter with obsidian and chert flakes. This possible site was assigned a primary number in the State system.

Field Survey

The Project site was subject to a complete survey on March 4, 5, and 25, 2016 by Robert Gerry and Mike Lawson, covering the area with transects no wider than 20 meters. Most of the Project area is in cultivation. The ground surface within the Project area was inspected for artifacts, midden or any other indication of site presence. The ground surface, though heavily disturbed by previous agricultural work, was easily visible in all areas due to tillage, mowing and spacing of plants, with no vegetation on the surface in some areas. There were no significant impediments to surface visibility. At the site where remains had been found, a fragment of a ground stone artifact and two chipped stone artifacts were located. A possible meta-volcanic flake was found in the eastern portion of the Project site, near the reported location of findings in the earlier survey. This location is not certain since no site record was filed for the reported site area.

No new historic period cultural resources were noted in the survey.

Further Field Investigations

Due to the previous findings of human remains within the Project site, a program of backhoe trenching was undertaken on March 17 and 18, 2016. The trenches were placed throughout the previous location of the human remains to determine if the Project site contained an intact prehistoric period resource. Additional trenching was also conducted in other portions of the Project area, extending along the north side of Bear Creek and within the area reported to contain artifacts at the east side of the Project area. A total of 88 trenches were excavated, with samples screened from each trench to locate the possible presence of artifactual materials. The work was monitored by Kathy Perez, representing the North Valley Yokuts Tribe. No subsurface cultural materials were found in any of the trenches. There do not appear to be intact prehistoric period resources in the Project area. The remains and artifacts present may be the result of filling within the Project site.

3.5.3 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criteria to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

National Register of Historic Places (NRHP)

The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and

- (A) that are associated with events that have made a significant contribution to the broad patterns of our history and cultural heritage; or*
- (B) that are associated with the lives of persons significant in our past; or*
- (C) that embody the distinctive characteristics of a type, period, region, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- (D) that have yielded, or may be likely to yield, information important in prehistory or history.*

STATE

California Register of Historic Resources (CRHR)

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties

that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by California Code of Regulations (CCR) §15064.5(b) and Public Resources Code (PRC) §21083.2 and 21084.1.

Cultural resources, under CRHR guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §15064.5(b) and PRC §21083.2 and 21084.1.

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or

- it is directly associated with a scientifically recognized important prehistoric or historic event.

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. Additionally, AB 978 included non-federally recognized tribes for repatriation.

Assembly Bill 52

AB 52, approved in September 2014, creates a formal role for California Native American tribes by creating a formal consultation process and establishing that a substantial adverse change to a tribal cultural resource has a significant effect on the environment. Tribal cultural resources are defined as:

- 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - A) Included or determined to be eligible for inclusion in the CRHR
 - B) Included in a local register of historical resources as defined in PRC Section 5020.1(k)
- 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 PRC Section 5024.1 (c). In applying the criteria set forth in PRC Section 5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria above is also a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. In addition, a historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a “non-unique archaeological resource” as defined in PRC Section 21083.2(h) may also be a tribal cultural resource if it conforms with above criteria.

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

LOCAL

City of Stockton General Plan

The following goals and policies of the Stockton General Plan related to cultural resources are applicable to the proposed Project.

Natural & Cultural Resources Element

CULTURAL RESOURCES GOAL

- NCR-3. To encourage the identification, protection, and enhancement of the city's archaeological, historical, cultural, and paleontological resources for their cultural values.

CULTURAL RESOURCES POLICIES

- NCR-3.1 Evaluation of Historic Resources. The City shall use appropriate State and Federal standards in evaluating the significance of historic resources that are identified in the city.
- NCR-3.2 Historic Structures and Sites. The City shall support public and private efforts to preserve, rehabilitate, and continue the use of historic structures, sites, and districts. Where applicable, preservation efforts shall conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.
- NCR-3.3 Historical/Cultural Resources Inventory. The City shall continue to maintain and update a historical resources inventory. In addition, the City will expand this inventory to include sites of cultural significance.
- NCR-3.4 State Historic Building Code. The City shall implement the State Historic Building Code for historic properties.
- NCR-3.5 Archaeological Resource Surveys. Prior to project approval, the City shall require project applicant to have a qualified archeologist conduct the following activities: (1) conduct a record search at the Central California Information Center located at California State University Stanislaus and other appropriate historical repositories, (2) conduct field surveys where appropriate, and (3) prepare technical reports, where appropriate, meeting California Office of Historic Preservation Standards (Archeological Resource Management Reports).
- NCR-3.6 Discovery of Archaeological Resources. Consistent with Stockton Municipal Code Section 16-310.050 – Cultural Resources, in the event that archaeological/paleontological resources are discovered during site excavation, the City shall require that grading and construction work on the project site be suspended until the significance of the features can be determined by a qualified archaeologist/paleontologist. The City will require that a qualified archeologist/paleontologist make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recovery, excavation, analysis, and curation of archaeological/paleontologist materials.

3.5 CULTURAL AND TRIBAL RESOURCES

City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.

- NCR-3.7 Native American Resources. The City shall consult with Native American representatives regarding cultural resources to identify locations of importance to Native Americans, including archeological sites and traditional cultural properties. Coordination with the Native American Heritage Commission should begin at the onset of a particular project.
- NCR-3.8 Discovery of Human Remains. Consistent with Stockton Municipal Code Section 16-310.050 – Cultural Resources and the CEQA Guidelines (Section 15064.5), if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - The San Joaquin County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and
 - If the remains are of Native American origin,
 1. The descendants of the deceased Native Americans have made a timely recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98;
 2. The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission, or
 3. The landowner or his or her authorized representative rejects any timely recommendations of the descendent, and mediation conducted by the Native American Heritage Commission has failed to provide measures acceptable to the landowner.

3.5.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project is considered to have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource;

- Disturb any human remains, including those interred outside of formal cemeteries.
- 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, that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5. (Less than Significant with Mitigation)

Proposed Project:

The Project site is located in an area known to have historical resources. The field surveys did not reveal a significant intact historical resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical resource. With implementation of Mitigation Measure 3.5-1, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURES

Mitigation Measure 3.5-1: *A trained archaeologist shall be retained to monitor all excavation work within 200 feet of Bear Creek. Additionally, a Native American inspector shall be present during ground disturbance activities. If any cultural or tribal resources, including prehistoric or historic artifacts, or other indications of archaeological resources are found during grading and construction activities in the monitored zone or in any portion of the property, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*

3.5 CULTURAL AND TRIBAL RESOURCES

Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.

If Native American and/or tribal resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.5-1 requires specific steps to be taken to monitor activities within 200 feet of Bear Creek, as well as steps to follow should a cultural or tribal resource be found on-site. With implementation of Mitigation Measure 3.5-1, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in a substantial adverse change to a significant historical resource. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres.

The With Bridge Alternative would result in the conversion of the undeveloped land from agricultural uses. As noted above, the Project site is located in an area known to have historical resources. The field surveys did not reveal a significant intact historical resource or site on the Project site. However, similar to the proposed Project, there is the potential for discovery of a previously unknown historical resource. Implementation of Mitigation Measure 3.5-1 would also be required for the With Bridge Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

The General Plan 2035 Alternative would result in the conversion of the undeveloped land from agricultural uses. As noted above, the Project site is located in an area known to have historical resources. The field surveys did not reveal a significant intact historical resource or site on the Project site. However, similar to the proposed Project, there is the potential for discovery of a previously unknown historical resource. Implementation of Mitigation Measure 3.5-1 would also be required for the General Plan 2035 Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

The Reduced Project Alternative would result in the conversion of undeveloped land from agricultural uses to urban uses. However, approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative. Nevertheless, as noted above, the Project site is located in an area known to have historical resources. The field surveys did not reveal a significant intact historical resource or site on the Project site. However, similar to the proposed Project, there is the potential for discovery of a previously unknown historical resource. Implementation of Mitigation Measure 3.5-1 would also be required for the Reduced Project Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall

Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

The Reduced Intensity/Density Alternative would result in the conversion of undeveloped land from agricultural uses to urban uses. As noted above, the Project site is located in an area known to have historical resources. The field surveys did not reveal a significant intact historical resource or site on the Project site. However, similar to the proposed Project, there is the potential for discovery of a previously unknown historical resource. Implementation of Mitigation Measure 3.5-1 would also be required for the Reduced Intensity/Density Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5. (Less than Significant with Mitigation)

Proposed Project:

The Project site is located in an area known to have cultural resources. The field surveys did not reveal a significant intact archeological resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural resource or human remains. With implementation of Mitigation Measure 3.5-1, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURES

*Implement **Mitigation Measure 3.5-1***

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.5-1 requires specific steps to be taken to monitor activities within 200 feet of Bear Creek, as well as steps to follow should a cultural or tribal resource be found on-site. With implementation of Mitigation Measure 3.5-1, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in a substantial adverse change to a significant archaeological resource. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. As noted above, the Project site is located in an area known to have cultural resources. The field surveys did not reveal a significant intact archeological resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural resource or human remains. Implementation of Mitigation Measure 3.5-1 would also be required for the With Bridge Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. As noted above, the Project site is located in an area known to have cultural resources. The field surveys did not reveal a significant intact archeological resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural resource or human remains. Implementation of Mitigation Measure 3.5-1 would also be required for the General Plan 2035 Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

3.5 CULTURAL AND TRIBAL RESOURCES

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

Under this alternative, the Project site would be developed with residential uses. However, approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative. Nevertheless, as noted above, the Project site is located in an area known to have cultural resources. The field surveys did not reveal a significant intact archeological resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural resource or human remains. Implementation of Mitigation Measure 3.5-1 would also be required for the Reduced Project Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Under this alternative, the Project site would be developed with residential uses. As noted above, the Project site is located in an area known to have cultural resources. The field surveys did not reveal a significant intact archeological resource or site on the Project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural resource or human remains. Implementation of Mitigation Measure 3.5-1 would also be required for the Reduced Intensity/Density Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource. (Less than Significant with Mitigation)

Proposed Project:

The field surveys did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. With implementation of

Mitigation Measure 3.5-2, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURES

Mitigation Measure 3.5-2: *If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Stockton shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.5-2 includes steps to follow should a paleontological resource be found on-site. With implementation of Mitigation Measure 3.5-2, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not directly or indirectly destroy unique paleontological resources. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

As noted above, the field surveys did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the With Bridge Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

As noted above, the field surveys did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological

resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the General Plan 2035 Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

As noted above, the field surveys did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the Reduced Project Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted above, the field surveys did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the Reduced Intensity/Density Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

Proposed Project:

Research indicates that humans have occupied San Joaquin County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being “any evidence of human activity.” Additionally, PRC Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during Project implementation.

Human remains were found during site grading activities, but nothing else was found during the extensive trenching of the Project site. Implementation of the following mitigation measure would ensure that all construction activities that inadvertently discover human remains implement State-required consultation methods to determine the disposition and historical significance of any discovered human remains.

MITIGATION MEASURES

Mitigation Measure 3.5-3: *If human remains are discovered during the course of construction, work shall be halted at the site and any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
 - *The Native American Heritage Commission is unable to identify a descendent.*
 - *The descendant identified fails to make a recommendation.*
 - *The City of Stockton or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.5-3 includes steps to follow should human remains be found on-site. With implementation of Mitigation Measure 3.5-3, the proposed Project would have a **less than significant** impact relative to this topic.

3.5 CULTURAL AND TRIBAL RESOURCES

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not have the potential to disturb human remains, including those interred outside of formal cemeteries. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

As noted above, human remains were found during the site grading activities, but nothing else was found during the extensive trenching of the Project site. Implementation of Mitigation Measure 3.5-3 would also be required for the With Bridge Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

As noted above, human remains were found during the site grading activities, but nothing else was found during the extensive trenching of the Project site. Implementation of Mitigation Measure 3.5-3 would also be required for the General Plan 2035 Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

As noted above, human remains were found during the site grading activities, but nothing else was found during the extensive trenching of the Project site. Implementation of Mitigation Measure 3.5-3 would also be required for the Reduced Project Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the

Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted above, human remains were found during the site grading activities, but nothing else was found during the extensive trenching of the Project site. Implementation of Mitigation Measure 3.5-3 would also be required for the Reduced Intensity/Density Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.5-5: Project implementation has the potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074. (Less than Significant with Mitigation)

Proposed Project:

The field surveys did not reveal any surface evidence of tribal cultural resources on the Project site. The Project site is not expected to contain tribal cultural resources, although it is possible. In accordance with AB 52, the City of Stockton contacted the Wilton Rancheria Tribe and provided information regarding the proposed Project. The City requested that the tribes supply any information they might have concerning prehistoric sites or traditional use areas within the project site. On July 26, 2017, the Wilton Rancheria Tribe responded to the City's consultation letter and stated that they have a cultural interest and authority in the proposed Project area. The letter did not indicate whether or not any known cultural resources are located near the Project site. However, the letter did indicate that a Native American Inspector should be present during ground disturbance.

Damage to or destruction of a tribal cultural resource would be considered a potentially significant impact under local, state, or federal criteria. With implementation of Mitigation Measures 3.5-1 and 3.5-3, the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURES

*Implement **Mitigation Measures 3.5-1 and 3.5-3***

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measures 3.5-1 and 3.5-3, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not directly or indirectly destroy a tribal cultural resource. As such, **no impact** would occur, and no

3.5 CULTURAL AND TRIBAL RESOURCES

mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

As noted above, the field surveys did not reveal any surface evidence of tribal cultural resources on the Project site. The Project site is not expected to contain subsurface tribal cultural resources, although it is possible. Damage to or destruction of a tribal cultural resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the With Bridge Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

As noted above, the field surveys did not reveal any surface evidence of tribal cultural resources on the Project site. The Project site is not expected to contain subsurface tribal cultural resources, although it is possible. Damage to or destruction of a tribal cultural resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the General Plan 2035 Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

As noted above, the field surveys did not reveal any surface evidence of tribal cultural resources on the Project site. The Project site is not expected to contain subsurface tribal cultural resources, although it is possible. Damage to or destruction of a tribal cultural resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the Reduced Project Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the

Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted above, the field surveys did not reveal any surface evidence of tribal cultural resources on the Project site. The Project site is not expected to contain subsurface tribal cultural resources, although it is possible. Damage to or destruction of a tribal cultural resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-2 would also be required for the Reduced Intensity/Density Alternative to ensure a **less than significant** impact occurs. Compared to the proposed Project, this alternative is equal relative to this topic.

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3.6.1 INTRODUCTION

The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the Project site and regional vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based in part on the following: *Stockton General Plan 2035* (City of Stockton, 2007), *Stockton General Plan 2035 Environmental Impact Report* (City of Stockton, 2007), the *Soils Survey of San Joaquin County, California* (USDA, 1992), the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2013), and the Interactive Fault Map provided by the U.S. Geological Survey (USGS, 2015). There were no comments received during the NOP scoping process related to this environmental topic.

The proposed Project would connect to the municipal sewer system for wastewater disposal. Septic tanks or septic systems are not proposed as part of the Project. Additionally, there are no significant deposits of mineral resources located on the Project site, as delineated by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP). The Project site is not designated as a Mineral Resource Zone (MRZ). As such, these CEQA topics will not be further discussed.

3.6.2 ENVIRONMENTAL SETTING

GEOLOGIC SETTING

Regional Geology

The Project site lies in the San Joaquin Valley in central California. The San Joaquin Valley is located in the southern portion of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley, is a topographically flat, northwest-trending, structural trough (or basin) about 50 miles wide and 450 miles long. It is bordered by the Tehachapi Mountains on the south, the Klamath Mountains on the north, the Sierra Nevada on the east, and the Coast Ranges on the west.

The San Joaquin Valley (Valley) is filled with thick sedimentary rock sequences that were deposited as much as 130 million years ago. Large alluvial fans have developed on each side of the Valley. The larger and more gently sloping fans are on the east side of the Valley, and overlie metamorphic and igneous basement rocks. These basement rocks are exposed in the Sierra Nevada foothills and consist of meta-sedimentary, volcanic, and granitic rocks.

Local Setting

The Project site has relatively flat terrain that varies between elevations from approximately 25 to 35 feet above sea level. Figure 2-3 in Section 2.0 shows the topographic view of the Project site. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. An irrigation catch pond runs along the northern boundary of the Project site. Power transmission lines are located along West Lane and Eight Mile

3.6 GEOLOGY AND SOILS

Road. Additionally, power lines are present within the Project site running north and south roughly bisecting the Project site.

A Custom Soil Survey was obtained for the Project site by De Novo Planning Group (2017) using the NRCS Web Soil Survey program. The NRCS Soils Map is provided in Figure 3.2-2 in Section 3.2 Agricultural Resources. Table 3.6-1 identifies the type and range of soils found in the Project site.

TABLE 3.6-1: PROJECT SITE SOILS

UNIT SYMBOL	NAME	ACRES IN AOI	PERCENT OF AOI
180	Jacktone clay	231.08	72.48%
250	Stockton clay	77.70	24.37%

SOURCE: NRCS WEB SOIL SURVEY 2016.

Jacktone clay. This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are moderately deep to a hardpan. Slopes range from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow.

Stockton clay. This series consists of somewhat poorly drained soils in basins. These soils are artificially drained and are deep to a hardpan. Stockton clay is formed in alluvium derived from mixed rock sources. Slope ranges from 0 to 2 percent. This series is characterized as poorly drained, slow runoff, high shrink/swell potential, and permeability is slow.

FAULTS AND SEISMICITY

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.6-2 presents the California fault activity rating system.

TABLE 3.6-2: FAULT ACTIVITY RATING

<i>FAULT ACTIVITY RATING</i>	<i>GEOLOGIC PERIOD OF LAST RUPTURE</i>	<i>TIME INTERVAL (YEARS)</i>
Active (A)	Holocene	Within last 11,000 years
Potentially Active (PA)	Quaternary	11,000 to 1.6 million years
Inactive (I)	Pre-Quaternary	Greater than 1.6 million years

SOURCE: CALIFORNIA GEOLOGICAL SURVEY.

The Interactive Fault Map provided by the USGS identifies potential seismic sources within 24 miles of the Project site. Two of the closest known faults classified as active by the California Geological Survey are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west. The nearest Alquist-Priolo Fault Zone (see Regulatory Setting), the Greenville Fault, is located approximately 29 miles to the southwest of the site. Figure 3.6-1 provides a map of known area faults.

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.6-3 provides a description and a comparison of intensity and magnitude.

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, San Joaquin County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors the California Geological Survey (CGS) has defined the entire county as a seismic hazard zone. The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

TABLE 3.6-3: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

<i>RICHTER MAGNITUDE</i>	<i>MODIFIED MERCALLI SCALE</i>	<i>EFFECTS OF INTENSITY</i>
0.1 – 0.9	I	Earthquake shaking not felt.
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awoken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Alquist-Priolo Special Study Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The CGS evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site. The Project site is not within an Alquist-Priolo Special Study Zone.

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking in California is expected. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural

improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking in the Project site is expected during the life of the proposed Project. All structures will be built in accordance with the California Building Code's seismic design standards.

Fault Rupture

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. The Project site does not have surface expression of active faults and fault rupture is not anticipated.

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Soil data from the NRCS Web Soil Survey (NRCS, 2015) suggests that the potential for liquefaction is low given that the soils are clayey and the water table is approximately 35 to 40 feet below the ground surface.

The City of Stockton General Plan Draft EIR has indicated that "the probability of liquefaction actually taking place in the Study Area is considered to be a low to moderate hazard, due to the substantial distance from the active Hayward and Calaveras Fault zones and the type of ground shaking expected from those faults." The General Plan Draft EIR indicates that with adherence to existing codes and regulations and implementation of the policies and implementation measures contained in the Health & Safety Element of the General Plan, the potentially significant impact would be reduced to a less than significant impact.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Since the potential for liquefaction is low to moderate, the potential for lateral spreading is present. The General Plan Draft EIR indicates that with adherence to existing codes and regulations and implementation of the policies and implementation measures contained in the Health & Safety Element of the General Plan, the potentially significant impact would be reduced to a less than significant impact.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for

landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e., cut and fill). The Project site is essentially flat; therefore, the potential for a landslide in the Project site is non-existent.

NON-SEISMIC HAZARDS

Expansive Soils

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering.

According to the NRCS Web Soil Survey, the soils in the Project site have a high shrink-swell potential. The NRCS Web Soil Survey indicated that near surface soils within the Project site have medium plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-2 provides a map of the shrink-swell potential of the soils at the Project site and in the vicinity.

Erosion

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

The NRCS Web Soil Survey identified the erosion potential for the soils in the Project site. The survey summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factors (Kf) for the surface horizon, erosion factor (T), and the representative percentage of sand, silt, and clay in the surface horizon.

Erosion factor (K) indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Project site, the erosion factor (Kf) of both soils is 0.20, which is considered a low potential for erosion. Furthermore, because the project site is essentially flat, the erosion potential is slight.

Collapsible Soils

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Soils prone to collapse are commonly associated with manmade fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. During an earthquake, even slight settlement of fill materials can lead to a differentially settled structure and significant repair costs. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Stockton General Plan as an issue in the Stockton area. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Subsidence has been identified in the Stockton General Plan as an issue in the Stockton area given the location near the Delta. Additionally, clayey soils, such as Jacktane clay and Stockton clay, are not prone to subsidence.

3.6.3 REGULATORY SETTING

FEDERAL

Uniform Building Code (UBC)

The purpose of the Uniform Building Code (UBC) is to provide minimum standards to preserve the public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. UBC standards address foundation design, shear wall strength, and other structurally related conditions.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE, 2002).

STATE

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Code, the Alquist-Priolo Earthquake Fault Zoning Act, and the Seismic Hazards Mapping Act.

California Building Standards Code

Title 24 of the California Code of Regulations, known as the California Building Standards Code (CBSC) or just "Title 24," contains the regulations that govern the construction of buildings in California. The CBSC includes 12 parts including: California Building Standards Administrative Code, California Building Code, California Residential Building Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Historical Building Code, California Fire Code, California Existing Building Code, California Green Building Standards Code (CALGreen Code), California Reference Standards Code. Through the CBSC, the state provides a minimum standard for building design and construction. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

California Building Code

The California Building Code, Title 24, Part 2, Chapter 16 addresses structural design, Chapter 17 addresses structural tests and special inspections, and Chapter 18 addresses soils and foundations. Section 1610 provides structural design standards for foundation walls and retaining walls to ensure resistance to lateral soil loads. Section 1613 provides structural design standards for earthquake loads. Section 1704.7 requires special inspections for existing site soil conditions, fill placement and load-bearing requirements during the construction as specified in Table 1704.7 of this section. Sections 1704.8 through 1704.16 provide inspection and testing requirements for various foundation types, and construction material types. Section 1803.1.1.1 requires each city and county enact an ordinance which requires a preliminary soil report and that the report be based upon adequate test borings or excavations, of every subdivision, where a tentative and final map is required pursuant to Section 66426 of the Government Code. Section 1803.5.3 defines expansive soils and specifies that in areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Section 1803.5.4 specifies that a subsurface soil investigation must be performed to determine whether the existing ground-water table is above or within 5 feet (1524 millimeters [mm]) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. Section 1803.5.8 provides specific standards where shallow foundations will bear on compacted fill material more than 12 inches (305 mm) in depth. Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Section 1804 provides standards and requirements for excavation, grading, and fill. Section 1808, 1809, and 1810 provides standards and requirements for the construction of varying foundations.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and Criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

- Cities and Counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides

guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.

- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

LOCAL

City of Stockton General Plan

The following goal and policies of the Stockton General Plan related to geology and soils are applicable to the proposed Project.

Health & Safety Element

GENERAL HEALTH AND SAFETY GOAL

- HS-1. To protect the community from injury and damage resulting from natural catastrophes and hazardous conditions.

GENERAL HEALTH AND SAFETY POLICY

- HS-1.1. Development Constraints. The City shall permit development only in areas where the potential danger to the health and safety of people can be mitigated to an acceptable level.

GEOLOGIC AND SEISMIC HAZARDS GOAL

- HS-3. To protect the community from the hazards of expansive soils, seismic dangers, including threats from liquefaction potential of soils, and other geologic activity.

GEOLOGIC AND SEISMIC HAZARDS POLICIES

- HS-3.1. Seismic Safety of Structures and Public Facilities. The City shall require that new structures intended for human occupancy, public facilities (i.e., treatment plants and pumping stations, major communication lines, evacuation routes, etc.), and emergency/disaster facilities (i.e., police and fire stations, etc.) are designed and constructed to minimize risk to the safety of people due to ground shaking.
- HS-3.2. Development in Areas Subject to Geologic Hazards. The City shall require all proposed developments, reconstruction, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed to mitigate the risk associated with the hazard (e.g., expansive soils, liquefaction, etc.).
- HS-3.4. Uniform Building Code. The City shall require that alterations to existing buildings and all new buildings be built according to the seismic requirements of the Uniform Building Code.
- HS-3.6. Development within the Primary Zone of the Delta. The City shall continue to support the State policy restricting development within the primary zone of the Delta due to soil limitations and other hazards (e.g., liquefaction, subsidence, shrink-swell potential).

- HS-3.8. Alquist-Priolo Act Compliance. The City shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones (pursuant to and as determined by the Alquist-Priolo Earthquake Fault Zoning Act; Public Resources Code, Chapter 7.5) unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.

3.6.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on geology and soils if it will:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil;
- 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; or
- 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 does not include septic tanks or alternative wastewater disposal. As such, this EIR does not specifically address whether soils would be capable of adequately supporting the use of septic tanks or alternative waste water disposal systems. This topic has been excluded from the following analysis.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.6-1: The proposed Project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure. (Less than Significant)

Proposed Project:

The CGS evaluates faults and determines if a fault should be zoned as active, potentially active, or inactive. All active faults are incorporated into a Special Studies Zone, also referred to as an Alquist-Priolo Special Study Zone. The Project site is not within an Alquist-Priolo Special Study Zone.

The Interactive Fault Map provided by the USGS identified potential seismic sources within 24 miles of the Project site. Two of the closest known faults classified as active by the California Geological Survey are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west. The nearest Alquist-Priolo Fault Zone, the Greenville Fault, is located approximately 29 miles to the southwest of the site. Other faults that could potentially affect the proposed Project include the Midway Fault, Black Butte Fault, Corral Hollow Fault, and Vacaville Fault Zone. Figure 3.6-1 provides a map of known area faults.

According to the Stockton General Plan EIR, the magnitude of the maximum probable earthquake on the Greenville Fault is estimated to be 6.0; however, the largest historic earthquake on the Greenville Fault was a Richter magnitude 5.8 earthquake that occurred in 1980. That earthquake produced a peak ground acceleration of 0.15 gravity (g) in Brentwood, approximately 30 miles west of the Stockton Planning Area. Other nearby faults to the Planning Area exhibiting historic displacement (activity within the last 200 years) are the Concord-Green Valley and Hayward faults located approximately 35 miles west-northwest and 50 miles west of the Planning Area, respectively. Portions of the Calaveras fault zone also have been rated as being active within the last 200 years and those portions are located approximately 40 miles southwest of the Planning Area.

The nearest Quaternary fault (2 million years ago to present) to the Stockton Planning Area showing evidence of activity within the past 1.6 million years is the San Joaquin Fault located approximately 12 miles southwest of the Planning Area. The nearest mapped fault trace, the Stockton Fault, is not considered an active fault. The California Department of Mines and Geology (CDMG) has determined the probability of earthquake occurrences and their associated peak ground accelerations throughout the State of California. According to the CDMG probabilistic seismic hazard map for California, peak ground accelerations in the Stockton Planning Area could range from 0.20 g to 0.30 g. The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be

designed in accordance with the latest seismic design standards of the California Building Code. As discussed under Section 3.6.2 Regulatory Setting, the California Building Code, Title 24, Part 2, Chapter 16 addresses structural design and Chapter 18 addresses soils and foundations. Collectively, these State requirements include design standards and requirements that are intended to minimize impacts to structures in seismically active areas of California. Section 1613 specifically provides structural design standards for earthquake loads. Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Additionally, the City of Stockton has adopted Uniform Building Code and incorporated numerous policies relative to seismicity to ensure the health and safety of all its people. Because all development in the Project site must be designed in conformance with these state and local standards and policies, any potential impact would be considered **less than significant**.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area.

The With Bridge Alternative would result in the conversion of the undeveloped land from agricultural uses, which would introduce people and structures to the area. As noted above, the Project site is not within an Alquist-Priolo Special Study Zone, and the nearest Alquist-Priolo Fault Zone, the Greenville Fault, is located approximately 29 miles to the southwest. Two of the closest known faults classified as active by the CGS are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. Similar to the proposed Project, development of the With Bridge Alternative would be subject to the requirements of the California

3.6 GEOLOGY AND SOILS

Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, this is a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

The General Plan 2035 Alternative would result in the conversion of the undeveloped land from agricultural uses, which would introduce people and structures to the area. As noted above, the Project site is not within an Alquist-Priolo Special Study Zone, and the nearest Alquist-Priolo Fault Zone, the Greenville Fault, is located approximately 29 miles to the southwest. Two of the closest known faults classified as active by the CGS are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. Similar to the proposed Project, development of the General Plan 2035 Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, this is a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

The Reduced Project Alternative would result in the conversion of the undeveloped land from agricultural uses, which would introduce people and structures to the area. As noted above, the Project site is not within an Alquist-Priolo Special Study Zone, and the nearest Alquist-Priolo Fault

Zone, the Greenville Fault, is located approximately 29 miles to the southwest. Two of the closest known faults classified as active by the CGS are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. Similar to the proposed Project, development of the Reduced Project Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, this is a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

The Reduced Intensity/Density Alternative would result in the conversion of the undeveloped land from agricultural uses, which would introduce people and structures to the area. As noted above, the Project site is not within an Alquist-Priolo Special Study Zone, and the nearest Alquist-Priolo Fault Zone, the Greenville Fault, is located approximately 29 miles to the southwest. Two of the closest known faults classified as active by the CGS are the Foothills Fault, located approximately 24 miles to the east, and the Antioch Fault, located approximately 27 miles to the west.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, this is a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil. (Less than Significant)

Proposed Project:

According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion and the loss of topsoil is one of the most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, storm water runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges which adversely affect the quality of our nation's waters. The program uses the NPDES permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), which states:

"...Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded..."

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

"Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is

required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed...Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions...All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough documentation and timely repair is necessary to ensure that all measures are functioning as intended..."

To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce erosion and sediments to meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the Regional Water Quality Control Board (RWQCB) and/or the lead agency.

The NRCS Web Soil Survey identified the erosion potential for the soils in the Project site. The survey summarizes those soil attributes used by the RUSLE2 for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.¹ Within the Project site, the erosion factor Kf of both soils is 0.20, which is considered a low potential for erosion. Furthermore, because the Project site is essentially flat, the erosion potential is slight.

Regardless of the potential for erosion, there is always the potential for human caused erosion associated with construction activities or through the operational phase of a project. Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities temporarily expose soils and increase the potential for soil erosion and sedimentation during rail events. Construction activities can also result in soil compaction and wind erosion effects that can adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

¹ USDA/NRCS Soil Survey, 2017.

3.6 GEOLOGY AND SOILS

In accordance with the NPDES Stormwater Program, the Project applicant would be required to submit an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are existing regulatory requirements. Because all development in the Project site must be designed in conformance with these state and local standards and policies, any potential impact would be considered **less than significant**.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in substantial soil erosion or the loss of topsoil. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. In addition, as noted above, the erosion factor Kf of both soils is 0.20, which is considered a low potential for erosion. This alternative would be required to submit a NOI and SWPPP to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity in order to ensure soil erosion and loss of topsoil is minimized. Under this alternative, conformance with existing state and local standards and policies would ensure impacts associated with soil erosion and loss of topsoil are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. Under this alternative, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. In addition, as noted

above, the erosion factor Kf of both soils is 0.20, which is considered a low potential for erosion. This alternative would be required to submit a NOI and SWPPP to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity in order to ensure soil erosion and loss of topsoil is minimized. Under this alternative, conformance with existing state and local standards and policies would ensure impacts associated with soil erosion and loss of topsoil are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses. Because less acreage would be disturbed by the Reduced Project Alternative, the amount of potential soil erosion or loss of topsoil would be proportionately reduced. As noted above, the erosion factor Kf of both soils is 0.20, which is considered a low potential for erosion. This alternative would be required to submit a NOI and SWPPP to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity in order to ensure soil erosion and loss of topsoil is minimized. Under this alternative, conformance with existing state and local standards and policies would ensure impacts associated with soil erosion and loss of topsoil are **less than significant**. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Although the Reduced Intensity/Density Alternative would reduce the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. As noted above, the erosion factor Kf of both soils is 0.20, which is considered a low potential for erosion. This alternative would be required to submit a NOI and SWPPP to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity in order to ensure soil erosion and loss of topsoil is minimized. Under this alternative, conformance with existing state and local standards and policies would ensure impacts associated with soil erosion and loss of topsoil are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.6-3: The proposed Project may be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant)

Proposed Project:

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, and uniformly graded, fine-grained sands. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Soil data from the NRCS Web Soil Survey (NRCS, 2015) suggests that the potential for liquefaction is low given that the soils are clayey and the water table is approximately 35 to 40 feet below the ground surface.

The City of Stockton General Plan Draft EIR has indicated that “the probability of soil liquefaction actually taking place in the Study Area is considered to be a low to moderate hazard, due to the substantial distance from the active Hayward and Calaveras Fault zones and the type of ground shaking expected from those faults.” The General Plan Draft EIR indicates that with adherence to existing codes and regulations and implementation of the policies and implementation measures contained in the Health & Safety Element of the General Plan, the impact would be reduced to a less than significant level.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is also directly associated with areas of liquefaction. Since the potential for liquefaction is low to moderate, the potential for lateral spreading is present. The General Plan Draft EIR indicates that with adherence to existing codes and regulations and implementation of the policies and implementation measures contained in the Health & Safety Element of the General Plan, the impact would be reduced to a less than significant level.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The Project site is essentially flat; therefore, the potential for a landslide in the Project site is non-existent.

Collapsible Soils

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Differential settlement of structures typically occurs when

heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Stockton General Plan as an issue in the Stockton area. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present. The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the 2035 General Plan Health & Safety Element, the impacts relating to collapsible soils would be reduced to a less than significant level.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Subsidence has been identified in the Stockton General Plan as an issue in the Stockton area given the location near the Delta. The Project site is not located near the Delta. The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the 2035 General Plan Health & Safety Element, the potentially significant impacts relating to subsidence would be reduced to a less than significant impact. Additionally, clayey soils, such as Jacktone clay and Stockton clay, are not prone to subsidence.

Conclusion

The Project site does not have a significant risk of becoming unstable as a result landslide, subsidence, or soil collapse. However, the on-site soils are clayey and are subject to slow permeability and low strength limitations for development. Construction of homes and other structures will require properly designed foundations and footings, and runoff will need to be diverted away from buildings to minimize shrink-swell effects. The Project applicant would be required to submit a final geotechnical evaluation of the on-site soils at a design level, as required by the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to shrink-swell, slow permeability, low strength limitations, and other soil conditions. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction or subsidence. The grading and improvement plans, as well as the storm drainage outfall and building plans, would be designed in accordance with the recommendations provided in the final geotechnical evaluation. Through compliance with existing regulatory requirements, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in landsliding, lateral spreading, subsidence, liquefaction or collapse. As such, **no impact**

would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

As noted above, the on-site soils are clayey and are subject to slow permeability and low strength limitations for development. The potential for liquefaction is low given that the soils are clayey and the water table is approximately 35 to 40 feet below the ground surface. Additionally, since the potential for liquefaction is low to moderate, the potential for lateral spreading and collapsible soil conditions is present. Because the site is essentially flat, the potential for landslides in the Project site is very low. Furthermore, clayey soils, such as Jacktone clay and Stockton clay, are not prone to subsidence.

Construction of homes and other structures under the With Bridge Alternative will require properly designed foundations and footings, and runoff will need to be diverted away from buildings to minimize shrink-swell effects. This alternative would also be required to submit a final geotechnical evaluation of the on-site soils at a design level, as required by the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to shrink-swell, slow permeability, low strength limitations, and other soil conditions. Under this alternative, impacts associated with unstable soils would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As such, the same soils, soil conditions, and potential stability issues exist under this alternative.

Construction of homes and other structures under the General Plan 2035 Alternative will require properly designed foundations and footings, and runoff will need to be diverted away from buildings to minimize shrink-swell effects. This alternative would also be required to submit a final geotechnical evaluation of the on-site soils at a design level, as required by the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to shrink-swell, slow permeability, low strength limitations, and other soil conditions. Under this alternative, impacts associated with unstable soils would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and

proposed commercial uses. The same soils, soil conditions, and potential stability issues exist under this alternative.

Construction of homes and other structures under the Reduced Project Alternative will require properly designed foundations and footings, and runoff will need to be diverted away from buildings to minimize shrink-swell effects. This alternative would also be required to submit a final geotechnical evaluation of the on-site soils at a design level, as required by the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to shrink-swell, slow permeability, low strength limitations, and other soil conditions. Under this alternative, impacts associated with unstable soils would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. The same soils, soil conditions, and potential stability issues exist under this alternative.

Construction of homes and other structures under the Reduced Intensity/Density Alternative will require properly designed foundations and footings, and runoff will need to be diverted away from buildings to minimize shrink-swell effects. This alternative would also be required to submit a final geotechnical evaluation of the on-site soils at a design level, as required by the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to shrink-swell, slow permeability, low strength limitations, and other soil conditions. Under this alternative, impacts associated with unstable soils would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.6-4: The proposed Project may be located on expansive soil, creating substantial risks to life or property . (Less than Significant)

Proposed Project:

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of certain varieties of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

According to the NRCS Web Soil Survey, the soils in the Project site have a high shrink-swell potential. The NRCS Web Soil Survey indicated that near surface soils within the Project site have medium plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-2 provides a map of the shrink-swell potential of the soils at the

Project site and in the vicinity. As shown in the figure, the on-site soils have a high shrink-swell potential.

The California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 requires specific geotechnical evaluation when a preliminary geotechnical evaluation determines that expansive or other special soil conditions are present, which, if not corrected, would lead to structural defects. The City of Stockton also requires all proposed developments, reconstruction, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed to mitigate the risk associated with the hazard (e.g., expansive soils, liquefaction, etc.). A final geotechnical evaluation would be required in accordance with the standards and requirements outlined in the California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage outfall and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Through compliance with the requirements included in the California Building Code, Title 24, the proposed Project would have a ***less than significant*** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not create substantial risks to life or property related to expansive soils. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As such, the potential issues associated with expansive soils identified for the Project site exist under this alternative.

As noted above, the soils in the Project site have a high shrink-swell potential. Without a design-level geotechnical evaluation, the presence of unstable soils is a potentially significant impact. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage outfall and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Similar to the proposed Project, development of the With Bridge Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, compliance with the requirements included in the California Building Code, Title 24, would ensure

impacts associated with expansive soils are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As such, the potential issues associated with expansive soils identified for the Project site exist under this alternative.

As noted above, the soils in the Project site have a high shrink-swell potential. Without a design-level geotechnical evaluation, the presence of unstable soils is a potentially significant impact. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage outfall and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Similar to the proposed Project, development of the General Plan 2035 Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, compliance with the requirements included in the California Building Code, Title 24, would ensure impacts associated with expansive soils are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

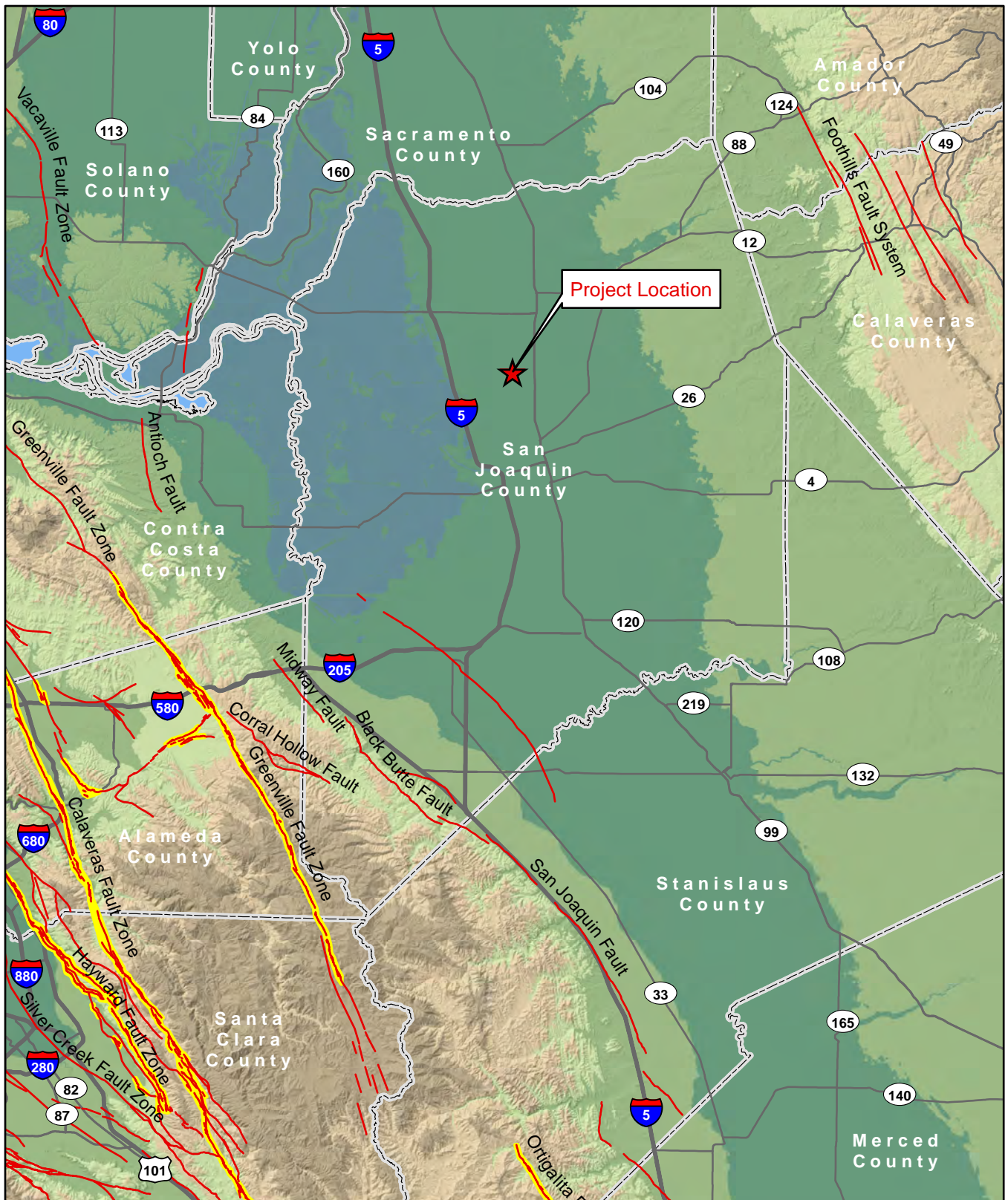
Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses. As such, the potential issues associated with expansive soils identified for the Project site exist under this alternative.

As noted above, the soils in the Project site have a high shrink-swell potential. Without a design-level geotechnical evaluation, the presence of unstable soils is a potentially significant impact. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage outfall and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Similar to the proposed Project, development of the Reduced Project Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, compliance with the requirements included in the California Building Code, Title 24, would ensure impacts associated with expansive soils are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. As such, the potential issues associated with expansive soils identified for the Project site exist under this alternative.

As noted above, the soils in the Project site have a high shrink-swell potential. Without a design-level geotechnical evaluation, the presence of unstable soils is a potentially significant impact. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage outfall and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the California Building Code, Stockton General Plan, and the Stockton Municipal Code in order to ensure quality design of the Project site. Under this alternative, compliance with the requirements included in the California Building Code, Title 24, would ensure impacts associated with expansive soils are **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.



TRA VIGNE

Legend

- Quaternary Faults
- Alquist-Priolo Fault Zones

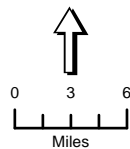
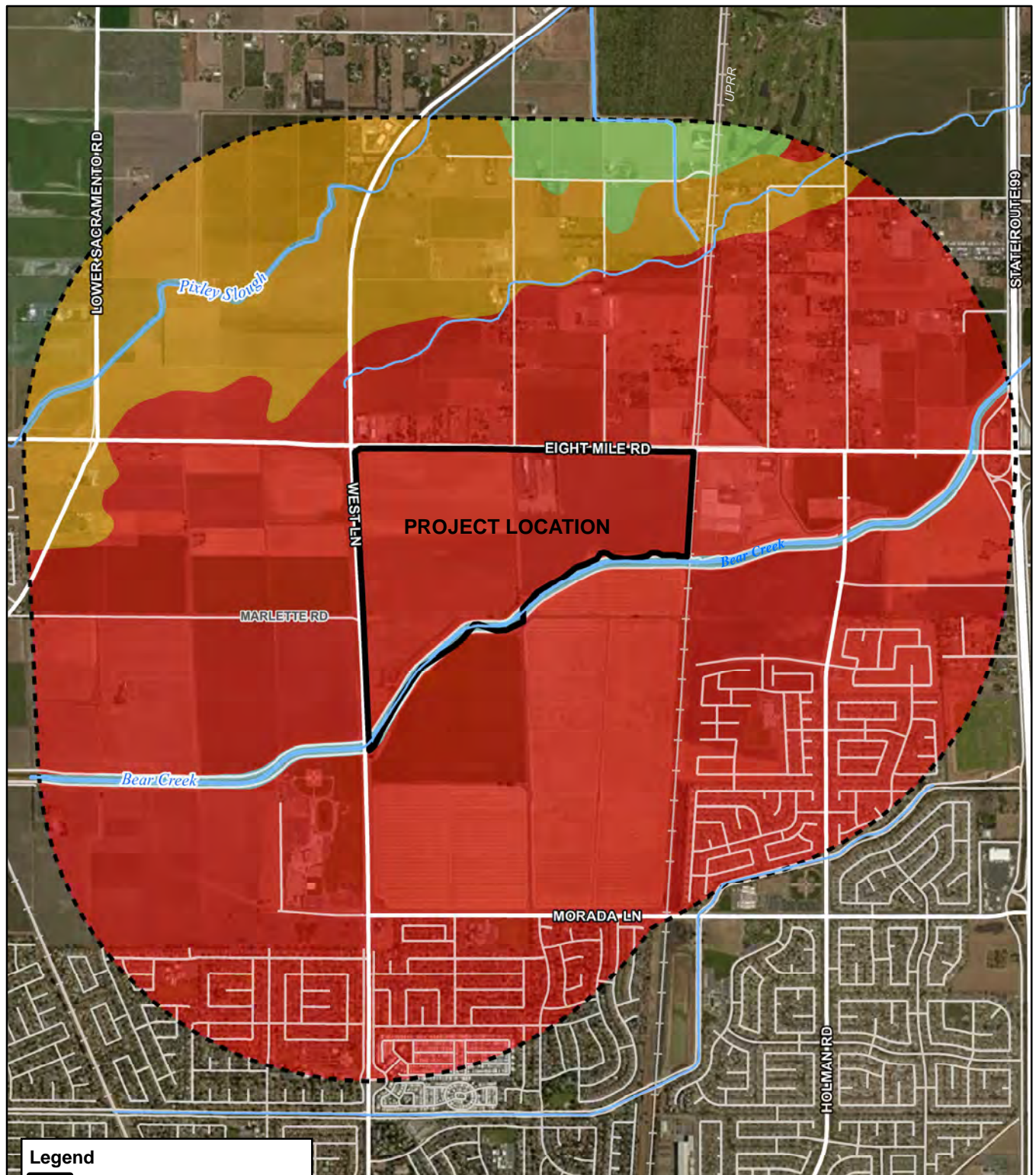


Figure 3.6-1: Known Faults in Project Area

Data sources: US Geological Survey; San Joaquin County GIS.
Map date: March 8, 2016.

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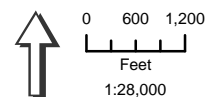


Legend

- Project Boundary
- 1-mile Buffer of Project Boundary
- Shrink-Swell Potential of Soils**
- Low - linear extensibility <3%
- Moderate - linear extensibility 3-6%
- High - linear extensibility 6-9%
- Water

TRA VIGNE

Figure 3.6-2: Expansive Soils Map



Data sources: USDA National Resource Conservation Service, San Joaquin County CA (CA 077), Survey Area: Version 9, Sep 22, 2015; Tabular: Version 8, Sep 22, 2015; Spatial: Version 2, Nov 25, 2013; San Joaquin County GIS; ArcGIS Online Imagery Service. Map date: May 18, 2016.

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3.7.1 INTRODUCTION

This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed Project. The analysis contained in this section is intended to be at a project-level, and covers impacts associated with the conversion of the entire site to urban uses. This section provides a background discussion of GHGs and climate change linkages and effects of global climate change. The analysis and discussion of the GHG and climate change impacts in this section focuses on the proposed Project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed Project. Technical air quality and GHG modeling for the Project was completed by De Novo Planning Group in March 2018. The results of the modeling are included as Appendix B of this Draft EIR.

3.7.2 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring GHGs include water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Although direct GHGs, including CO₂, CH₄, and N₂O, occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three GHGs have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2016).

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 441 million gross metric tons of carbon dioxide equivalents (MMTCO₂e) in 2014 (California Energy Commission, 2016). By 2020, estimated business-as-usual greenhouse gas emissions in California are projected to be 509 MMTCO₂e per year (California Air Resources Board, 2015). Given that the U.S. EPA estimates that worldwide emissions from human activities totaled nearly 46 billion gross metric tons of carbon dioxide equivalents (BMTCO₂e) in 2010, California's incremental contribution to global GHGs is approximately 2% (U.S. EPA, 2014).

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2014, accounting for 37% of total GHG emissions in the state. This category was followed by the industrial sector (24%), the electricity generation sector (including both in-state and out of-state sources) (20%) and the agriculture sector (8%) (California Energy Commission, 2016).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (Cal EPA 2006). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (Cal EPA 2006).

If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA, 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (Cal EPA 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation, thereby resulting in a possible increased risk of large wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy in California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable source of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 50 percent by 2030.

Overall, in 2013, California ranked as the third-most energy efficient state in the nation (U.S. EIA, 2016). California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012). In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas/Propane

The State of California produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012).

CITY OF STOCKTON COMMUNITY-WIDE GHG INVENTORIES

The City of Stockton developed community-wide GHG inventories in their City of Stockton Climate Action Plan (2014). Community-wide GHG inventories were developed for baseline year 2005, 1990 (backcasted), and a business-as-usual year 2020 (forecasted). These inventories are provided in Table 3.7-1 below.

The 2005 inventory includes GHG emissions that are either under the jurisdiction of the City of Stockton or that occur in association with the land uses within the City of Stockton limits. The 2005 inventory represents the baseline inventory, or the existing emissions level for CAP analysis purposes. The 2020 emissions projection is a prediction of how community emissions may change by 2020, in the absence of state and local actions to reduce greenhouse gases. The 2020 emissions projection is called the business as usual (BAU) scenario, and is based on the expected growth in City population, employment, and housing. Similar to the 2020 BAU forecast, the 1990 emissions projection represents an estimate of community emissions in 1990. This analysis is called the emissions backcast, and is based on 1990 socioeconomic factors (City of Stockton, 2014).

TABLE 3.7-1: CITY OF STOCKTON COMMUNITY GHG INVENTORIES: 1990 EMISSIONS BACKCAST, 2005 BASELINE, AND 2020 BAU FORECAST

EMISSIONS SECTOR	1990		2005		2020	
	MT CO ₂ E	% OF TOTAL	MT CO ₂ E	% OF TOTAL	MT CO ₂ E	% OF TOTAL
AGRICULTURE	928	0.05%	928	0.04%	928	0.03%
BUILDING ENERGY	560,993	31.3%	776,186	32.9%	911,272	34.1%
HIGH GWP*	76,444	4.3%	100,931	4.3%	112,478	4.2%
OFF-ROAD	154,223	8.6%	176,431	7.5%	213,300	8.0%
ON-ROAD	836,037	46.7%	1,132,265	48.0%	1,232,663	46.1%
SOLID WASTE	79,939	4.5%	65,720	2.8%	78,347	2.9%
WASTEWATER	75,569	4.2%	99,777	4.2%	111,191	4.2%
WATER	6,977	0.4%	8,694	0.4%	12,340	0.4%
TOTAL	1,791,120	100%	2,360,932	100%	2,672,519	100%

SOURCE: CITY OF STOCKTON CLIMATE ACTION PLAN, 2014.

*GWP = GLOBAL WARMING POTENTIAL (I.E. REFRIGERANTS)

BAU emissions are projected to increase by approximately 13% from 2005 to 2020. The increase will occur primarily because of increases in VMT, building energy and water use, and wastewater generation due to population and employment growth. Transportation emissions and building energy increase by 9% and 17% between 2005 and 2020, respectively; water and wastewater emissions are expected to grow by 42% and 11%, respectively.

3.7.3 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor National Ambient Air Quality Standards (NAAQS) vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The U.S. EPA is responsible for administering the FCAA. The FCAA requires the U.S. EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

On December 7, 2009, the Administrator of the U.S. EPA signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases – CO₂, CH₄, PFCs, and SF₆ – in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Findings:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing greenhouse gas emissions standards for vehicles. In collaboration with the National Highway Traffic Safety Administration, EPA finalized emissions standards for light-duty vehicles (2012-2016 model years) in May of 2010 and heavy-duty vehicles (2014-2018 model years) in August of 2011.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of Alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on Alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which will take effect October 1, 2012.

Federal Climate Change Policy

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science.” The federal government’s goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to

2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO₂ per year. This publically 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 greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Assembly Bill 1493

Pursuant to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California’s existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California’s Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007 (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of Alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of Alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state

production. The Plan assessed various Alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase Alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

EO S-13-08

EO S-13-08 was issued on November 14, 2008. The EO is intended to hasten California's response to the impacts of global climate change, particularly sea level rise, and directs state agencies to take specified actions to assess and plan for such impacts, including requesting the National Academy of Sciences to prepare a Sea Level Rise Assessment Report, directing the Business, Transportation, and Housing Agency to assess the vulnerability of the State's transportation systems to sea level rise, and requiring the Office of Planning and Research and the Natural Resources Agency to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required State agencies to develop adaptation strategies to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. The adaption strategies report summarizes key climate change impacts to the State for the following areas: public health; ocean and coastal resources; water supply and flood protection; agriculture; forestry; biodiversity and habitat; and transportation and energy infrastructure. The report recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Assembly Bill 32- Climate Change Scoping Plan

2008 Climate Change Scoping Plan: On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (2008 Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The 2008 Scoping Plan contains the main strategies California has implemented to reduce CO₂e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO₂e under a business-as-usual scenario. (This is a reduction of 42 MMT CO₂e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The 2008 Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The 2008 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 CO₂e),
- the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO₂e).

First Update to the Climate Change Scoping Plan: In June 2013, CARB kicked off a public process intended develop the First Update to the Climate Change Scoping Plan (2014 Scoping Plan). The public process included: regional workshops, input/advise from stakeholders, advise from the Environmental Justice Advisory Committee, public review and comment of a draft Scoping Plan, and ultimately public hearings. On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board.

The 2014 Scoping Plan indicates that California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32. The set of actions the State is taking is driving down greenhouse emissions and moving the State steadily in the direction of a cleaner energy economy. For instance, the 2014 Scoping Plan indicates that currently, about 23 percent of the State's electricity comes from renewable power and that this will increase to at least 33 percent by 2020 under new requirements set in place in 2011. The 2014 Scoping Plan indicates that collectively, the State's set of vehicle, fuels, and land use policies will cut in half emissions from passenger transportation and drivers' fuel costs over the next 20 years. The 2014 Scoping Plan cites California's Low Carbon Fuel Standard (LCFS) and California's vehicle GHG standards (Pavley) as two standards that have, and will continue to, dramatically scale up emission reductions in the future. The 2014 Scoping Plan cites work by regulators on developing a national GHG standard and corresponding fuel efficiency standard for medium- and heavy-duty trucks as well as California's pioneering zero emission vehicles (ZEV) regulation as areas where California is making major strides toward reducing the future GHG emission. The 2014 Scoping Plan indicates that seven Metropolitan Planning Organizations have adopted Sustainable Community Strategies that are intended to help drive GHG emission reductions, by creating more livable communities that offer greater housing and transportation

options; improved access to resources and services; safer, more vibrant neighborhoods; and healthier lifestyles where people can live, work, and play without having to travel long distances or sit through congestion. Lastly, the 2014 Scoping Plan cites the Cap-and-Trade Program launched by California, as a program that will ensure that California remains on track to continually reduce emissions and meet the 2020 limit and play a critical role in keeping California on the right emissions reduction trajectory to meet ongoing reduction targets at the lowest possible cost.

ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32.

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97

Senate Bill (SB) 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

SB No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG

emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans. SB 375 also amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

Senate Bill 32

SB 32, which passed into law in 2016, requires the State Board to ensure that statewide greenhouse gas emissions are reduced to 40 percent below the 1990 level by the year 2030. SB 32 extends the original set of greenhouse gas targets provided by the passage of AB 32. This new target sets an aggressive goalpost, helping the State along its pathway to achieve its longer-term goal of an 80 percent reduction in greenhouse gas emissions by the year 2050.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

CEQA Guidelines Appendix F

In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy. Appendix F of the CEQA Guidelines describes how EIRs should discuss potential energy impacts of proposed projects.

LOCAL

San Joaquin Valley Air Pollution Control District Climate Change Action Plan

In August 2008, the San Joaquin Valley APCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers and the public by

identifying and quantifying GHG emission reduction measures for development projects and by providing tools to streamline evaluation of project-specific GHG effects, and to assist Valley businesses in complying with State law related to GHG emissions.

A product of this direction to provide CEQA guidance is the Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts, presented to the APCD Board in December 2009. A central component of the Final Staff Report is the establishment of Best Performance Standards, which are specifications or project design elements that identify effective, feasible GHG emission reduction measures. Emission reductions achieved through Best Performance Standards implementation would be pre-quantified, thus negating the need for project-specific quantification of GHG emissions.

For projects not implementing Best Performance Standards, demonstration of a 29 percent reduction in GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact. Appendix J of the Final Staff Report provides a table of GHG emission reduction measures for development projects, along with a point value that corresponds to a percentage decrease in GHG emissions when available.

2014 Regional Transportation Plan/Sustainable Communities Strategy

SJCOG released the Final Draft of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) on June 13, 2014. The 2014 RTP/SCS, which has been named “Valley Visions San Joaquin,” will be the first Regional Transportation Plan in San Joaquin County to contain a Sustainable Communities Strategy (SCS), the result of the Sustainable Communities and Climate Protection Act of 2008 (i.e., SB-375). The RTP/SCS will coordinate future transportation investments and land use strategies to prioritize a multi-modal investment plan covering a 27-year period extending out to 2040.

The RTP/SCS is a long-range transportation plan that guides the region’s transportation improvements over a minimum of 20-years and is updated every four. Using growth forecasts and economic trends projected out over study timeframe, the RTP/SCS considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs. The 2014 RTP/SCS will address all transportation modes including motor vehicles, transit (commuter and local), rail (commuter and inter-regional), goods movement (rail, truck, and water), bicycle and pedestrian facilities, aviation systems, transportation systems management (TSM) and transportation demand management (TDM) programs, and other projects considered over the planning horizon of 2040. Regional transportation improvement projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in the adopted RTP/SCS.

The eight counties of the San Joaquin Valley are coordinating on some aspects of these planning efforts to maximize resources, with each area’s Metropolitan Planning Organization (MPO) developing a separate plan. MPOs are responsible for setting transportation policy and priorities

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

for a region and documenting how transportation funds will be spent in a Regional Transportation Plan. Specifically, the San Joaquin County RTP/SCS will:

- Identify the general location of uses, residential densities, and building intensities within the region
- Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region
- Gather and consider the best practically available scientific information regarding resource areas and farmland in the region
- Set forth a forecasted development pattern for the region
- Identify areas within the region sufficient to house all the population of the region
- Identify a transportation network to service the transportation needs of the region
- Quantify the reduction in GHG emissions projected to be achieved by the SCS

The Greenhouse Gas Reduction Targets for the 2014 RTP/SCS are as follows:

- 5 percent - per capita reduction from 2005 levels by 2020
- 10 percent - per capita reduction from 2005 levels by 2035

City of Stockton Climate Action Plan

The City of Stockton Climate Action Plan (2014) sets forth a strategy to reduce community-generated GHG emissions, consistent with statewide GHG reduction efforts. As a condition for approval of the 2035 General Plan, the City of Stockton entered into a Settlement Agreement with the Sierra Club and the California Attorney General's Office in October 2008. The Settlement Agreement was entered to ensure that future growth outlined in the City of Stockton 2035 General Plan addresses GHG emissions in a meaningful and constructive manner. The City of Stockton Climate Action Plan (CAP) outlines a framework to feasibly reduce community GHG emissions in a manner that is supportive of AB 32 and is consistent with the Settlement Agreement and 2035 General Plan policy.

The City of Stockton Climate Action Plan was approved by the Stockton City Council on December 2, 2014. The Climate Action Plan summarizes the City's GHG emissions inventory and provides 26 GHG emissions reduction measures. The CAP relies on numerous voluntary measures for both existing and new development, but also includes mandatory measures where required by other state or local existing mandates and other City initiatives. The CAP also provides implementation strategies for the emissions reduction measures provided within the CAP.

3.7.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Thresholds of Significance (CEQA Guidelines Appendix G)

Consistent with Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed Project would do any of the following:

1. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.
2. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

The SJVAPCD has evaluated different approaches for estimating impacts and summarizing potential GHG emission reduction measures. The SJVAPCD staff has concluded that *"existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change."* This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015) provides a tiered approach to assessing the significance of project-specific GHG emissions increases. The SJVAPCD has indicated that projects complying with a qualified GHG emissions reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the region would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by the Lead Agency. The SJVAPCD has indicated that projects complying with an qualified GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standards (BPS) established by the SJVAPCD.

The issue of complying with a GHG threshold is complex and dynamic, especially in light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) (referred to as the Newhall Ranch decision hereafter). The Supreme Court ruling highlighted the need for the threshold being tailored to the specific project, its location, and the surrounding setting. The Newhall Ranch decision suggests that determining consistency with local GHG reduction plans or CAPs that qualify under Section 15183.5 of the CEQA Guidelines may be the most effective strategy for local governments to assess the significance of GHG emissions from proposed land use developments.

Section 15183.5 of the CEQA Guidelines allows for the tiering and streamlining of GHG emissions analysis, allowing lead agencies to analyze and mitigate the significant effects of GHG emissions if a qualified GHG reduction plan or Climate Action Plan is made available. The City of Stockton CAP

was prepared to reduce GHG emissions and complies with the requirements of Section 15183.5 of the CEQA Guidelines. Additionally, SJCOG has an adopted RTP/SCS that was prepared to reduce GHG emissions (predominately associated with transportation related emissions). The RTP/SCS was designed to be consistent with the CARB established reduction targets of 5 percent for 2020 and 10 percent for 2035 in San Joaquin County. CARB has determined that the RTP/SCS, if implemented, will achieve those reduction targets.

For the reasons presented above, this GHG analysis in this EIR has established a qualitative threshold that evaluates the projects consistency with the Stockton CAP and the SJCOG RTP/SCS to determine the level of significance. This analysis also includes quantitative modeling data in support of the qualitative analysis.

Thresholds of Significance (CEQA Guidelines Appendix F)

Consistent with Appendix F of the CEQA Guidelines, energy-related impacts are considered significant if implementation of the proposed Project would do the following:

- Result in significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal;
- Result in significant adverse impacts on local and regional energy supplies and on requirements for additional capacity;
- Result in significant adverse impacts on peak and base period demands for electricity and other forms of energy;
- Fail to comply with existing energy standards;
- Result in significant adverse impacts on energy resources;
- Result in significant adverse impacts related to transportation energy use requirements of the project and use of transportation Alternatives; or
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to energy conservation.

In order to determine whether or not the proposed project would result in a significant impact on energy use, this EIR includes an analysis of proposed project energy use, as provided under *Impacts and Mitigation Measures* below.

IMPACTS AND MITIGATION MEASURES

The proposed project and five Alternatives are analyzed in the following environmental analysis. The Alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each Alternative is described in detail in Chapter 5.0.

Impact 3.7-1: The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Less than Significant)

Stockton Climate Action Plan: The City of Stockton Climate Action Plan (2014) sets forth a feasible strategy to reduce community-generated GHG emissions, consistent with State the local goals of reducing GHG. The Climate Action Plan summarizes the City's GHG emissions inventory and estimates and outlines emission reduction measures and implementation strategies. The Climate Action Plan contains reduction measures by emissions sector (i.e., building energy use, land use and transportation, waste generation, water consumption, wastewater treatment, urban forestry, high global warming potential GHG, and off-road activity). A complete list of GHG reduction measures that would be implemented in accordance with the CAP is provided below:

- **DRP-1: Development Review Process – 29% Reduction for Discretionary Projects.** This GHG reduction measure requires an overall 29% reduction below business-as-usual project emissions for new discretionary projects. This reduction target was specifically selected to be consistent with San Joaquin Air Pollution Control District's recommended CEQA significance threshold and to require similar reductions for new development in Stockton as is likely to be required in other parts of the San Joaquin Valley.
 - As shown in the following tables, the proposed Project would result in approximately a 34.8 percent reduction in annual BAU GHG emissions from the 2005 baseline level by 2020 with mitigation incorporated ($[(26,797.65 \text{ MTCO}_2\text{e} - 41,101.11 \text{ MTCO}_2\text{e}) / 41,101.11 \text{ MTCO}_2\text{e} \times 100\% = -34.8\%]$). The reduction in GHG emissions would be attributable to the traffic, area, and water model inputs as well as the advancement of vehicle and equipment efficiency, and more stringent standards and regulations as time progresses, such as State regulation emission reductions (e.g., Pavley, Low Carbon Fuel Standard, and Renewable Portfolio Standard). It should be noted that although a reduction related to such attributes would occur for every development project, CalEEMod takes into consideration how much of each attribute is applied for each specific project based on the size of the project and associated land uses.

TABLE 3.7-2: YEAR 2020 OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YEAR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	669.36	669.36	0.03	0.01	673.67
Energy	0	3,614.62	3,614.62	0.21	0.07	3,640.72
Mobile	0	21,376.08	21,376.08	1.17	0	21,405.28
Waste	350.60	0	350.60	20.72	0	868.60
Water	27.22	91.78	119.00	2.80	0.07	209.38
Total	377.83	25,751.83	26,129.66	24.93	0.15	26,797.65

SOURCE: CALEEMOD (v.2016.3.2).

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

TABLE 3.7-3: BASELINE 2005 OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YEAR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	1,047.83	812.31	1,860.14	4.95	0.01	1,988.18
Energy	0	6,381.30	6,381.30	0.25	0.10	6,416.65
Mobile	0	31,139.00	31,139.00	4.38	0	31,248.38
Waste	426.39	0	426.39	25.20	0	1,056.35
Water	40.32	217.41	257.73	4.16	0.10	391.53
Total	1,514.54	38,550.01	40,064.56	38.93	0.21	41,101.11

SOURCE: CAL EEMOD (v.2016.3.2).

- **Energy-1: Green Building Ordinance.** This GHG reduction measure requires that the proposed Project comply with Title 24 of the California Code of Regulations Standards and any Green Building Ordinance established by the City of Stockton.
 - The proposed Project would comply with the latest version of Title 24 of the California Code of Regulations Standards. The proposed Project would also comply with Chapter 15.72 (Green Building Standards) of the City of Stockton Municipal Code. The City has a Building Department that reviews all building plans prior to the issuance of a building permit. Through this process they ensure consistency with the requirements.
- **Energy-2a: Outdoor Lighting Upgrades (Municipal).** This GHG reduction measure requires the City of Stockton to upgrade existing outdoor lighting within the city.
 - The proposed Project is a new development, and all new development will meet the City's outdoor lighting standards. There will be some upgrades to outdoor lighting along the frontage roads (West Lane and Eight Mile), which will provide some GHG reduction benefits.
- **Energy-2b: Outdoor Lighting Upgrades (Private).** This GHG reduction measure provides for a voluntary program to encourage and promote lighting upgrades for the private sector and other public agencies.
 - The proposed Project is a private new development with various public facilities. All new development will meet the City's outdoor lighting standards. There will be some upgrades to outdoor lighting along the frontage roads (West Lane and Eight Mile), which will provide some GHG reduction benefits.
- **Energy-3: Energy Efficiency Programs to Promote Retrofits for Existing Residential Buildings.** This GHG reduction measure requires that the City of Stockton continue to work with community services agencies and PG&E and other funding sources to identify funding and incentivize residential energy efficiency projects.
 - The proposed Project does not contain any existing buildings; there would be no need for retrofits. All new development would be subject to the strict energy

efficiency requirements contained within the current version of Title 24 of the California Code of Regulations Standards. This GHG reduction measure does not apply.

- **Energy 4: Energy Efficiency Programs to Promote Retrofits for Existing Commercial Buildings.** This GHG reduction measure requires that the City of Stockton provide incentives to support business owners in achieving energy efficiency in existing non-residential buildings within the city.
 - The proposed Project does not contain any existing buildings; there would be no need for retrofits. All new development would be subject to the strict energy efficiency requirements contained within the current version of Title 24 of the California Code of Regulations Standards. This GHG reduction measure does not apply.
- **Energy 5a: Solar Powered Parking (Owner-financed).** This GHG reduction measure requires that the City support programs to encourage existing multi-family housing complexes and commercial development to install solar panels on carports, financed by developers/owners.
 - The proposed Project does not include any existing development. This GHG reduction measure does not apply.
- **Energy 5b: Solar Powered Parking (Power Purchase Agreement-financed).** This GHG reduction measure requires that the City support programs to encourage existing multi-family housing complexes and commercial development to install solar panels on carports, financed by a Power Purchase Agreement (PPA).
 - The proposed Project does not include any existing development. This GHG reduction measure does not apply.
- **Energy 6a: Residential and Non-Residential Rooftop Solar (Owner-financed).** This GHG reduction measure requires the City to encourage businesses and residents to install rooftop solar, financed by the developer/owner.
 - The proposed Project would be required to implement Mitigation Measure 3.3-4, which requires the proposed Project developer(s) to offer buyers options to incorporate rooftop photovoltaic tiles. The developer of the proposed Project would also be required to offer buyers of individual single-family residences the option to pre-install rooftop solar systems (Mitigation Measure 3.3-5). Therefore, the proposed Project would comply with this GHG reduction measure.
- **Energy 6b: Residential and Non-Residential Rooftop Solar (Power Purchase Agreement-financed).** This GHG reduction measure requires the City to encourage businesses and residents to install rooftop solar, financed by the PPA.

- The proposed Project would be required to implement Mitigation Measure 3.3-4, which requires the proposed Project developer(s) to offer buyers options to incorporate rooftop photovoltaic tiles. The developer of the proposed Project would also be required to offer buyers of individual single-family residences the option to pre-install rooftop solar systems (Mitigation Measure 3.3-5). Therefore, the proposed Project would comply with this GHG reduction measure.
- **Trans-1: Land Use/Transportation System Design Integration.** This GHG reduction measure requires that the City of Stockton located at least 4,400 new housing units in the Greater Downtown¹, with 3,000 units approved by 2020.
 - The proposed Project does not hinder the ability of the City of Stockton to meet this target. Therefore, the proposed Project does not conflict with this GHG reduction measure.
- **Trans-2: Parking Policies.** This GHG reduction measure requires the City of Stockton to encourage the development of policies that increase parking costs by 10% in the downtown area (metered parking fees have already increased by at least 10% since 2005). The CAP also identifies other strategies to achieve the goal, including designating the most attractive spots for rideshare vehicles and offering incentives for employees not to park.
 - The proposed Project would not hinder the ability of the City of Stockton to achieve this GHG reduction measure. The proposed Project does not conflict with this GHG reduction measure.
- **Trans-3: Transit System Support.** This GHG reduction measure requires the City of Stockton to encourage the development of transit amenities. This GHG reduction measures also requires the City to work with the San Joaquin Regional Transit Authority (RTD) to enhance the existing and future transit system as part of GHG reduction measure Trans-6.
 - Mitigation Measure 3.3-2 would require a new bus turnout within the Project site, as determined by the San Joaquin RTD. The project developer has been coordinating with the RTD for the past five years regarding the provision of transit services to the project site. The proposed Project complies with this GHG reduction measure. The proposed Project does not conflict with this GHG reduction measure.
- **Trans-4: Efficient Goods Movement.** This GHG reduction measure requires the City of Stockton to improve the efficiency of goods movement through the City of Stockton. This includes the construction of grade-separated crossings within the city limits.

¹ The Settlement Agreement defines the “Greater Downtown” as “land generally bounded by Harding Way, Charter Way (MLK), Pershing Avenue, and Wilson Way.”

- The proposed project does not obstruct any City plans for grade-separated crossings within the city limits. The proposed Project does not conflict with this GHG reduction measure.
- **Trans-5: Reduce Barriers for Non-Motorized Travel.** This GHG reduction measure requires the City to support and integrate Stockton's land use and mobility needs, including support for non-motorized (e.g. bicycle and pedestrian) modes of transportation.
 - The proposed Project would be bicycle and pedestrian-friendly in the sense that it includes continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets, and paving and striping for bike lanes/paths (Mitigation Measure 3.3-2). The proposed Project complies with this GHG reduction measure. The proposed Project does not conflict with this GHG reduction measure.
- **Trans-6: Transit System Improvements.** This GHG reduction measure requires the City to maintain its current transit mode share, as opposed to experiencing a decline in transit mode share.
 - The proposed Project would include a new bus turnout within the Project site, as determined by the San Joaquin RTD. This would provide residents living and working within the proposed Project site, with convenient access to public transit. The proposed Project complies with this GHG reduction measure and does not conflict with this GHG reduction measure.
- **Trans-7: Safe Routes to School.** This GHG reduction measure requires the City of Stockton to work with local school districts to enhance pedestrian crossings, encourage activities such as a *walking school bus*, and create educational programs that teach students bicycle safety.
 - The proposed Project includes a school and has specifically designed a network of continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets, and paving and striping for bike lanes/paths (Mitigation Measure 3.3-2) that lead to the school. The proposed Project does not conflict with this GHG reduction measure.
- **Trans-8a: Additional Safe Routes to School.** This GHG reduction measure requires the City to work with local school districts to expand the Safe Routes to School Program to achieve a participation rate of 10% of K-12 students.
 - As previously described, the proposed Project includes a school and has specifically designed a network of continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets, and paving and striping for bike lanes/paths (Mitigation Measure 3.3-2) that leads to the school. The proposed Project does not conflict with this GHG reduction measure.

- **Trans-8b: Transportation Demand Management.** This GHG reduction measure requires the City to encourage employers within the City to take actions that would result in at least 1% of employees participate in a Transportation Demand Management Program.
 - The proposed Project is required to prepare a Transportation Demand Management Program (Mitigation Measure 3.3-3) as part of the non-residential portions of the Project that includes:
 - Provide secure bicycle parking in conjunction with the non-residential portion of the Project.
 - Provide on-site amenities that encourage alternative transportation modes such as locker, shower, and secure bike storage facilities.
 - Coordinate SJCOG's Commute Connection Program.

Implementation of these measures would ensure that the proposed Project does not conflict with this GHG reduction measure.

- **Waste-1: Increased Waste Diversion.** This GHG reduction measure requires the City of Stockton to achieve its goal of a 75% waste diversion rate (i.e. rate of diversion of waste from landfill).
 - The proposed Project would be subject to the City's actions toward achieving its 75% waste diversion rate, including any contract requirements of their waste hauler. The proposed project would not have any uses that would conflict with this GHG reduction measure.
- **Water-1: Comply with SB X7-7.** This GHG reduction measure requires the City to meet a target water usage of 165 gallons per capita per day.
 - This goal is in line with the state mandates as required by SB X7-7, which was enacted in November 2009 and requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20% reduction in urban per capita use from 2005 conditions by December 31, 2020. Mitigation Measure 3.3-4 requires the installation of water efficient appliances, toilets, faucets, and shower heads. This would help the City to achieve the required targets. The proposed Project would not conflict with this GHG reduction measure.
- **Water-2: Promote Water-Efficiency for Existing Development.** This GHG reduction measure requires the City to actively encourage water efficiency and retrofit programs for existing developments.
 - The proposed Project does not include any existing development. All new development would be subject to the strict water efficiency requirements of the City. This GHG reduction measure does not apply.

- **Wastewater-1: Energy Efficiency Improvements at the RWCF.** This GHG reduction measure requires the City to implement several actions (as provided in the City's Capital Improvement and Energy Management Plan) that would achieve a 5.7% reduction in energy usage at the Regional Wastewater Control Facility that Stockton utilizes for wastewater treatment. These include:
 - 1. Reduce Discharge Pressure of Tertiary Air Compressors.
 - 2. Install Premium Efficiency Motors on a Replacement Basis.
 - 3. Replace Existing HID Fixtures with High Efficiency Fluorescent Fixtures.
 - 4. Install Automatic Lighting Controls.
 - 5. Replace Air Compressor No. 2 with a VSD Air Compressor.
 - 6. Install Higher Efficiency DAF Pressurization Pumps.
 - 7. Replace Existing Outdoor HID Lighting with LED Lighting.
 - The proposed Project does not obstruct the City's goal of having a 5.7% reduction in energy usage at the Regional Wastewater Control Facility that Stockton utilizes for wastewater treatment. The City is anticipated to continue with their effort to achieve this goal. Overall, the proposed project does not conflict with this measure.
- **Urban Forestry-1: Urban Tree Planting Programs.** This GHG reduction measure requires the City to strive to expand its urban forestry programs to plant between 500 and 900 trees per year from 2016 to 2020. To maximize GHG and other environmental benefits, new trees would be targeted to the downtown and urban areas.
 - This proposed project is not located in downtown or urban areas, however, there is a measure that requires the landscaping plan for every home to include a front yard tree on every home. It is anticipated that other trees would be installed in backyard at the discretion of the homeowner. Additionally, there are extensive trees that would be planted on the commercial and high density residential site. The City will review those landscaping site plans when those particular sites come up for building permit approval. The proposed Project does not conflict with this GHG reduction measure.
- **HGWP GHG-1: Residential Responsible Appliance Disposal (RAD) Programs.** This GHG reduction measure requires the City of Stockton to actively encourage a reduction in High Global Warming Potential (HGWP) refrigerants.
 - The proposed Project would not obstruct the City's goal of reducing HGWP refrigerants. Currently, the project site is undeveloped and has none on the project site. New development would add appliances and air conditioning units that would have refrigerants. All new development would be subject to purchasing appliances that are approved by the CARB for sale in California, which are considered the best and most energy efficient in the country. It is anticipated that HGWP standards will become stricter with time, with a GWP limit of 150 for

residential and commercial refrigerators by 2021 and a GWP limit of 750 for air conditioning units by 2020. The proposed project would be anticipated to be built over time and would benefit from the CARB standards for refrigeration and air conditioning units that are anticipated to be implemented during the project build. The proposed Project does not conflict with this GHG reduction measure.

- **Off-Road-1: Electric Powered Construction Equipment.** This GHG reduction measure requires the City of Stockton to work with State and local partners to develop financial incentives for participating construction contractors to electrify portions of their fleet by 2020. The City has a goal of 3% of construction fleets to be electrified by 2020.
 - The proposed Project would not conflict with the City's overall goal. The proposed project does not have a fleet that can be electrified. This measure is aimed at contractors, as opposed to development projects. The SJVAPCD has programs in the region that incentivize contractors to electrify equipment, some of which is paid for through ISR fees. The proposed project is required to pay ISR fees to the SJVAPCD. It is not known exactly how the SJVAPCD would utilize these fees but is expected that they would be used to fund emission reduction projects. Overall, the proposed project does not conflict with this measure.
- **Off-Road-2: Reduced Idling Times for Construction Equipment.** This GHG reduction measure requires the City of Stockton to strive to develop an ordinance to limit heavy-duty off-road equipment idling time to meet CARB's idling regulations for on-road trucks would reduce idling time and GHG emissions by 920 MT CO₂e in 2020.
 - The proposed Project does include idling requirements that are consistent with the CARB standards. The proposed Project is required to follow all regulations as established by CARB, and the City of Stockton, including any related to reducing idling times for construction equipment or commercial delivery trucks. The proposed Project does not conflict with this GHG reduction measure.
- **Off-Road-3: Electric Landscaping Equipment.** This GHG reduction measure requires the City to adopt a goal for 15% of the City's landscaping equipment to be electric or battery-powered by 2020. The City is required to promote this voluntary measure through partnership with the air district, CARB, and other parties to encourage equipment replacement overtime.
 - The proposed Project does not obstruct the City's goal of having 15% of the City's landscaping equipment be electric or battery-powered by 2020. The City is anticipated to continue with their effort to convert their equipment.

As described above, the proposed project would not obstruct the Stockton Climate Action Plan and would comply with all relevant GHG reduction measures.

Regional Transportation Plan/Sustainable Communities Strategy: SJCOG released the Final Draft of the RTP/SCS on June 13, 2014. The RTP/SCS reflects a region-specific, balanced multimodal plan

that only achieves the intent and promise of SB 375 and can be implemented through existing and planned programs or policies. The RTP/SCS foundation comprises recent household and job growth forecasts, market demand and economic studies, and transportation studies including SJCOG's Smart Growth Transit Oriented Development Plan, Goods Movement Study, and Regional Bike/Pedestrian/Safe Routes to School Master Plan.

Chapter 3 of the RTP/SCS contains policies and supportive strategies in order to address the transportation needs of the San Joaquin region and quantify regional needs in the 2014-2040 planning horizon. One of the strategies in Table 3.1 of the SJCOG RTP/SCS aims to optimize public transportation to provide efficient and convenient access for users at all income levels. Another strategy aims to provide transportation improvements to facilitate non-motorized travel. For example, San Joaquin Regional Transit District (RTD) Route 23, Intercity, currently runs from downtown Stockton to the Lodi Transfer Station. Route 23 travels along West Lane on the western boundary of the Project site. Therefore, the proposed Project would be located in an area that is currently served by the San Joaquin RTD. Additionally, as required by Mitigation Measure 3.3-2 of this DEIR, the Project would incorporate bus turnouts and transit improvements (where requested by the San Joaquin RTD), continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths. Furthermore, as required by Mitigation Measure 3.3-3 of this DEIR, the Project is required to prepare and implement a transportation demand management (TDM) plan for the non-residential portion of the Project. The TDM plan is required to be coordinated with SJCOG's Commute Connection Program.

In addition to policies and supportive strategies to address the transportation needs of the region, the RTP/SCS contains a map and associated table of the land uses, locations, and densities of new growth assumed until 2035 in Appendix M, Performance Measures, of the RTP/SCS. The Project site is assumed for low density residential development in Appendix M, which is consistent with the proposed project. The proposed project is consistent with the RTP/SCS's land use assumptions for the project site.

CARB evaluated the SJCOG RTP/SCS in a published technical document in May 2015, which indicates that the CARB staff found that there are multiple factors that support the conclusion that the SCS, if implemented, would achieve the region's targets of 5 and 10 percent in 2020 and 2035. Because the proposed project uses the same land use assumptions, and incorporates a multi-modal system with roads, transit, bike facilities, and pedestrian facilities consistent with the SCS policy recommendations, it is consistent with the SCS and does not inhibit the achievement of the region's GHG reduction targets of 5 and 10 percent in 2020 and 2035.

San Joaquin Valley Air Pollution Control District Climate Change Action Plan: The SJVAPCD has a Climate Change Action Plan that provides guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development projects and by providing tools to streamline evaluation of project-specific GHG effects, and to assist Valley businesses in complying with State law related to

GHG emissions. The SJVAPCD has provided Best Performance Standards, which are specifications or project design elements that identify effective, feasible GHG emission reduction measures, and they have also provided a recommendation for a 29% reduction in GHG emissions from business-as-usual conditions (See Table 3.7-2 and 3.7-3 above). The City of Stockton, through their CAP, has incorporated the recommendation of the SJVAPCD. The proposed Project meets the 29% reduction recommendation, and has incorporated measures that are intended to reduce GHG emissions locally.

Conclusion: The proposed Project would be consistent with the goals, policies, and measures of the City of Stockton Climate Action Plan and the SJCOG RTP/SCS. Therefore, the proposed Project would have a **less than significant** impact on the potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not generate GHG emissions that may have a significant impact on the environment. Under this Alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this Alternative is environmentally superior relative to this topic.

With Bridge Alternative: Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. However, unlike the proposed Project, this Alternative would include construction of the bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road.

This Alternative would result in the same number of HDR units as the proposed Project (340 units), and would reduce the number of LDR units from 1,073 under the proposed Project to 1,066 units, for a total of 1,406 units. This would result in a reduction of seven units when compared to the proposed Project. Additionally, this Alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

This Alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. If the LUSD decides to not pursue building a school at this site, then the site would be developed for residential uses in accordance with the General Plan land use designation which would result in the construction an additional 90 units in place of the school. Under this variation, the total residential units would increase from 1,406 to 1,496 units. The balance of the Project site would be developed as proposed under the Proposed Project.

Similar to the proposed project, this Alternative does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. This

Alternative would be designed and developed consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. With the exception of the addition of a bridge and a reduction of seven residential units, this Alternative is largely the same as the proposed Project. Under this Alternative, a **less than significant** impact would occur with the implementation of mitigation. Compared to the proposed Project, this Alternative is the same relative to this topic.

General Plan 2035 Alternative: Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the City's General Plan 2035. This Alternative would not require a General Plan amendment. The balance of the Project site would be developed as proposed under the proposed Project. Under this Alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. This Alternative would not include dedication of a K-8 school site. This Alternative would include construction of the bridge crossing over Bear Creek, which is currently reflected in the Circulation Element of the General Plan 2035. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an Alternative access way to the south.

Based on the existing land use designations, the Project site would support approximately 15.7 acres of industrial use (406,937 sf – 0.6 FAR), approximately 9.0 acres of commercial use (117,612 sf – 0.3 FAR), 1,730 (6.1 units per gross acre) to 2,467 (8.7 units per gross acre) low density residential units, and 248 (23.2 units per gross acre) to 309 (29.0 units per gross acre) high density residential units. This Alternative would result in 1,978 to 2,776 residential units (low and high density), which is 475 to 1,273 (without school site) to 565 to 1,363 (with school site) more units than under the proposed Project. These are considered maximum development assumptions and would likely be less due to the need for parks, roadways, detention basins, etc. This Alternative is illustrated on Figure 2-6 in Section 2.0.

Similar to the proposed project, this Alternative does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. This Alternative would be consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. This Alternative would result in significantly more emissions when compared to the proposed Project because of the increased development intensity, however, it would not be in conflict with the Stockton CAP or SJCOG RTP/SCS. Under this Alternative, a **less than significant** impact would occur with the implementation of mitigation. Compared to the proposed Project, this Alternative is the same relative to this topic.

Reduced Project Alternative: Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This approximately 200.15-acre Alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or

without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This Alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Reduced Intensity/Density Alternative: Under this Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This Alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). This would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This Alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Impact 3.7-2: The proposed Project has the potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (Significant and Unavoidable)

Proposed Project:

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed Project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO₂ and other GHG pollutants, such as CH₄ and N₂O, from mobile sources and utility usage.

Short-Term Construction GHG Emissions: Estimated increases in unmitigated GHG emissions associated with construction of the proposed Project are summarized in Table 3.7-4. The results of the modeling are included as Appendix B of this Draft EIR.

TABLE 3.7-4: CONSTRUCTION GHG EMISSIONS (UNMITIGATED METRIC TONS/YR)

YEAR	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2019	0	1,014.23	1,014.23	0.22	0	1,019.80
2020	0	1,819.77	1,819.77	0.15	0	1,823.42
2021	0	1,756.67	1,756.67	0.13	0	1,760.01
2022	0	1,716.77	1,716.77	0.13	0	1,719.98
2023	0	1,340.08	1,340.08	0.09	0	1,342.34
2024	0	4.50	4.50	1.30e-004	0	4.50
Total	0	7,652.02	7,652.02	0.72	0	7,670.06

SOURCE: CALEEMOD (v.2016.3.2).

As presented in the table, short-term construction emissions of GHG associated with development of the Project are estimated to be approximately 7,760 MTCO₂e. This represents a low of approximately 4.5 MTCO₂e and a high of 1,823 MTCO₂e emitted during each of the construction years (2019 through 2024). These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a Project. Given the short-term nature of these construction emissions, the proposed Project construction emissions would not generate a significant contribution to global climate change.

Long-Term Operational GHG Emissions: Proposed Project operational GHG emissions were modelled and are provided below. The following discussion provides an analysis of the proposed Project for the following scenarios:

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

- Unmitigated and mitigated Project emissions (during earliest estimated operational year – Year 2020);
- Year 2020 business-as-usual (BAU) emissions compared with the Year 2005 baseline;
- Per capita emissions.

The mitigation measures assumed for the modelling of GHG emissions for the proposed Project are established in *Section 3.3: Air Quality* and reprinted below. The proposed Project's (short-term construction-related and long-term operational) GHG emissions for Buildout of the proposed Project were estimated using the California Emission Estimator Model (CalEEMod)TM (v.2016.3.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO₂ equivalent units of measure (i.e., MTCO₂e), based on the global warming potential of the individual pollutants.

Unmitigated vs. Mitigated Scenario: Estimated GHG emissions associated with the Buildout of the proposed Project (in Year 2020, representing the earliest potential year of project operation) with and without mitigation incorporated are summarized in Table 3.7-5 and 3.7-6. As shown in the tables, the annual GHG emissions associated with Buildout of the proposed Project would be approximately 26,798 MTCO₂e with the above referenced mitigation incorporated and 30,029 MTCO₂e without mitigation. The mitigation results in a decrease of approximately 3,231 MTCO₂e.

TABLE 3.7-5: YEAR 2020 OPERATIONAL GHG EMISSIONS (UNMITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	1,041.77	669.36	1,711.12	4.90	0.01	1,837.19
Energy	0	3,614.62	3,614.62	0.21	0.07	3,640.72
Mobile	0	23,395.60	23,395.60	1.23	0	23,426.27
Waste	350.60	0	350.60	20.72	0	868.60
Water	34.03	109.04	143.07	3.51	0.09	255.99
Total	1,426.40	27,788.62	29,215.02	30.56	0.17	30,028.78

SOURCE: CAL EEMOD (v.2016.3.2).

TABLE 3.7-6: YEAR 2020 OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	669.36	669.36	0.03	0.01	673.67
Energy	0	3,614.62	3,614.62	0.21	0.07	3,640.72
Mobile	0	21,376.08	21,376.08	1.17	0	21,405.28
Waste	350.60	0	350.60	20.72	0	868.60
Water	27.22	91.78	119.00	2.81	0.07	209.38
Total	377.83	25,751.83	26,129.66	24.93	0.15	26,797.65

SOURCE: CAL EEMOD (v.2016.3.2).

2005 vs. 2020 BAU Scenario: The following table provides baseline 2005 GHG emissions as modelled with CalEEMod, for the sake of comparison with Year 2020 BAU emissions. This analysis was prepared to illustrate compliance with the Stockton CAP Mitigation Reduction Measure (DRP-1) which requires a 29% reduction for discretionary projects.

TABLE 3.7-7: BASELINE 2005 OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	1,047.83	812.31	1,860.14	4.95	0.01	1,988.18
Energy	0	6,381.30	6,381.30	0.25	0.098	6,416.65
Mobile	0	31,139.00	31,139.00	4.38	0	31,248.38
Waste	426.3866	0	426.39	25.20	0	1,056.35
Water	40.32	217.41	257.73	4.15	0.10	391.53
Total	1,514.54	38,550.01	40,064.56	38.93	0.21	41,101.11

SOURCE: CALEEMOD (v.2016.3.2).

As shown, the proposed Project would result in approximately a 34.8 percent reduction in annual BAU GHG emissions from the 2005 baseline level by 2020 with mitigation incorporated $\left(\frac{[26,797.6450 \text{ MTCO}_2\text{e} - 41,101.1054 \text{ MTCO}_2\text{e}]}{41,101.11 \text{ MTCO}_2\text{e}} \times 100\% = -34.8\% \right)$. The reduction in GHG emissions would be attributable to the traffic, area, and water model inputs as well as the advancement of vehicle and equipment efficiency, and more stringent standards and regulations as time progresses, such as State regulation emission reductions (e.g., Pavley, Low Carbon Fuel Standard, and Renewable Portfolio Standard). It should be noted that although a reduction related to such attributes would occur for every development project, CalEEMod takes into consideration how much of each attribute is applied for each specific project based on the size of the project and associated land uses.

Per Capita Analysis: According to the City of Stockton, the City has a population/housing ratio of 3.17. This ratio applied to the highest range of units proposed as part of the proposed Project would yield 4,765 residents at Buildout $\left([1,163 \text{ single-family units} + 340 \text{ apartment units}] \times 3.17 = 4,765 \text{ residents} \right)$. Therefore, with a total projected population of 4,765 residents at Buildout, and unmitigated operational Year 2020 GHG emissions of 30,029 MT CO₂e, the proposed Project would generate approximately 6.30 MT CO₂e/population/year for operational emissions under the unmitigated scenario. Under the mitigated scenario, with mitigated operational GHG emissions of 26,798 MT CO₂e, the proposed Project would generate approximately 5.62 MT CO₂e/population/year. This is likely to decrease even further over time (beyond the Buildout year) as new technologies provide opportunities to continue to reduce GHG emissions in the coming years (i.e. through additional State and local requirements).

Conclusion: The proposed Project is consistent with the City of Stockton Climate Action Plan, alongside an associated CEQA environmental review document, the *Draft Subsequent Environmental Impact Report for the City of Stockton Climate Action Plan and Related Actions* (2014). The proposed Project complies with the GHG Reduction Measures provided in City of Stockton CAP, and specifically complies with the Development Review Process GHG Reduction Measure (DRP-1) which requires a 29% reduction from the 2020 BAU. In addition, the proposed

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

project is consistent with the development and growth assumptions that SJCOG used in developing the RTP/SCS. CARB has found that the implementation of the RTP/SCS would allow SJCOG to achieve the CARB reduction targets for 2020 and 2035. The proposed project does not obstruct the RTP/SCS and is consistent with that plan. While the implementation of mitigation measures and compliance with the Stockton CAP GHG reduction measures would reduce greenhouse gas emissions to the extent feasible, there would still be a net increase in global GHG emissions. This is a **Significant and Unavoidable Impact**.

MITIGATION MEASURES (REPRINTED BELOW FROM SECTION 3.3: AIR QUALITY)

Mitigation Measure 3.3-1: *Prior to final approval of improvement plans, the Project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or Project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or Project component, the Project proponent shall incorporate mitigation measures into the proposed Project and demonstrate compliance with District Rule 9510 including payment of all fees.*

Mitigation Measure 3.3-2: *Prior to the approval of improvement plans, the Project proponent shall incorporate the following features into the applicable Project plans (e.g. site, engineering, landscaping, etc.):*

- *Bus turnouts and transit improvements where requested by the San Joaquin RTD.*
- *Continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets.*
- *Pavement and striping for bike lanes/paths.*
- *Street lighting along internal roadways and/or bike lanes/paths, sidewalks.*
- *Pedestrian signalization, signage and safety designs at signalized intersections.*
- *Shade trees to shade sidewalks in street-side landscaping areas.*
- *Shade trees to front yards*

Mitigation Measure 3.3-3: *Prior to the approval of improvement plans, the Project proponent shall prepare and implement a transportation demand management (TDM) plan for the non-residential portions of the Project that includes, but is not limited to, the following measures subject to the review and approval of the City of Stockton:*

- *Provide secure bicycle parking in conjunction with the non-residential portion of the Project.*
- *Provide on-site amenities that encourage Alternative transportation modes such as locker, shower, and secure bike storage facilities.*
- *Coordinate SJCOG's Commute Connection Program.*

Mitigation Measure 3.3-4: *Prior to the approval of building plans, the Project proponent shall prepare and implement the following additional mitigation measures, as feasible:*

- *Require the utilization of Energy Star-compliant roof materials on Project buildings.*
- *Require Project residences to be designed to take advantage of sun and to maximize shade.*

- *Require developers to offer buyers optional packages that incorporate passive solar design and solar heaters.*
- *Prescribe limits for idling time for commercial vehicles that are consistent with the CARB standards, including delivery and construction vehicles.*
- *Require developers to install energy-efficient appliances and equipment, where applicable.*
- *Require developers to install water-efficient appliances, toilets, faucets, and shower heads, where applicable.*
- *Require developers to offer buyers optional packages that incorporate photovoltaic roofing tiles.*

Mitigation Measure 3.3-5: *Prior to and during all construction activities, the Project proponent shall provide all prospective buyers of single-family residential units the option to pre-install rooftop solar.*

Mitigation Measure 3.3-6: *Prior to Project operation, the Project proponent shall install the requisite on-site electrical hook-ups necessary for electric plug-in vehicles (within each of the single-family residences).*

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not generate GHG emissions that may have a significant impact on the environment. Under this Alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this Alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this Alternative would include construction of the bridge crossing over Bear Creek. This Alternative also establishes a site for a school. This Alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project. Additionally, this Alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project and would increase the amount of traditional park area. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the With Bridge Alternative are summarized in the following table. As presented in the table, short-term construction emissions of GHG associated with development of the With Bridge Alternative are estimated to be approximately 7,653 MTCO₂e. This represents a low of 8 MTCO₂e and a high of 1,818 MTCO₂e emitted during each of the construction years (2019 through 2024). These construction GHG emissions are a one-time release and are comparatively much

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change.

TABLE 3.7-8: WITH BRIDGE ALTERNATIVE CONSTRUCTION GHG EMISSIONS (MITIGATED METRIC TONS/YR)

YEAR	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2019	0	1,012.96	1,012.96	0.22	0	1,018.53
2020	0	1,814.40	1,814.4	0.15	0	1,818.04
2021	0	1,751.43	1,751.43	0.13	0	1,754.75
2022	0	1,711.64	1,711.64	0.13	0	1,714.84
2023	0	1,336.19	1,336.19	0.09	0	1,338.45
2024	0	8.44	8.44	2.4e-004	0	8.44
Total	0	7,635.05	7,635.05	0.72	0	7,653.06

SOURCE: CALFEEMOD (v.2016.3.2).

Long-Term Operational GHG Emissions: Estimated GHG emissions associated with the buildout of the With Bridge Alternative with mitigation incorporated are summarized in the following table. As shown in the table, the annual GHG emissions associated with buildout of the With Bridge Alternative would be approximately 26,694 MTCO₂e with the above referenced mitigation incorporated.

TABLE 3.7-9: WITH BRIDGE ALTERNATIVE OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	666.24	666.24	0.03	0.01	670.53
Energy	0	3,597.19	3,597.19	0.21	0.07	3,623.17
Mobile	0	21,297.74	21,297.74	1.16	0	21,326.84
Waste	348.99	0	348.9942	20.63	0	864.62
Water	27.11	91.40	118.50	2.79	0.07	208.49
Total	376.10	25,652.57	26,028.67	24.82	0.15	26,693.65

SOURCE: CALFEEMOD (v.2016.3.2).

Conclusion: As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the With Bridge Alternative. The With Bridge Alternative would comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen.

The With Bridge Alternative would be consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths. The Project site is assumed for low density residential development in Appendix M of the RTP/SCS. The With Bridge Alternative would also comply with all applicable GHG Reduction Measures as provided within the City of Stockton

Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The proposed Project would also comply with the Development Review Process (DRP-1) GHG reduction measure provided within the Stockton Climate Action Plan.

The With Bridge Alternative would have a slightly less, but very similar GHG impact when compared to the proposed Project. Development of the With Bridge Alternative would generate a net increase in global GHG emissions. This is a **Significant and Unavoidable** Impact. This Alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this Alternative, the high density residential area and the commercial area would be decreased when compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

Short-Term Construction GHG Emissions: As presented in the table, short-term construction emissions of GHG associated with development of the General Plan 2035 Alternative are estimated to be approximately 13,781 MTCO₂e. This represents a low of 7 MTCO₂e and a high of 2,576 MTCO₂e emitted during each of the construction years (2019 through 2024). These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change, however, when compared to the proposed project there is significantly more construction related emissions.

TABLE 3.7-10: GENERAL PLAN 2035 ALTERNATIVE CONSTRUCTION GHG EMISSIONS (MITIGATED METRIC TONS/YR)

YEAR	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2019	0	1,177.06	1,177.06	0.23	0	1,182.79
2020	0	2,571.65	2,571.65	0.17	0	2,575.96
2021	0	2,482.22	2,482.22	0.16	0	2,486.16
2022	0	2,418.20	2,418.20	0.15	0	2,421.95
2023	0	1,887.91	1,887.91	0.11	0	1,890.54
2024	0	7.04	7.04	1.8e-004	0	7.04
Total	0	10,544.08	10,544.08	0.82	0.00	10,564.44

SOURCE: CALCEMOD (v.2016.3.2).

Long-Term Operational GHG Emissions: Estimated GHG emissions associated with the buildout of the General Plan 2035 Alternative with mitigation incorporated are summarized in Table 3.7-11. As shown in the tables, the annual GHG emissions associated with buildout of the General Plan 2035

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

Alternative would be approximately 29,357 MTCO₂e with the above referenced mitigation incorporated.

TABLE 3.7-11: GENERAL PLAN 2035 ALTERNATIVE OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	626.15	626.15	0.03	0.01	630.19
Energy	0	4,187.10	4,188.00	0.24	0.08	4,217.48
Mobile	0	23,120.77	23,120.77	1.26	0	23,152.34
Waste	406.31	0	406.31	24.01	0	1,006.61
Water	49.34	137.98	187.32	5.08	0.12	350.88
Total	455.64	28,072.00	28,527.65	30.63	0.22	29,357.49

SOURCE: CALFEEMOD (v.2016.3.2).

Conclusion: As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the General Plan 2035 Alternative. The General Plan 2035 Alternative would comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City would review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly more construction related emissions under this Alternative.

The General Plan 2035 Alternative would be consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths. The Project site is assumed for low density residential development in Appendix M of the RTP/SCS. The General Plan 2035 Alternative would also comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The General Plan 2035 Alternative is slightly inferior to the proposed Project, since GHG emissions associated with this Alternative (29,357 MT CO₂e) would be higher than those associated with the proposed Project (26,797 MT CO₂e).

Development of the General Plan 2035 Alternative would generate a net increase in global GHG emissions, and an increase over emissions that would occur under the proposed Project. This is a **Significant and Unavoidable** Impact. This Alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced

by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This Alternative would still establish a site for a K-8 school.

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the Reduced Project Alternative are summarized in the following table. The results of the modeling are included as Appendix B of this Draft EIR. As presented in the table, short-term construction emissions of GHG associated with development of the Reduced Project Alternative are estimated to be approximately 5,697 MTCO₂e. This represents a low of approximately 3 MTCO₂e and a high of 1,314 MTCO₂e emitted during each of the construction years (2019 through 2024). These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change. When compared to the proposed project there is less construction related emissions.

TABLE 3.7-12: REDUCED PROJECT ALTERNATIVE CONSTRUCTION GHG EMISSIONS (MITIGATED METRIC TONS/YR)

YEAR	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2019	0	901.09	901.09	0.22	0	906.52
2020	0	1,311.22	1,311.22	0.12	0	1,314.31
2021	0	1,262.39	1,262.39	0.11	0	1,265.21
2022	0	1,235.73	1,235.73	0.11	0	1,238.46
2023	0	967.46	967.46	0.08	0	969.43
2024	0	3.34	3.34	1.10e-004	0	3.34
Total	0	5,681.23	5,681.23	0.64011	0	5,697.27

SOURCE: CALFEEMOD (v.2016.3.2).

Long-Term Operational GHG Emissions: Estimated GHG emissions associated with the buildout of the Reduced Project Alternative with mitigation incorporated are summarized in the following table. As shown in the table, the annual GHG emissions associated with buildout of the Reduced Project Alternative would be approximately 17,017 MTCO₂e with the above referenced mitigation incorporated. When compared to the proposed project there is significantly less operation related emissions.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

TABLE 3.7-13: REDUCED PROJECT ALTERNATIVE OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	707.07	459.16	1,166.23	3.33	8.19e-003	1,251.82
Energy	0	2,361.65	2,361.65	0.13	0.05	2,378.61
Mobile	0	12,622.52	12,622.52	0.63	0	12,638.30
Waste	235.45	0	235.45	13.91	0	583.33
Water	21.89	70.76	92.64	2.26	0.05	165.28
Total	964.41	15,514.08	16,478.49	20.26	0.11	17,017.34

SOURCE: CALCEMOD (v.2016.3.2).

Conclusion: As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the Reduced Project Alternative. The Reduced Project Alternative will comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent, and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly less construction related emissions under this Alternative.

When compared to the proposed project, the Reduced Project Alternative would generate less greenhouse gases given that the project size is significantly reduced (17,017 MT CO₂e vs 26,797 MT CO₂e). The Reduced Project Alternative would be consistent with the goals, policies, and measures of the Stockton Climate Action Plan. The Reduced Project Alternative would comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Additionally, this alternative would have a net increase in emissions. This is a **Significant and Unavoidable** Impact. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This Alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This Alternative would still establish a site for K-8 school.

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the Reduced Intensity/Density Alternative are summarized in the following table. The results of the modeling are included as Appendix B of this Draft EIR. As presented in the table, short-term construction emissions of GHG associated with development of the Reduced Intensity/Density Alternative are estimated to be approximately 6,289 MTCO₂e. This represents a low of 4 and a high of 1,467 MTCO₂e emitted during each of the construction years (2019 through 2024). These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change. When compared to the proposed project there is less construction related emissions.

TABLE 3.7-14: REDUCED INTENSITY/DENSITY ALTERNATIVE CONSTRUCTION GHG EMISSIONS (MITIGATED METRIC TONS/YR)

YEAR	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2019	0	935.04	935.04	0.22	0	940.52
2020	0	1,464.13	1,464.13	0.13	0	1,467.39
2021	0	1,410.87	1,410.87	0.12	0	1,413.84
2022	0	1,380.10	1,380.10	0.11	0	1,382.97
2023	0	1,079.35	1,079.35	0.08	0	1,081.41
2024	0	3.70	3.71	1.10e-004	0	3.70
Total	0	6,273.19	6,273.20	0.66	0	6,289.83

SOURCE: CALEEMOD (v.2016.3.2).

Long-Term Operational GHG Emissions: Estimated GHG emissions associated with the buildout of the Reduced Intensity/Density Alternative with the previously identified mitigation incorporated are summarized in the following table. As shown below, the annual GHG emissions associated with buildout of the Reduced Intensity/Density Alternative would be approximately 17,415 MTCO₂e with the above referenced mitigation incorporated. When compared to the proposed project there is significantly less operation related emissions.

TABLE 3.7-15: REDUCED INTENSITY/DENSITY ALTERNATIVE OPERATIONAL GHG EMISSIONS (MITIGATED METRIC TONS/YR)

CATEGORY	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	535.31	535.31	0.02	9.55e-003	538.76
Energy	0	2,729.71	2,729.71	0.15	0.05	2,749.31
Mobile	0	13,287.13	13,287.13	0.69	0	13,304.39
Waste	268.76	0	268.76	15.88	0	665.84
Water	20.34	68.99	89.33	2.10	0.05	156.85
Total	289.10	16,621.15	16,910.25	18.85	0.1	17,415.16

SOURCE: CALEEMOD (v.2016.3.2).

Conclusion: As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the Reduced Intensity/Density Alternative. The Reduced Intensity/Density Alternative would comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly less construction related emissions under this Alternative.

When compared to the proposed project, the Reduced Project Alternative would generate less greenhouse gases given that the project size is significantly reduced (17,415 MT CO₂e vs. 26,797 MT CO₂e). The Reduced Intensity/Density Alternative would be consistent with the goals, policies, and measures of the Stockton Climate Action Plan. The Reduced Density/Intensity Alternative would comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Additionally, this alternative would have a net increase in emissions. This is a **Significant and Unavoidable** Impact. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Impact 3.7-3: The proposed Project would not result in a cumulative impact on climate change from increased Project-related greenhouse gas emissions. (Less than Significant and Less than Cumulatively Considerable)

Proposed Project:

Greenhouse gas emissions from a single project will not cause global climate change; however, greenhouse gas emission from multiple projects throughout a region or state could result in a cumulative impact with respect to global climate change.

In California, there has been extensive legislation passed with the goal of reducing greenhouse gas emissions. The legislative goals are as follows: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80 percent below the 1990 levels by the year 2050. To achieve these goals, the CARB has developed regional greenhouse gas emission reduction targets for the automobile and light truck sectors (the largest single source of greenhouse gas emissions) for 2020 and 2035. The regional greenhouse gas emission reduction targets for each region in California were established by the California Air Resources Board.

As described in Impact 3.7-2 above, implementation of the proposed Project will still generate GHG emissions that wouldn't otherwise exist without the proposed Project. Given the length of construction activities for a Project of this size, the construction emissions would be a long-term release of approximately 7,670 MTCO₂e. The operational emissions would be a long-term release totaling approximately 26,797 MTCO₂e. The City of Stockton must weigh the economic and social benefits of development against the environmental impacts associated with development. The City of Stockton's planning efforts including targeted growth that accommodates the economic and social needs of the community, while recognizing and seeking to mitigate environmental impacts when growth occurs.

The City adopted a Climate Action Plan in 2014. As described under Impact 3.7-1, the proposed Project is consistent with the adopted Stockton CAP. Section 15183.5 of the CEQA Guidelines allows for the tiering and streamlining of GHG emissions analysis, allowing lead agencies to analyze and mitigate the significant effects of GHG emissions if a qualified GHG reduction plan or Climate Action Plan is made available. In addition to being consistent with the Stockton CAP, the proposed Project is consistent with the SJCOG RTP/SCS in that it uses the same land use assumptions used by SJCOG in that document. The CARB has indicated that implementation of the RTP/SCS would enable SJCOG to achieve the GHG reduction targets for 2020 and 2035. Cumulative development within the City of Stockton would be evaluated for their consistency with the Stockton CAP and SJCOG RTP/SCS, which would include adherence to the GHG reduction measures that have been established. The proposed Project, and all cumulative projects would have the benefits of the States GHG reduction measures that broadly affect the State (i.e. Pavely, Low Carbon Fuels, CalGreen, LGWP refrigerant standards, etc.). The proposed project is consistent with local plans that are specifically designed to contribute to a reduction in GHG emissions. However, even with consistency with the Stockton CAP, the SJCOG RTP/SCS, and all state regulations, there would be a

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

net increase in GHG emissions. This is a **Significant and Unavoidable** impact and is Cumulatively Considerable.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not generate GHG emissions that may have a significant impact on the environment. Under this Alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this Alternative is environmentally superior relative to this topic.

With Bridge Alternative:

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the With Bridge Alternative. The With Bridge Alternative would comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen.

The With Bridge Alternative would be consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths. The Project site is assumed for low density residential development in Appendix M of the RTP/SCS. The With Bridge Alternative would also comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The proposed Project would also comply with the Development Review Process (DRP-1) GHG reduction measure provided within the Stockton Climate Action Plan.

The With Bridge Alternative would have a slightly less, but very similar GHG impact when compared to the proposed Project. The With Bridge Alternative would comply with the City of Stockton Climate Action Plan, which qualifies under Section 15183.5 of the CEQA Guidelines. The With Bridge Alternative would incorporate the mitigation measures provided *in Section 3.3: Air Quality* of this DEIR. Nevertheless, development of the With Bridge Alternative would generate a net increase in global GHG emissions. This is a **Significant and Unavoidable** impact. This Alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the General Plan 2035 Alternative. The General Plan 2035 Alternative would comply with Title 24, Part

6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City would review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly more construction related emissions under this Alternative.

The General Plan 2035 Alternative would be consistent with the goals, policies, and measures of the RTP/SCS and the Stockton Climate Action Plan. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths. The Project site is assumed for low density residential development in Appendix M of the RTP/SCS. The General Plan 2035 Alternative would also comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The General Plan 2035 Alternative is slightly inferior to the proposed Project, since GHG emissions associated with this Alternative (29,357 MT CO₂e) would be higher than those associated with the proposed Project (26,797 MT CO₂e).

The General Plan 2035 Alternative would comply with the City of Stockton Climate Action Plan, which qualifies under Section 15183.5 of the CEQA Guidelines. The General Plan 2035 Alternative would incorporate the mitigation measures provided in *Section 3.3: Air Quality* of this DEIR. However, development of the General Plan 2035 Alternative would generate a net increase in global GHG emissions, and an increase over emissions that would occur under the proposed Project. This is a **Significant and Unavoidable** impact. This Alternative is inferior relative to this topic.

Reduced Project Alternative:

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the Reduced Project Alternative. The Reduced Project Alternative will comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent, and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly less construction related emissions under this Alternative.

When compared to the proposed project, the Reduced Project Alternative would generate less greenhouse gases given that the project size is significantly reduced (17,017 MT CO₂e vs 26,797 MT CO₂e). The Reduced Project Alternative would be consistent with the goals, policies, and measures of the Stockton Climate Action Plan. The Reduced Project Alternative would comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan,

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Additionally, this project would result in a net increase in GHG emissions. This is a **Significant and Unavoidable** impact. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Reduced Intensity/Density Alternative:

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the Reduced Intensity/Density Alternative. The Reduced Intensity/Density Alternative would comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent and install low pollutant-emitting materials. The City will review individual building plans as they are prepared to ensure that they comply with the latest Title 24 requirements, including CALGreen. It is noted that when compared to the proposed project there is significantly less construction related emissions under this Alternative.

When compared to the proposed project, the Reduced Project Alternative would generate less greenhouse gases given that the project size is significantly reduced (17,415 MT CO₂e vs. 26,797 MT CO₂e). The Reduced Intensity/Density Alternative would be consistent with the goals, policies, and measures of the Stockton Climate Action Plan. The Reduced Density/Intensity Alternative would comply with all applicable GHG Reduction Measures as provided within the City of Stockton Climate Action Plan, including Measures Energy-1 and Trans-3 of the Climate Action Plan, by complying with the CALGreen requirements and providing transit amenities on-site. The Project site is currently served by the San Joaquin RTD and would incorporate bus turnouts and transit improvements where requested by the San Joaquin RTD, continuous public sidewalks and/or multi-use trails adjacent to all proposed public streets and paving and striping for bike lanes/paths.

This Alternative has a slight conflict with the RTP/SCS, given that development would be lower than the SJCOG's land use assumptions for this site. The RTP/SCS land use assumptions factor in anticipated population growth in the region, and the density for particular areas of the County to accommodate that population. The circulation network is then designed and modeled. If the project site is not able to accommodate the density assumed within the RTP/SCS for this area, then

it would be anticipated that additional development would be warranted in another location to accommodate the population. This is a **potentially significant** impact given that a conflict is created. Additionally, this project would result in a net increase in GHG emissions. This is a **Significant and Unavoidable** impact. Compared to the proposed Project, this Alternative is inferior relative to this topic.

Impact 3.7-4: Implementation of the proposed Project would not result in the inefficient, wasteful, or unnecessary use of energy resources. (Less than Significant)

Proposed Project:

Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce “wasteful, inefficient and unnecessary” energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered “wasteful, inefficient, and unnecessary” if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed Project incorporates residential, commercial, and public uses. The amount of energy used by the proposed Project during operation would directly correlate with the number, size, and type of Project buildings, the energy efficiency of associated building equipment and appliances, and outdoor lighting, and energy use associated with other on-site activities. Other Project energy uses include fuel used by vehicle trips generated during Project construction and operation, fuel used by off-road construction vehicles during construction activities, and fuel used by Project maintenance activities during Project operation.

The following discussion provides a detailed calculation of energy usage expected for the proposed Project, for the unmitigated and mitigated scenarios, as provided by applicable modelling software (i.e. CalEEMod v2016.3.2 and the California Air Resource Board’s EMFAC2014). Additional assumptions and calculations are provided within Appendix B.

Electricity and Natural Gas

Electricity and natural gas used by the proposed Project would be used primarily to generate energy for on-site buildings, lighting, and water pumping, treatment, and conveyance. According to CalEEMod’s *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

Natural Gas: Natural gas energy consumption (and GHG emissions from natural gas) by land uses within the proposed Project is presented in the following table.

TABLE 3.7-16: NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	B10-CO ₂	NB10-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kBTU	MT/YR					
Apartments Low Rise	4,110,000	0	219.52	219.52	4.21e-003	4.02e-003	220.82
Elementary School	593,793	0	31.69	31.69	6.10e-004	5.80e-004	31.88
Regional Shopping Center	1,187,550	0	63.37	63.37	1.21e-003	1.16e-003	63.75
Single Family Housing	30,045,700	0	1,603.36	1,603.36	0.03	0.03	1,612.88
Total	35,937,043	0	1,917.93	1,917.93	0.04	0.04	1,929.33

SOURCE: CALCEMOD (v.2016.3.2).

Electricity: Electricity energy consumption (and GHG emissions from Electricity) by land uses within the proposed Project is presented in the following table.

TABLE 3.7-17: ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (UNMITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kWh/YR	MT/YR			
Apartments Low Rise	1,528,040	201.00	0.02	4.16e-003	202.74
Elementary School	353,642	46.52	4.65e-003	9.60e-004	46.92
Regional Shopping Center	1,196,690	157.41	0.02	3.26e-003	158.78
Single Family Housing	9,820,120	1,291.76	0.13	0.03	1,302.95
Total	12,898,492	1,696.69	0.17	0.04	1,711.39

SOURCE: CALCEMOD (v.2016.3.1).

On-road Vehicles

Operation: The proposed Project would generate vehicle trips during its operational phase. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths were generated by CalCEMod. These values are provided by the individual districts or use a default average for the state, depending on the location of the proposed project (ENVIRON, 2013). CalCEMod also generated an assumed (default) breakdown of trip types: residential trip types were derived from the 1999 Caltrans Statewide Travel Survey, and commercial trip types were provided from the Institute of Transportation Engineers (ITE) and an analysis of information provided for the South Coast Air Basin (SCAB) (ENVIRON, 2013). Based on trips lengths provided by these sources and the trip generation as provided by KD Anderson, the proposed Project is estimated to generate a total of approximately 160,273 average daily vehicle miles travelled

(Average Daily VMT) at project Buildout. Using fleet mix data provide by CalEEMod (v2016.3.2), Year 2020 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, weighted average MPG factors for gasoline and diesel were derived. Therefore, upon full Buildout, the proposed Project would generate operational vehicle trips that would use a total of approximately 5,707 gallons of gasoline and 1,786 gallons of diesel per day, or 2,082,903 gallons of gasoline and 651,792 gallons of diesel per year.

Construction: The proposed Project would also generate on-road vehicle trips during project construction (from construction workers and vendors travelling to and from the Plan Area). De Novo Planning Group estimated the vehicle fuel consumed during these trips based the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and Year 2020 gasoline and diesel MPG factors provided by EMFAC2014 (Year 2020 factors were used for the entire construction schedule, for the purposes of simplicity). Additionally, it was assumed that all construction worker light duty passenger cars and truck trips use gasoline as a fuel source, and all medium and heavy-duty vendor trucks use diesel fuel), for the sake of simplicity. The following table describes gasoline and diesel fuel consumed during each construction phase (in aggregate).

TABLE 3.7-18: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	# OF DAYS	TOTAL DAILY WORKER TRIPS ^(A)	TOTAL DAILY VENDOR TRIPS ^(A)	TOTAL GALLONS OF GASOLINE FUEL ^(B)	TOTAL GALLONS OF DIESEL FUEL ^(B)
Site Preparation	20	18	--	157	--
Grading	180	20	--	1,568	--
Building Construction	1,047	722	188	329,203	208,796
Paving	80	15	--	523	--
Architectural Coating	1,068	144	--	66,975	--
Total	2,395	N/A	N/A	398,426	208,796

NOTE: ^(A) PROVIDED BY CAL EEMOD. ^(B) SEE APPENDIX B FOR FURTHER DETAIL

SOURCE: CAL EEMOD (v.2016.3.2); EMFAC2014.

As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed Project would occur during the building construction phase. There is no feasible mitigation available that would reduce on-road mobile vehicle GHG emissions generated by the project construction activities (requiring the use of electric construction vehicles was deemed infeasible, given price and availability concerns). See Appendix B for a detailed accounting of construction on-road vehicle fuel usage estimates.

Off-road Vehicles (Construction)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed project includes: forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO₂ emissions expected to be generated by the proposed project (as provided by the CalEEMod output), and standard conversion factors (as provided by the U.S. Energy Information Administration), the proposed project would use a total

of approximately 53,166 gallons of diesel fuel for off-road construction vehicles. Detailed calculations are provided in Appendix B.

Other

Proposed project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance for project residences would require approximately eight individuals eight hours day per week, or 3,328 hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the proposed project would require the use of approximately 1,664 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar projects.

The proposed Project would also utilize on-site renewable sources of energy. In particular, portions of the proposed Project would incorporate rooftop solar PV (as provided under Mitigation Measure 3.3-5, which requires the developer to provide all prospective buyers of single-family residential units the option to pre-install rooftop solar). However, it is uncertain how many proposed Project structures would take advantage of the opportunity to install rooftop solar; therefore, there is no feasible way to calculate the amount of energy that would be saved by produced by such installations. Therefore, this potential source of renewable energy for portions of the proposed Project is not quantified herein.

Conclusion

The proposed Project is in compliance with all applicable Federal, State, and local regulations regulating energy usage. For example, PG&E, the electricity and natural gas supplier to the proposed project, is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33% mix of renewable energy resources by 2020, and 50% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standard ("part 6"), would be applicable to the proposed project. Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time.

Furthermore, as described previously, with implementation of the mitigation measures as provided by *Section 3.3: Air Quality* of this DEIR, Project energy usage would be reduced (including from electricity, natural gas, and on-road vehicle gasoline and diesel sources). Overall, with the incorporation of mitigation measures and compliance with State standards and regulations, the proposed Project would avoid and reduce inefficient, wasteful, and unnecessary consumption of energy. The proposed Project would comply with all existing energy standards, including those established by the City of Stockton, the local air district (SJVAPCD), and the State of California, and would not be expected to result in significant adverse impacts on energy resources. For these

reasons, the proposed Project would not cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the *CEQA Guidelines*. This is a **less than significant** impact.

Alternatives

The following provides an analysis of the on-site electricity and natural gas usage of each of the Alternatives. It should be noted that, since there is no mitigation for the “energy” (i.e. natural gas/electricity) category within CalEEMod, none of the Alternatives show a reduction in energy usage after implementation of the mitigation measures included within this Draft EIR. Therefore, the following tables represent data for both the unmitigated and mitigated scenarios.

Separately, off-road and on-road construction vehicle energy usage, as well as on-road transportation energy usage during project operation, would be similar to the estimates provided for the proposed Project (see the above Appendix F analysis for the proposed Project). The proposed Project estimates for these sources serve as a proxy for the following Alternatives.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not generate new energy consumption that may have a significant impact on the environment. Under this Alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Energy Consumption: “Energy” is one of the categories that were modeled for GHG emissions. Under the With Bridge Alternative, the total GHG emissions generated from the “Energy” category is approximately 3,623.17 MTCO₂e with and without mitigation. The following discussion includes a more detailed breakdown of energy consumption in terms of natural gas and electricity consumption.

Natural Gas: Unmitigated natural gas energy consumption by land uses within the With Bridge Alternative is presented in Table 3.7-19 below. This table also includes the GHG emissions that are generated by natural gas use.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

TABLE 3.7-19: WITH BRIDGE ALTERNATIVE NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	B ₁₀ -CO ₂	NB ₁₀ -CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kBTU	MT/YEAR					
Apartments Low Rise	4,113,560	0	219.51	219.52	4.21e-003	4.02e-003	220.82
Elementary School	593,793	0	31.69	31.69	6.10e-004	5.80e-004	31.88
Regional Shopping Center	1,187,550	0	63.37	63.37	1.21e-003	1.16e-003	63.75
Single Family Housing	29,864,900	0	1,593.70	1,593.70	0.03	0.03	1,603.18
Total	35,800,000	0	1,908.28	1,908.28	0.04	0.04	1,919.62

SOURCE: CALFEEMOD (v.2016.3.2).

Electricity: Unmitigated and mitigated electricity energy consumption by land uses within the With Bridge Alternative is presented in Table 3.7-20 below. This table also includes the GHG emissions that are generated by the electricity use.

TABLE 3.7-20: WITH BRIDGE ALTERNATIVE ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kWH/YR	MT/YEAR			
Apartments Low Rise	1,528,040	201.00	0.02	4.16e-003	202.74
Elementary School	353,642	46.52	4.65e-003	9.60e-004	46.92
Regional Shopping Center	1,196,690	157.41	0.02	3.26e-003	158.78
Single Family Housing	9,761,010	1,283.98	0.13	0.03	1,295.11
Total	12,839,382	1,688.91	0.17	0.04	1,703.55

SOURCES: CALFEEMOD (v.2016.3.2).

Under this alternative, a **less than significant** impact to energy would occur. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Energy Consumption: “Energy” is one of the categories that were modeled for GHG emissions. Under the General Plan 2035, the total GHG emissions generated from the “Energy” category is approximately 4,217.48 MTCO₂e with and without mitigation. The following discussion includes a more detailed breakdown of energy consumption in terms of natural gas and electricity consumption.

Natural Gas: Unmitigated natural gas energy consumption by land uses within the General Plan 2035 presented in Table 3.7-21 below. This table also includes the GHG emissions that are generated by natural gas use.

TABLE 3.7-21: GENERAL PLAN 2035 ALTERNATIVE NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	B ₁₀ -CO ₂	NB ₁₀ -CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kBTU	MT/YEAR					
Apartments Low Rise	4,113,560	0	219.52	219.52	4.21e-003	4.02e-003	220.82
General Light Industry	7,585,310	0	404.78	404.7	7.76e-003	7.42e-003	407.19
Regional Shopping Center	1,376,060	0	73.43	73.43	1.41e-003	1.35e-003	73.87
Single Family Housing	27,539,800	0	1,469.63	1,469.63	0.03	0.03	1,478.36
Total	40,614,730	0	2,167.36	2,167.36	0.04	0.04	2,180.24

SOURCE: CALEEMOD (v.2016.3.2).

Electricity: Unmitigated and mitigated electricity energy consumption by land uses within the General Plan 2035 presented in Table 3.7-22 below. This table also includes the GHG emissions that are generated by the electricity use.

TABLE 3.7-22: GENERAL PLAN 2035 ALTERNATIVE ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kWh/YR	MT/YEAR			
Apartments Low Rise	1,528,040	201.00	0.02	4.16e-003	202.74
General Light Industry	3,438,620	452.32	0.05	9.36e-003	456.24
Regional Shopping Center	1,386,650	182.40	0.02	3.77e-003	183.98
Single Family Housing	9,001,070	1,184.02	0.12	0.03	1,194.28
Total	15,354,380	2,019.74	0.20	0.04	2,037.24

SOURCES: CALEEMOD (v.2016.3.2).

Under this alternative, a **less than significant** impact to energy would occur. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Energy Consumption: “Energy” is one of the categories that were modeled for GHG emissions. Under the Reduced Project Alternative, the total GHG emissions generated from the “Energy” category is approximately 2,378.61 MTCO₂e with and without mitigation. The following discussion includes a more detailed breakdown of energy consumption in terms of natural gas and electricity consumption.

Natural Gas: Unmitigated natural gas energy consumption by land uses within the Reduced Project Alternative is presented in Table 3.7-23 below. This table also includes the GHG emissions that are generated by natural gas use.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

TABLE 3.7-23: REDUCED PROJECT ALTERNATIVE NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	BIO-CO ₂	NBIO-CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kBTU	MT/YEAR					
Apartments Low Rise	2,734,310	0	145.91	145.91	2.80e-003	2.68e-003	146.78
Elementary School	593,793	0	31.69	31.69	6.10e-004	5.80e-004	31.88
Single Family Housing	20,796,900	0	1,109.80	1,109.80	0.02	0.02	1,116.40
Total	24,125,003	0	1,287.40	1,287.40	0.02	0.02	1,295.05

SOURCE: CALFEEMOD (V.2016.3.2).

Electricity: Unmitigated and mitigated electricity energy consumption by land uses within the Reduced Project Alternative is presented in Table 3.7-24 below. This table also includes the GHG emissions that are generated by the electricity use.

TABLE 3.7-24: REDUCED PROJECT ALTERNATIVE ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kWh/YR	MT/YEAR			
Apartments Low Rise	1,015,700	133.61	0.01	2.76e-003	134.76
Elementary School	353,642	46.52	4.65e-003	9.60e-004	46.92
Single Family Housing	6,797,240	894.12	0.09	0.019	901.87
Total	8,166,582	1,074.25	0.11	0.02	1,083.56

SOURCES: CALFEEMOD (V.2016.3.2).

Under this alternative, a **less than significant** impact to energy would occur. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Energy Consumption: “Energy” is one of the categories that were modeled for GHG emissions. Under the Reduced Intensity/Density Alternative, the total GHG emissions generated from the “Energy” category is approximately 2,749.31 MTCO₂e with and without mitigation. The following discussion includes a more detailed breakdown of energy consumption in terms of natural gas and electricity consumption.

Natural Gas: Unmitigated natural gas energy consumption by land uses within the Reduced Intensity/Density Alternative is presented in Table 3.7-25 below. This table also includes the GHG emissions that are generated by natural gas use.

TABLE 3.7-25: REDUCED INTENSITY/DENSITY ALTERNATIVE NATURAL GAS USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	NATURAL GAS USE	B ₁₀ -CO ₂	NB ₁₀ -CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kBTU	MT/YEAR					
Apartments Low Rise	3,290,850	0	175.61	175.61	3.37e-003	3.22e-003	176.66
Elementary School	593,793	0	31.69	31.69	6.10e-004	5.80e-004	31.88
Single Family Housing	24,026,300	0	1,282.13	1,282.13	0.02	0.02	1,289.75
Total	27,910,943	0	1,489.43	1,489.43	0.029	0.03	1,498.28

SOURCE: CAL EEMOD (v.2016.3.2).

Electricity: Unmitigated and mitigated electricity energy consumption by land uses within the Reduced Intensity/Density Alternative is presented in Table 3.7-26 below. This table also includes the GHG emissions that are generated by the electricity use.

TABLE 3.7-26: REDUCED INTENSITY/DENSITY ALTERNATIVE ELECTRICITY USE AND GHG EMISSIONS BY LAND USE (MITIGATED OPERATIONAL YEAR)

LAND USE	ELECTRICITY USE	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
	kWh/YR	MT/YEAR			
Apartments Low Rise	1,222,430	160.80	0.02	3.33e-003	162.19
Elementary School	353,642	46.52	4.65e-003	9.60e-004	46.92
Single Family Housing	7,852,720	1,032.96	0.10	0.02	1,041.91
Total	9,428,792	1,240.28	0.12	0.03	1,251.03

SOURCES: CAL EEMOD (v.2016.3.2).

Under this alternative, a **less than significant** impact to energy would occur. Compared to the proposed Project, this alternative is superior relative to this topic.

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3.8.1 INTRODUCTION

The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials related to the Project site and general vicinity, and to analyze the potential for exposure of people to hazards and hazardous materials as the Project is built and operated in the future. This section is based in part on the *Stockton General Plan 2035* (City of Stockton 2007) and the *Stockton General Plan 2035 Environmental Impact Report* (City of Stockton 2007). Additionally, the results of the *Environmental FirstSearch Report Target Property: Bear Creek East Specific Plan* (2010) are incorporated into this section. The results of this report are included as Appendix H of this EIR. There were no comments received during the NOP scoping process related to this environmental topic.

3.8.2 ENVIRONMENTAL SETTING

PHYSICAL SETTING

Project Location

The Project site is located along the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project area is adjacent to the City of Stockton city limits to the east, within the Stockton Sphere of Influence (SOI) (as defined in the Stockton General Plan 2035), and within the City of Stockton Urban Services Boundary. The Project site is located at the southeast of the intersection of West Lane and Eight Mile Road. The Project site is south of SR 120, approximately four miles southwest of downtown Manteca adjacent to the Oakwood Shores neighborhood. Figures 2-1 and 2-2 found in Section 2.0 illustrate the regional location and Project vicinity.

Existing Site Uses

The current uses on the 318.82-acre Project site are predominantly agricultural and industrial. The Project site consists largely of active agricultural fields (roughly 253 acres in production). The Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site. The industrial portion of the Project site consists of two warehouses and associated parking. An irrigation catch pond runs along the northern boundary of the Project site. Power transmission lines are located along West Lane and Eight Mile Road. Additionally, power lines are present within the Project site running north and south roughly bisecting the Project site.

Existing Surrounding Uses

The Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The Project site is bounded by West Lane to the west, Eight Mile Road to the north, the Union Pacific Railroad (UPRR) and existing industrial development to the east, and Bear Creek and the associated Bear Creek Levee to the south.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Uses immediately adjacent to the Project site include a truck and trailer repair service establishment to the northwest across Eight Mile Road. Other existing uses north of the Project site include large-lot single family residences and agricultural land. Immediately to the east of the Project site are industrial land uses, including several large warehouses and a large storage lot. Farmland lies immediately west and south of the Project site. Other nearby uses include Ronald McNair High School located immediately southwest of the Project site. Figure 2-5 in Section 2.0 shows aerial imagery of the current existing site uses within the Project site.

Site Topography

The Project site is relatively flat and ranges in elevation from approximately 25 to 35 feet above sea level as shown in Figure 2-3.

Site Soils

The NRCS Web Soil Survey indicates the presence of two soil series occurring within the Project site. Table 3.8-1 identifies the soils found on the Project site.

TABLE 3.8-1: NRCS SOIL SERIES INFORMATION

<i>SERIES</i>	<i>DESCRIPTION</i>	<i>SOURCE MATERIAL</i>	<i>DRAINAGE</i>	<i>PERCENT OF AOI</i>
Jacktone	Jacktone clay, 0 to 2 percent slopes	Alluvium derived from mixed sources	Somewhat poorly drained	72.48
Stockton	Stockton clay, 0 to 2 percent slopes	Alluvium derived from mixed rock sources	Somewhat poorly drained	24.37

SOURCE: NRCS WEB SOIL SURVEY 2016.

HAZARDS ASSESSMENT

For the purposes of this EIR, “hazardous material” is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

“Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous waste” is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or

potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitability, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.
- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

There are countless categories of hazardous materials and hazardous wastes that could be found on any given property based on past uses. Some common examples include agrichemicals (chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as Mecoprop (MCP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE)), petroleum based products (oil, gasoline, diesel fuel), a variety of chemicals including paints, cleaners, and solvents, and asbestos-containing or lead-containing materials (e.g., paint, sealants, pipe solder).

Site Reconnaissance

Site reconnaissance was conducted in 2002, 2003, 2004, and 2005 as part of the previous several environmental site assessments that were prepared for each of the applicant/landowners. The site was observed to be currently used for agricultural and industrial uses. No indication of spillage or staining was observed.

Historical Use Information

Historical information was reviewed to develop a history of the previous uses on the proposed Project site and surrounding area, in order to evaluate the Project site and adjoining properties for evidence of Recognized Environmental Conditions. Standard historical sources were reviewed during the preparation of this report, including the following, as available:

AERIAL PHOTOGRAPHS

Aerial photographs of the proposed Project site and general vicinity were reviewed. In 1993, the Project site contained one ranchette style residential structure in the southwest corner and some industrial uses in the north-central portion of the site. Agricultural operations appear to have occurred throughout the majority of the Project site during this time. By 2002, the industrial uses in the north-central portion of the site had approximately doubled in size. By 2006, the ranchette style residential structure had been demolished and the industrial uses had expanded to their current size and uses. From 2007 to present, the Project site has remained in agricultural use with the industrial uses in the north-central portion of the site.

ENVIRONMENTAL RECORDS

De Novo Planning Group performed a search of local, state, and federal agency databases for the proposed Project site and known contaminated sites in the vicinity. One of the on-site industrial uses, Pacific Bell, is listed on the GeoTracker database as a leaking underground storage tank (LUST) cleanup site. However, the cleanup was completed and the case was closed as of November 27, 1996. No other parcels in the proposed Project site were found to contain any known contamination.

The U.S. Environmental Protection Agency (EPA) Toxic Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. The TRI database does not list data on disposal or other releases of toxic chemicals in the Project site (USEPA, 2015). The nearest TRI site is located at 3003 E. Hammer Lane, approximately 1.75 miles south of the Project site.

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The proposed Project site does not have any active or planned solid waste facilities listed in the database. The nearest planned facility, the Valley Landscaping Composting Facility, is located approximately 2.7 miles north of the Project site.

None of the records reviewed for the Project site indicate that a Recognized Environmental Condition is associated with the proposed Project site.

DATABASES

There is a broad list of federal and state databases that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List: The National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites is EPA's database of more than 1,200 sites designated or proposed for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. The proposed Project site is not listed in this database.

RCRIS System: The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment. The proposed Project site is not listed in this database.

CERCLIS Data: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The proposed Project site is not listed in this database.

CORRACTS: Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity. The proposed Project site is not listed in this database.

Cortese Database: The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (Cal-EPA) and are found in the GeoTracker database. The proposed Project area is not listed in this database.

GeoTracker has replaced past databases, such as the Leaking Underground Storage Tank Information System (LUSTIS) and the Underground Storage Tank (UST) database. Permitted USTs are not located in the Project site. The nearest permitted UST is located at an ARCO AM/PM, located approximately 0.6 miles south of the Project site.

Additionally, various other State and Federal databases were searched as part of the *Environmental FirstSearch Report Target Property: Bear Creek East Specific Plan* (2010). The proposed Project site is not listed on any of these databases.

Hazardous Material Sites

As noted above, the State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5

3.8 HAZARDS AND HAZARDOUS MATERIALS

requires the Cal EPA to annually update the Cortese List. The DTSC is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list.

The California DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. There are no sites listed in the Envirostor database within the proposed Project site. The nearest site listed on the Envirostor database is located at 350 E. Wakefield Road, approximately 0.5 miles southwest of the Project site. GeoTracker is a geographic information system (GIS) that provides online access to environmental data and is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Searches of the above resources and records identified two hazardous material sites within 0.5 miles of the Project area known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. The terms "release" or "occurrence" include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping. Table 3.8-2 displays the known hazardous material sites within 1.5 miles of the Project area with a description of the hazards provided. One of the on-site industrial uses, Pacific Bell, is listed on the GeoTracker database as a leaking underground storage tank (LUST) cleanup site. However, the cleanup was completed and the case was closed as of November 27, 1996. No other parcels in the proposed Project area were found to contain any known contamination. One open case, the ARCO AM/PM permitted UST, is located approximately 0.6 miles south of the Project site.

TABLE 3.8-2: GEOTRACKER HAZARDOUS MATERIAL RELEASE SITES WITHIN 1.5 MILES OF PROJECT AREA

SITE NAME	TYPE	CLEANUP STATUS	ADDRESS
ARCO AM/PM	Permitted UST	--	9484 West Lane
Pacific Bell	LUST Cleanup Site	Completed – Case Closed as of 1996	2300 Eight Mile Road
Stockton/Lodi KOA Campground	LUST Cleanup Site	Completed – Case Closed as of 1996	2851 Eight Mile Road
The Fuel Market	LUST Cleanup Site	Completed – Case Closed as of 1995	10878 Highway 99 N.
West Lane Market	LUST Cleanup Site	Completed – Case Closed as of 2002	9484 West Lane

NOTE: LUST = LEAKING UNDERGROUND STORAGE TANK, UST = UNDERGROUND STORAGE TANK.

SOURCE: SWRCB, GEOTRACKER, 2015.

In addition to sites listed above, the proposed Project site and the surrounding areas do not contain identified oil and gas monitoring wells.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City of Stockton Planning Area is subject to various federal, state, and local regulations. There are no designated routes within the City of Stockton for the transportation of inhalation hazards in bulk packaging pursuant to Division 14.3 (commencing with Section 32100) of the Vehicle Code or radioactive materials subject to Section

3300 of the Vehicle Code, respectively. Consequently, bulk inhalation hazard materials or radioactive materials are prohibited from traveling on roads through the City.

In addition, hazardous materials are routinely transported on UPRR lines that are along the eastern boundary of the Project site. The risk of accidents, and more specifically accidents involving hazardous materials, is relatively low. The U.S. Department of Transportation (DOT) Federal Railroad Administration found the UPRR company train accident rate to be 4.18 train accidents per one million train miles traveled, resulting in a less than 0.001 percent chance of an accident. Risk of a railroad accident containing hazardous materials is considered much lower, as only an average of eight accidents involving hazardous material spills occur annually in California.

The UPRR Company does implement a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172 Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. The plan includes requirements to enhance the security of transported hazardous materials and ensures proper cleanup procedures in the instance of an accidental release.

FIRE HAZARDS

Wildfires are a major hazard in the State of California. Wildfires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wildfires have a role in the County's ecosystem, wildfires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Although the central portions of the Stockton Planning Area are highly urbanized, the northern and eastern portions of the Planning Area are more susceptible to wildland fires due to potential fuel loads (grassland and other vegetation). The Project site is located in the northern Stockton SOI, which is predominantly under agricultural or urban use. This area has a low fire hazard risk.

3.8.3 REGULATORY SETTING

FEDERAL

The primary federal agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the EPA, Department of Labor Occupational Safety and Health Administration (OSHA), and the DOT. Several laws governing the transport, storage, and use of hazardous materials are governed by these agencies as well as oversight for contaminated sites cleanup. Federal laws and regulations that are applicable to hazards and hazardous materials are presented below.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation

to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the Act) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The Act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

STATE

The primary state agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the California Office of Emergency Services (OES), California Environmental Protection Agency (Cal-EPA), DTSC, California Department of Transportation (Caltrans), California Highway Patrol (CHP), California Water Resources Control Board, and the California Air Resources Board. Several laws governing the generation, transport, and disposal of hazardous materials are administered by these agencies. State regulations that are applicable to hazards and hazardous materials are presented below.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Code of Regulations Title 22 and Title 26

The California Code of Regulations (CCR) Title 22 provides state regulations for hazardous materials, and CCR Title 26 provides regulation of hazardous materials management. In 1996, Cal/EPA established the “Unified Hazardous Waste and Hazardous Materials Management Regulatory Program” (Unified Program) which consolidated the six administrative components of hazardous waste and materials into one program.

LOCAL

City of Stockton General Plan

The following goal and policies of the Stockton General Plan related to hazards and hazardous materials are applicable to the proposed Project.

Health & Safety Element

GENERAL HEALTH AND SAFETY GOAL

- HS-1. To protect the community from injury and damage resulting from natural catastrophes and hazardous conditions.

GENERAL HEALTH AND SAFETY POLICY

- HS-1.1. Development Constraints. The City shall permit development only in areas where the potential danger to the health and safety of people can be mitigated to an acceptable level.

HAZARDOUS MATERIALS GOAL

- HS-5. To minimize the risk to City residents and property associated with the transport, distribution, use, and storage of hazardous materials.

HAZARDOUS MATERIALS POLICIES

- HS-5.2. Hazardous Materials. The City shall require that hazardous materials are used, stored, transported, and disposed of within the city in a safe manner and in compliance with local, state, and federal safety standards.
- HS-5.5. Hazardous Materials Inventory. The City shall require, as appropriate and as a component of the environmental review process, a hazardous materials inventory for project sites, including an assessment of materials and operations for any development applications. Particular attention should be paid to land that previously contained agricultural uses.

3.8 HAZARDS AND HAZARDOUS MATERIALS

- HS-5.8. Compatibility with Surrounding Land Uses. The City shall use the development review process to ensure compatibility between hazardous material users and surrounding land use.

EMERGENCY OPERATIONS PLAN GOAL

- HS-7. To develop and maintain emergency preparedness programs and emergency health services in order to protect the public.

Land Use Element

RESIDENTIAL DEVELOPMENT LAND USE GOAL

- LU-3. To promote a variety of housing types and densities throughout the City that address the housing needs of various age and socio-economic groups.

RESIDENTIAL DEVELOPMENT LAND USE POLICIES

- LU-3.7. Incompatible Uses. The City shall protect existing residential neighborhoods from the encroachment of incompatible activities and land uses (i.e., traffic, noise) and environmental hazards (i.e., flood, soil instability).
- LU-3.9. Conflicting Uses. The City shall designate new residential developments in areas that will not create conflicts with existing or planned industrial or intensive commercial uses.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. The San Joaquin County Department of Environmental Health is the CUPA designated for San Joaquin County. The San Joaquin County Department of Environmental Health is responsible for the implementation of statewide programs within its jurisdiction, including: Underground storage of hazardous substances (USTs), Hazardous Materials Business Plan (HMP) requirements, California Accidental Release Prevention (Cal-ARP) program, etc. Implementation of these programs involves permitting, inspecting, providing education/guidance, investigations, and enforcement.

Project Review Guidelines for the Airport Land Use Commission

The Project Review Guidelines for the Airport Land Use Commission (San Joaquin Council of Governments, 2013) serve to augment the procedural framework established within the Airport Land Use Compatibility Plans (ALUCPs) for San Joaquin County. The Airport Land Use Commission (ALUC) has established an Airport Influence Area (AIA) and Land Use Compatibility Zones for the six San Joaquin County Airports. For a local jurisdiction, whose lands fall within the AIA for a particular airport, certain project types must be referred to ALUC for a Consistency Determination.

3.8.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures 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.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.8-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant with Mitigation)

Proposed Project:

Construction Phase Impacts

Construction equipment and materials would likely require the use of petroleum-based products (oil, gasoline, diesel fuel), and a variety of chemicals including paints, cleaners, and solvents. The use of these materials at a construction site will pose a reasonable risk of release into the environment if not properly handled, stored, and transported. A release into the environment could pose significant impacts to the health and welfare of people and/or wildlife, and could result in contamination of water (groundwater or surface water), habitat, and countless important resources.

The three basic exposure pathways through which an individual can be exposed to a hazardous material are inhalation, ingestion of contaminated soil, air, water, or food, and bodily contact (also referred to as dermal exposure). Exposure can come as a result of an accidental release of hazardous materials during transportation, storage, or handling. Disturbance of contaminated subsurface soil during construction can also cause exposures to workers, the public or the environment through excavation, grading, stockpiling, loading, or transportation of soils.

Like most agricultural and farming operations in the Central Valley, agricultural practices on the Project site have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as MCP, Dinoseb, chlordane, DDT, and DDE. This is a potentially significant impact.

The only structures located on the Project site include two industrial warehouses in the north-central portion of the site. The warehouses would remain as part of the Project and, thus, would not be removed prior to construction. Therefore, evaluation for asbestos and lead containing materials would not be required.

Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.8-1: A Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP shall establish management practices for handling hazardous materials, including

fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.

Mitigation Measure 3.8-2: *Prior to bringing hazardous material to the proposed commercial site, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to San Joaquin County Environmental Health Division (CUPA) for review and approval. If during the construction process for the proposed commercial site the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID#, and accumulate, ship, and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).*

Mitigation Measure 3.8-3: *Prior to initiation of any ground disturbance activities, evenly distributed soil samples shall be conducted throughout the proposed Project property for analysis of pesticides and heavy metals. The samples shall be submitted for laboratory analysis of pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the City of Stockton. If elevated levels of pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*

RESULTING LEVEL OF SIGNIFICANCE

Mitigation Measure 3.8-1 requires a Soils Management Plan (SMP) to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Additionally, Mitigation Measure 3.8-2 requires a Hazardous Materials Business Plan (HMBP) to be submitted and approved by the San Joaquin County Environmental Health Division prior to the issuance of a grading permit. Furthermore, Mitigation Measures 3.8-3 requires evenly distributed soil samples to be conducted for analysis of pesticides and heavy metals. With implementation of Mitigation Measures 3.8-1 through 3.8-3, the proposed Project would have a **less than significant** impact relative to this topic.

Operational Phase Impacts

The operational phase of the proposed Project would occur after construction is completed and residents, business operators, and their employees and customers move in to occupy the facilities on a day-to-day basis.

Although the UPRR is located along the eastern boundary of the Project site, the UPRR poses a small risk of accidental spill during transportation of hazardous materials. The Railroad is subject to compliance with state and federal regulations. The UPRR Company has developed and implemented a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172 Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. This plan implements measures to reduce accidental spills, and ensures

3.8 HAZARDS AND HAZARDOUS MATERIALS

that accidental spillages are remediated. These treatments would avoid significant safety risk to future employees and customers in the Project area as well as minimize harm to the environment.

The proposed Project includes commercial facilities and residential structures. Each of these uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Environmental Health Division and the Stockton Fire Department. Implementation of the following mitigation measure will ensure that the proposed Project would have a **less than significant** impact relative to this issue.

MITIGATION MEASURES

*Implement **Mitigation Measure 3.8-2***

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measure 3.8-2, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area.

Construction Phase Impacts

The With Bridge Alternative would result in the conversion of the undeveloped land from agricultural uses. Similar to the proposed Project, agricultural practices on the Project site have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no

contaminated soils have been identified, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage.

Mitigation Measure 3.8-1 requires a SMP to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Additionally, Mitigation Measure 3.8-2 requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division prior to the issuance of a grading permit. Furthermore, Mitigation Measures 3.8-3 requires evenly distributed soil samples to be conducted for analysis of pesticides and heavy metals. Under the With Bridge Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Operational Phase Impacts

The operational phase of the With Bridge Alternative would occur after construction is completed and residents, business operators, and their employees and customers move in to occupy the facilities on a day-to-day basis.

As noted previously, the UPRR poses a small risk of accidental spill during transportation of hazardous materials. The Railroad is subject to compliance with state and federal regulations.

The With Bridge Alternative includes commercial facilities and residential structures. Each of these uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Environmental Health Division and the Stockton Fire Department. Under the With Bridge Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

Construction Phase Impacts

The General Plan 2035 Alternative would result in the conversion of the undeveloped land from agricultural uses. Similar to the proposed Project, agricultural practices on the Project site have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage.

Mitigation Measure 3.8-1 requires a SMP to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Additionally, Mitigation Measure 3.8-2 requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division prior to the issuance of a grading permit. Furthermore, Mitigation Measures 3.8-3 requires evenly distributed soil samples to be conducted for analysis of pesticides and heavy metals. Under the General Plan 2035 Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Operational Phase Impacts

The operational phase of the General Plan 2035 Alternative would occur after construction is completed and residents, business operators, and their employees and customers move in to occupy the facilities on a day-to-day basis.

As noted previously, the UPRR poses a small risk of accidental spill during transportation of hazardous materials. The Railroad is subject to compliance with state and federal regulations.

The General Plan 2035 Alternative includes commercial facilities and residential structures. Each of these uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Environmental Health Division and the Stockton Fire Department. Under the General Plan 2035 Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be

eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

Construction Phase Impacts

The Reduced Project Alternative would result in the conversion of the undeveloped portion of the Project site from agricultural uses to residential uses. However, approximately 33 percent of the Project site would remain undeveloped, the number of residential units would be reduced by approximately 472 units, and the commercial component of the proposed Project would be eliminated. Similar to the proposed Project, agricultural practices on the Project site have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage.

Mitigation Measure 3.8-1 requires a SMP to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Mitigation Measure 3.8-2, which requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division, would not be required because commercial uses would not be developed as part of the Reduced Project Alternative. Furthermore, Mitigation Measures 3.8-3 requires evenly distributed soil samples to be conducted for analysis of pesticides and heavy metals. Under the Reduced Project Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Operational Phase Impacts

The operational phase of the Reduced Project Alternative would occur after construction is completed and residents move in to occupy the residences on a day-to-day basis.

As noted previously, the UPRR poses a small risk of accidental spill during transportation of hazardous materials. The Railroad is subject to compliance with state and federal regulations.

The Reduced Project Alternative includes residential structures. Residential uses will likely use a variety of materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These residences will store and use these materials. Mitigation Measure 3.8-2, which requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division, would not be required because commercial uses would not be developed as part of the Reduced Project Alternative. Under the Reduced Project Alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

Construction Phase Impacts

The Reduced Intensity/Density Alternative would result in the conversion of the undeveloped portion of the Project site from agricultural uses to residential uses. Similar to the proposed Project, agricultural practices on the Project site have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Mitigation Measure 3.8-1 requires a SMP to be submitted and approved by the San Joaquin County Department of Environmental Health prior to the issuance of a grading permit. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Mitigation Measure 3.8-2, which requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division, would not be required because commercial uses would not be developed as part of the Reduced Intensity/Density Alternative. Furthermore, Mitigation Measures 3.8-3 requires evenly distributed soil samples to be conducted for analysis of pesticides and heavy metals. Under the Reduced Intensity/Density Alternative, implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Operational Phase Impacts

The operational phase of the Reduced Intensity/Density Alternative would occur after construction is completed and residents move in to occupy the residences on a day-to-day basis.

As noted previously, the UPRR poses a small risk of accidental spill during transportation of hazardous materials. The Railroad is subject to compliance with state and federal regulations.

The Reduced Intensity/Density Alternative includes residential structures. Residential uses will likely use a variety of materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These residences will store and use these materials. Mitigation Measure 3.8-2, which requires a HMBP to be submitted and approved by the San Joaquin County Environmental Health Division, would not be required because commercial uses would not be developed as part of the Reduced Intensity/Density Alternative. Under the Reduced Intensity/Density Alternative, impacts would be

less than significant. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Impact 3.8-2: Project implementation has the potential to 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)

Proposed Project:

The proposed Project includes development of residential and commercial uses. Figure 2-8c in Section 2.0 provides a proposed conceptual commercial site plan that illustrates a more detailed design for the 10.5-acre commercial area in the northwest portion of the Project site. As shown on Figure 2-8d, the commercial site is proposed to include a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room.

The nearest existing school to the Project site, Ronald McNair High School, is located approximately 0.14 miles southwest of the Project site. In addition, the Project includes a 14.7-acre K-8 school site.

The existing industrial uses in the north-central portion of the Project site include Pacific Bell and Bragg Investment Company. Neither of the existing uses produces hazardous materials. Some potentially hazardous materials, such as gasoline or oil products for equipment maintenance, are used and stored on-site. Similar to the proposed Project, these existing industrial uses are subject to their site-specific Hazardous Materials Business Plan. The San Joaquin County Environmental Health Division reviewed and approved the Plans for the existing on-site uses prior to bringing hazardous materials to the site. The Plan outlines the site-specific process for handling and disposing of hazardous materials during operation and the existing uses must comply with the Plan. Therefore, the proposed school site would not be exposed to hazards from the existing on-site industrial uses.

The proposed Project is not anticipated to have businesses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The Health and Safety Element of the City of Stockton General Plan provides policies to abate the possible exposure of schools to hazardous materials and minimize exposure to a variety of hazardous conditions (see Policies HS-5.1 and HS-5.8). Additional policies encourage continued cooperation with the County to manage the use of hazardous materials (see Policy HS-5.4), the designation of routes for the transport of hazardous materials (see Policy HS-5.3), and continued compliance with all applicable local, state, and federal safety standards.

The City of Stockton General Plan EIR determined that through compliance with the General Plan Policies, buildout of the General Plan would have a less than significant impact related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Consistent with the General Plan EIR, implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmental superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. The nearest existing school to the Project site, Ronald McNair High School, is located approximately 0.14 miles southwest of the Project site. The With Bridge Alternative would include a K-8 school site.

The With Bridge Alternative is not anticipated to have businesses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The commercial uses included in the With Bridge Alternative would be similar to the proposed Project. The Health and Safety Element of the City of Stockton General Plan provides policies to abate the possible exposure of schools to hazardous materials and minimize exposure to a variety of hazardous conditions (see Policies HS-5.1 and HS-5.8). Additional policies encourage continued cooperation with the County to manage the use of hazardous materials (see Policy HS-5.4), the designation of routes for the transport of hazardous materials (see Policy HS-5.3), and continued compliance with all applicable local, state, and federal safety standards.

The City of Stockton General Plan EIR determined that through compliance with the General Plan Policies, buildout of the General Plan would have a less than significant impact related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school. Implementation of the With Bridge Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres, the Marlette Road extension would be constructed, and a

bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. The nearest existing school to the Project site, Ronald McNair High School, is located approximately 0.14 miles southwest of the Project site. The General Plan 2035 Alternative would include a K-8 school site.

The General Plan 2035 Alternative is not anticipated to have businesses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The commercial uses included in the General Plan 2035 Alternative would be similar to the proposed Project. The Health and Safety Element of the City of Stockton General Plan provides policies to abate the possible exposure of schools to hazardous materials and minimize exposure to a variety of hazardous conditions (see Policies HS-5.1 and HS-5.8). Additional policies encourage continued cooperation with the County to manage the use of hazardous materials (see Policy HS-5.4), the designation of routes for the transport of hazardous materials (see Policy HS-5.3), and continued compliance with all applicable local, state, and federal safety standards.

The City of Stockton General Plan EIR determined that through compliance with the General Plan Policies, buildout of the General Plan would have a less than significant impact related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school. Implementation of the General Plan 2035 Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The nearest existing school to the Project site, Ronald McNair High School, is located approximately 0.14 miles southwest of the Project site. The Reduced Project Alternative would include a K-8 school site.

As noted previously, the existing industrial uses in the north-central portion of the Project site include Pacific Bell and Bragg Investment Company. Although neither of the existing uses produces hazardous materials, some potentially hazardous materials, such as gasoline or oil products for equipment maintenance, are used and stored on-site. These existing industrial uses are subject to their site-specific Hazardous Materials Business Plan. The Plan outlines the site-specific process for handling and disposing of hazardous materials during operation and the existing uses must comply with the Plan. Therefore, the school site would not be exposed to hazards from the existing on-site industrial uses.

The Reduced Project Alternative is not anticipated to have uses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The proposed commercial site would not be constructed as part of the Reduced Project Alternative. The Health and Safety Element of the City of Stockton General Plan provides policies to abate the

3.8 HAZARDS AND HAZARDOUS MATERIALS

possible exposure of schools to hazardous materials and minimize exposure to a variety of hazardous conditions (see Policies HS-5.1 and HS-5.8). Additional policies encourage continued cooperation with the County to manage the use of hazardous materials (see Policy HS-5.4), the designation of routes for the transport of hazardous materials (see Policy HS-5.3), and continued compliance with all applicable local, state, and federal safety standards.

The City of Stockton General Plan EIR determined that through compliance with the General Plan Policies, buildout of the General Plan would have a less than significant impact related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school. Implementation of the Reduced Project Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. The nearest existing school to the Project site, Ronald McNair High School, is located approximately 0.14 miles southwest of the Project site. The Reduced Intensity/Density Alternative would include a K-8 school site.

As noted previously, the existing industrial uses in the north-central portion of the Project site include Pacific Bell and Bragg Investment Company. Although neither of the existing uses produces hazardous materials, some potentially hazardous materials, such as gasoline or oil products for equipment maintenance, are used and stored on-site. These existing industrial uses are subject to their site-specific Hazardous Materials Business Plan. The Plan outlines the site-specific process for handling and disposing of hazardous materials during operation and the existing uses must comply with the Plan. Therefore, the school site would not be exposed to hazards from the existing on-site industrial uses.

The Reduced Intensity/Density Alternative is not anticipated to have uses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The proposed commercial site would not be constructed as part of the Reduced Project Alternative. The Health and Safety Element of the City of Stockton General Plan provides policies to abate the possible exposure of schools to hazardous materials and minimize exposure to a variety of hazardous conditions (see Policies HS-5.1 and HS-5.8). Additional policies encourage continued cooperation with the County to manage the use of hazardous materials (see Policy HS-5.4), the designation of routes for the transport of hazardous materials (see Policy HS-5.3), and continued compliance with all applicable local, state, and federal safety standards.

The City of Stockton General Plan EIR determined that through compliance with the General Plan Policies, buildout of the General Plan would have a less than significant impact related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school.

Implementation of the Reduced Intensity/Density Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Impact 3.8-3: Project implementation has the potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (Less than Significant)

Proposed Project:

The information in this section is based on reviews of historical land uses and environmental hazards database research. There is a broad list of federal and state database that provide information for sites with varying potential for risk from the possible existence of hazardous materials. Database research concluded that the proposed Project site is not located on a site compiled pursuant to Government Code Section 65962.5. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in impacts related to sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Because development of the With Bridge Alternative would occur on the same site as the proposed Project, the conclusions of the hazards assessment would also apply to the With Bridge Alternative. As noted above, the Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the With Bridge Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

Because development of the General Plan 2035 Alternative would occur on the same site as the proposed Project, the conclusions of the hazards assessment would also apply to the General Plan 2035 Alternative. As noted above, the Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the General Plan

3.8 HAZARDS AND HAZARDOUS MATERIALS

2035 Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

Because development of the Reduced Project Alternative would occur on the same site as the proposed Project, the conclusions of the hazards assessment would also apply to the Reduced Project Alternative. As noted above, the Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the Reduced Project Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Because development of the Reduced Intensity/Density Alternative would occur on the same site as the proposed Project, the conclusions of the hazards assessment would also apply to the Reduced Intensity/Density Alternative. As noted above, the Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the Reduced Intensity/Density Alternative would have a **less than significant** impact with regards to this environmental issue. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.8-4: Project implementation has the potential to result in a safety hazard for people residing or working on the Project site as a result of public airport or public use airport. (Less than Significant)

Proposed Project:

There are no documented public airports or public use airports within close proximity to the Project site. The nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Kingdon Executive Airport is located approximately 3.84 miles northwest of the Project site. According to the San Joaquin Council of Governments Project Review Guidelines for the Airport Land Use Commission, the Project site is not located within a Land Use Compatibility Zone for either the Lodi Airpark or the

Kingdon Executive Airport.¹ Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in safety hazards for people residing or working on the Project site as a result of a public airport or public use airport. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As noted above, the nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Project site is not located within a Land Use Compatibility Zone for either the Lodi Airpark or the Kingdon Executive Airport. Under this alternative, impacts associated with public airports would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As noted above, the nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Project site is not located within a Land Use Compatibility Zone for either the Lodi Airpark or the Kingdon Executive Airport. Under this alternative, impacts associated with public airports would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted above, the nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Project site is not located within a Land Use Compatibility Zone for either the Lodi Airpark or the Kingdon Executive Airport. Under this alternative, impacts associated with public airports would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

¹ San Joaquin Council of Governments. 2013. Project Review Guidelines for the Airport Land Use Commission.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted above, the nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Project site is not located within a Land Use Compatibility Zone for either the Lodi Airpark or the Kingdon Executive Airport. Under this alternative, impacts associated with public airports would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.8-5: Project implementation has the potential to result in safety hazards for people residing or working on the Project site as a result of a private airstrip. (Less than Significant)

Proposed Project:

There are no documented private airstrips within close proximity to the Project site. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in safety hazards for people residing or working on the Project site as a result of a private airstrip. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As noted above, there are no documented private airstrips within close proximity to the Project site. Under this alternative, impacts associated with private airstrips would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As noted above, there are no documented private airstrips within close proximity to the Project site. Under this alternative, impacts associated with private airstrips would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted above, there are no documented private airstrips within close proximity to the Project site. Under this alternative, impacts associated with private airstrips would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted above, there are no documented private airstrips within close proximity to the Project site. Under this alternative, impacts associated with private airstrips would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.8-6: Project implementation has the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

Proposed Project:

The OES maintains an Emergency Operations Plan (EOP) that serves as the official Emergency Plan for San Joaquin County. It includes planned operational functions and overall responsibilities of County Departments during an emergency situation. The Emergency Plan also contains a threat summary for San Joaquin County, which addresses the potential for natural, technological and human-caused disasters (County Code, Title 4-3007).

The County OES also prepared a Hazardous Materials Area Plan (§2720 H&S, 2008) that describes the hazardous materials response system developed to protect public health, prevent environmental damage and ensure proper use and disposal of hazardous materials. The plan establishes effective response capabilities to contain and control releases, establishes oversight of long-term cleanup and mitigation of residual releases, and integrates multi-jurisdiction and agency coordination. This plan is now implemented by the San Joaquin County Environmental Health Department.

The San Joaquin County Environmental Health Department maintains a Hazardous Materials Management Plan/ Hazardous Materials Business Plan (HMMP/HMBP). The HMMP/HMBP describes agency roles, strategies and processes for responding to emergencies involving hazardous materials. The Environmental Health Department maintains a Hazardous Materials Database and Risk and Flood Maps available to the public on its website.

In San Joaquin County, all major roads are available for evacuation, depending on the location and type of emergency that arises. The proposed Project does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish

3.8 HAZARDS AND HAZARDOUS MATERIALS

protocols for safe use, handling and transport of hazardous materials. Additionally, the proposed Project would require review and approval by the Fire Department to ensure that adequate emergency access, among other issues, are sufficient. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Similar to the proposed Project, the With Bridge Alternative would be subject to the EOP and Hazardous Materials Area Plan. The With Bridge Alternative does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Under this alternative, impacts associated with emergency response plans or emergency evacuation plans would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Similar to the proposed Project, the General Plan 2035 Alternative would be subject to the EOP and Hazardous Materials Area Plan. The General Plan 2035 Alternative does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Under this alternative, impacts associated with emergency response plans or emergency evacuation plans would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Similar to the proposed Project, the Reduced Project Alternative would be subject to the EOP and Hazardous Materials Area Plan. The Reduced Project Alternative does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Under this alternative, impacts associated with emergency response plans or emergency evacuation plans would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Similar to the proposed Project, the Reduced Intensity/Density Alternative would be subject to the EOP and Hazardous Materials Area Plan. The Reduced Intensity/Density Alternative does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Under this alternative, impacts associated with emergency response plans or emergency evacuation plans would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.8-7: Project implementation has the potential to expose people or structures to a risk of loss, injury or death from wildland fires. (Less than Significant)Proposed Project:

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area-to-mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the eastern and western portion of the County. The Project site is located in an area that is predominately agricultural uses, which are not at a significant risk of wildfire. Natural grassland areas are not located in the Project vicinity. Additionally, the adjacent roadways and nearby urban development

3.8 HAZARDS AND HAZARDOUS MATERIALS

would effectively act as firebreaks for the site. The proposed Project would have a **less than significant** impact with regards to this environmental issue.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not expose people or structures to a risk of loss, injury, or death from wildland fires. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. As noted previously, the Project site is located in an area that is predominately agricultural uses, which is not at a significant risk of wildfire. Additionally, the adjacent roadways and nearby urban development would effectively act as firebreaks for the site. Under this alternative, impacts associated with wildland fires would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. As noted previously, the Project site is located in an area that is predominately agricultural uses, which is not at a significant risk of wildfire. Additionally, the adjacent roadways and nearby urban development would effectively act as firebreaks for the site. Under this alternative, impacts associated with wildland fires would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 200.15 acres of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted previously, the Project site is located in an area that is predominately agricultural uses, which is not at a significant risk of wildfire. Additionally, the adjacent roadways and nearby urban development would effectively act as firebreaks for the site. Under this alternative, impacts associated with wildland fires would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. As noted previously, the Project site is located in an area that is predominately agricultural uses, which is not at a significant risk of wildfire. Additionally, the adjacent roadways and nearby urban development would effectively act as firebreaks for the site. Under this alternative, impacts

associated with wildland fires would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

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3.9.1 INTRODUCTION

This section describes the regulatory setting, regional hydrology and water quality, impacts associated with hydrology and water that are likely to result from project implementation, and measures to reduce potential impacts to hydrology and water quality. This section is based in part on the following documents, reports and studies: Water Supply Assessment (City of Stockton Municipal Utilities Department, 2017) (see Appendix I), Stormwater and Floodwater diagrams (NorthStar Engineering Group, Inc. 2016), *City of Stockton General Plan 2035* (City of Stockton, 2007), *Stockton General Plan Background Report 2035* (City of Stockton, 2007), *California Water Plan Update 2013* (DWR, 2013), *Stockton Stormwater Quality Control Criteria Plan (SWQCCP)* (City of Stockton and San Joaquin County, 2009), *California's Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin, Eastern San Joaquin Subbasin* (DWR, 2006), *California's Groundwater* (DWR, 2003), *Eastern San Joaquin Groundwater Basin Groundwater Management Plan* (SJRG, 2013), *Custom Soils Report for San Joaquin County, California* (NRCS, 2016), and *Web Soil Survey* (NRCS, 2016). Three comments were received during the NOP comment period regarding hydrology and water quality (listed below). Full comments received are included in Appendix A.

Comments relevant to hydrology and water quality include:

1. Central Valley Regional Water Quality Control Board
2. California Natural Resources Agency, Central Valley Flood Protection Board
3. U.S. Army Corps of Engineers, Sacramento District

The regulations outlined in the Central Valley Regional Water Quality Control Board are discussed in Section 3.9.3, Regulatory Setting, of this section. The Central Valley Flood Protection Board comment regarding Bear Creek and potentially applicable regulations are discussed in Impacts 3.9-1 and 3.9-2. The U.S. Army Corps of Engineers, Sacramento District, comment noted that the Project site is within the jurisdiction of the USACE under the authority of Section 404 of the Clean Water Act. Impact 3.4-6 in Section 3.4, Biological Resources, includes a discussion pertaining to Section 404 of the Clean Water Act.

3.9.2 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

San Joaquin County is located in the San Joaquin River watershed. The San Joaquin River is about 300 miles long. It begins in the Sierra Nevada mountain range on California's eastern border. The river runs down the western slope of the Sierra and flows roughly northwest through the Central Valley, and meets the Sacramento River at the Sacramento-San Joaquin Delta, a 1,000-square-mile maze of channels and islands that drains more than 40 percent of the state's lands (SJRG, 2013).

Because the Central Valley receives relatively little rainfall (12 to 17 inches a year, falling mostly October through March), snowmelt runoff from the mountains is the main source of fresh water in

the San Joaquin River. Over its 300-mile length, the San Joaquin River is fed by many other streams and rivers, most notably the Mokelumne, Stanislaus, Tuolumne, and Merced Rivers.

Most of the surface water in the upper San Joaquin River is stored and diverted at Millerton Lakes' Friant Dam, near Fresno. From Friant Dam, water is pumped north through the Madera Canal and south through the Friant-Kern Canal to irrigation districts and other water retailers, which then deliver the water directly to the end users in the southern portion of the watershed.

In the central and northern portions of the watershed, many agricultural and municipal users receive water from irrigation districts, such as the Modesto, Merced, Oakdale, South San Joaquin, and Turlock Irrigation Districts. That water is provided through diversions from rivers that are tributary to the San Joaquin River, such as the Mokelumne, Stanislaus, Tuolumne, and Merced Rivers.

In an average year, about 1.5 million acre-feet of water is diverted from the San Joaquin River at Friant Dam, leaving little flow in the river until the Merced River joins the San Joaquin northwest of the City of Merced. Additional water also reaches the river via flows returning to the river from municipal wastewater treatment plants, as well as urban and agricultural runoff. The rest of the area's water supply needs are met by importing water from northern California (via the Central Valley Project) and by pumping water from the groundwater basin (SJRG, 2013).

Climate

Summers in the region are warm and dry ranging from an average high in July of 93°F to an average low of approximately 59°F. Winters are cool and mild, with an average high of 53°F and a low of 37°F in January. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5°F to July highs of 94.3°F.

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.9-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.9-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

<i>WATERSHED LEVEL</i>	<i>APPROXIMATE SQUARE MILES (ACRES)</i>	<i>DESCRIPTION</i>
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012

Hydrologic Region

San Joaquin County is located in the San Joaquin River Hydrological Region. The San Joaquin River is the principal river of the region, and all other streams of the region are tributary to it. The Mokelumne River and its tributary the Cosumnes River originate in the central Sierra Nevada, along with the more southerly Stanislaus and Tuolumne Rivers. The Merced River flows from the south central Sierra Nevada and enters the San Joaquin River near the City of Newman. The Chowchilla and Fresno Rivers also originate in the Sierra south of the Merced River and trend westward toward the San Joaquin River. Creeks originating in the Coast Range and draining eastward into the San Joaquin River include Del Puerto Creek, Orestimba Creek, and Panoche Creek. Del Puerto Creek enters the San Joaquin near the City of Patterson, and Orestimba Creek enters north of the City of Newman. During flood years, Panoche Creek may enter the San Joaquin River or the Fresno Slough near the town of Mendota. The Kings River is a stream of the Tulare Lake Hydrologic Region, but in flood years it may contribute to the San Joaquin River, flowing northward through the James Bypass and Fresno Slough to enter near the City of Mendota. The Mud, Salt, Berrenda, and Ash sloughs also add to the San Joaquin River, and numerous lesser streams and creeks also enter the system, originating in both the Sierra Nevada and the Coast Range. The entire San Joaquin river system drains northwesterly through the Delta to Suisun Bay (DWR, 2013, pg. SJR-5).

The Project site is located in the San Joaquin River watershed within the Lower Cosumnes-hydrologic area, Bear Creek and Lower Bear Creek hydrologic sub-areas. Figure 3.9-1 and 3.9-2 displays the San Joaquin River watershed and local project area hydrology. Table 3.9-2 below presents local hydrology areas associated with the project area.

TABLE 3.9-2: HYDROLOGIC AREAS/SUBAREAS

<i>HYDROLOGIC UNIT CODE</i>	<i>NAME</i>	<i>SIZE SQUARE MILES (ACRES)</i>
(HUC-8): 18040005	Lower Cosumnes	747 (478,080)
(HUC-10): 1807020301	Bear Creek	89.3 (57,153)
(HUC-12): 180400030405	Lower Bear Creek	38.2 (24,448)

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES

Groundwater

The City of Stockton and much of the surrounding area is located in the Eastern San Joaquin River Subbasin. This groundwater basin covers approximately 1,105 square miles and extends from the

Mokelumne River on the north and northwest; San Joaquin River on the west; Stanislaus River on the south; and consolidated bedrock on the east. The Solano and South American are subbasins of the Sacramento Valley Groundwater Basin (DWR, 2006, pg. 1).

LOCAL SETTING

The topography of the Project site is relatively flat with an approximate ten-foot elevation gain throughout the Project site (west to east). The Project site is bounded on the south by Bear Creek and the associated Bear Creek Levee System. An irrigation catch pond runs along the north side of the Project site, and multiple irrigation ditches traverse the interior of the western portion of the project site.

The Project site consists largely of active agricultural fields (roughly 253 acres in production). The Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site (APNs 120-020-13 and 120-020-14).

Local Waterways and Water Systems

Bear Creek is a modified natural channel that conducts base flow and storm runoff from its upstream drainage area, which includes foothill and lowland agricultural areas north and east of the Project site. Bear Creek is also used to distribute irrigation water. Bear Creek is a perennial stream and serves as a terminal storm drainage facility. Outside the Stockton urban area, Bear Creek drains more than 92 square miles in eastern San Joaquin and western Calaveras counties. The San Joaquin County Water Conservation and Flood Control District maintains Bear Creek and its associated levee system.

The Project site is located within the Woodbridge Irrigation District (WID). The WID system is operated seasonally to provide irrigation water to adjoining agricultural lands, including the Project area. However, there are no WID canals within the Project site. The Johnson Lateral terminates at the northeast corner of the Project site, and the Morse-Williams Lateral is located along the west side of West Lane within the planned Bear Creek West Specific Plan Area. The Peters-Castle Lateral is located south of Bear Creek.

Groundwater

The local groundwater basin and the City's groundwater use are described in the City's 2015 Urban Water Management Plan (UWMP). A brief description of the groundwater basin and a discussion of historical and projected groundwater pumping are provided below.

BASIN CHARACTERISTICS

The Project site is located in the Eastern San Joaquin County Groundwater Basin. The basin is not adjudicated; however, a basin management plan has been created. The Eastern San Joaquin Groundwater Basin Groundwater Management Plan (ESJGB-GMP) (NSJCGB, 2004) was prepared in September 2004. The purpose of the ESJGB-GMP is "to review, enhance, assess, and coordinate existing groundwater management policies and programs in Eastern San Joaquin County and to develop new policies and programs to ensure the long-term sustainability of groundwater

resources in Eastern San Joaquin County.” According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2006), the ESJGB is in a critical condition of overdraft. Groundwater levels have declined in the basin since the 1960s with the lowest groundwater levels found in eastern San Joaquin County.

Most of the fresh groundwater is encountered at depths of less than 1,000 feet, and most of this shallow groundwater is unconfined. A discussion of basin hydrogeology is provided in the ESJGB-GMP. The Victor formation is the uppermost formation and extends from the ground surface to a maximum depth of about 150 feet. Compared to the underlying formations, the Victor formation is generally more permeable and the groundwater is typically unconfined.

The underlying Laguna formation includes discontinuous lenses of unconsolidated to semi-consolidated sands and silts interspersed with lesser amounts of clay and gravel. The Laguna formation is hydraulically connected to the Victor formation and is estimated to be 750 to 1,000 feet thick. Moderate permeability has been reported within the Laguna formation with some highly permeable coarse-grained beds.

As presented in the Spring 2015 Groundwater Report, 128 wells are monitored in the San Joaquin County Flood Control and Water Conservation District in San Joaquin County. Of the 69 wells that were able to be compared, 56 wells decreased in groundwater levels since spring 2014. Nine wells show increases in groundwater levels and four wells had no change in groundwater elevations (San Joaquin County Flood Control and Water Conservation District, 2015). The Spring 2015 Groundwater Report illustrates the changed groundwater levels in wells along the Highway 99 alignment from 1986, 1992, and spring 2015. Spring 2015 groundwater levels are lower than in the Spring of 1986, but higher than in the fall of 1992.

As documented in the City’s 2015 UWMP, groundwater is managed for long-term sustainability and supply through conjunctive use with surface water supplies. The City has determined that the sustainable groundwater yield is 0.75 acre-feet per year (AFY), equivalent to a groundwater yield of approximately 50,000 AFY. To establish the projected groundwater supply that is reasonably available, the City of Stockton Municipal Utilities Department (COSMUD) assumes that the reasonably available groundwater for the current water service area (38,524 acres) is pumped at 0.6 acre-feet per acre per year, equivalent to an annual groundwater supply of 23,100 AFY.

GROUNDWATER PUMPING

The City currently has groundwater wells located in the City’s North and South systems. Groundwater is used conjunctively with the City’s other supply sources. With the Delta Water Supply Project (DWSP) water treatment plan (WTP) now online, the City uses less groundwater in wet and average years and increases groundwater use in dry years to make up for reductions in surface water deliveries.

The COSMUD currently exercises its rights as an overlying groundwater appropriator to extract groundwater from the groundwater basin underlying the City of Stockton Metropolitan Area (COSMA) for delivery to its customers. The volume of groundwater pumped from 2011 through

3.9 HYDROLOGY AND WATER QUALITY

2015 is presented in Table 3.9-3. As shown in Table 3.9-3, groundwater pumping has fluctuated over the last several years. The lowest amount of pumping, 3,825 AFY, occurred in 2013, and the highest amount of pumping 7,227 AFY, occurred in 2014.

TABLE 3.9-3: AMOUNT OF GROUNDWATER PUMPED IN STOCKTON FROM 2011-2015 (AFY)

	2011	2012	2013	2014	2015
Groundwater Use	6,009	3,393	3,825	7,227	6,628

SOURCE: CITY OF STOCKTON URBAN WATER MANAGEMENT PLAN (UWMP) 2015.

GROUNDWATER RECHARGE

Much of the groundwater recharge in the basin occurs in the sand and gravels along the San Joaquin River from Sierra snowmelt flowing downstream. Precipitation in the region is 13.81 inches, most of which falls between November through April. A portion of this annual rainfall infiltrates the soil and groundwater basin, while a portion is discharged downstream into the Delta.

Additionally, local groundwater recharge is influenced by underlying soils types and their associated hydraulic conductivity. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

- Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Drainage

The City's Stormwater Utility Division operates and maintains 620 miles of pipe, 72 pump stations, and over 100 discharge pipes that collect and route runoff from the streets and gutters to local rivers, creeks, and sloughs (UWMP, 2010).

Stockton's Monitoring and Special Studies Program tracks the quality of urban runoff directly into rivers, lakes, sloughs, and the Delta. Specific Pollutants of Concern (POCs) in the runoff are identified and used to determine how much pollution is caused from urban discharge.

This data is used to identify pollutant sources and to develop pollution prevention programs and best management practices to prevent the spread of those pollutants into local waterways.

The City's Stormwater Program conducts monitoring services for the following programs in compliance with the Stormwater NPDES Permit:

- Urban Discharge and Receiving Water Sampling Program
- Detention Basin Monitoring Program
- Best Management Practices (BMP) Effectiveness Studies
- Dry Weather Field Screening
- Sediment Plan Monitoring Program
- Pathogen Plan Source Identification Study
- Low Dissolved Oxygen Monitoring Plan
- Mercury Monitoring Plan
- Pesticide Plan Monitoring

Flooding

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater.

The Bear Creek stream corridor was improved with levees, which were upgraded in the 1990s by the San Joaquin Area Flood Control Agency (SJAFC) to permit discharge of storm drainage from planned urban development in the northeast Stockton area, including the Project site. As a result, the Bear Creek levee systems have been engineered to contain 100-year flood flows and provide a minimum of three feet of freeboard, in accordance with Federal Emergency Management Agency (FEMA) standards. Figure 3.9-3 shows the delineated FEMA floodplain classification for the Project site.

The City of Stockton and San Joaquin County have been working with FEMA and the Army Corps of Engineers (ACOE) to more precisely characterize levee-related concerns in the portion of Bear Creek west, downstream of the Project site. Maintenance concerns on Bear Creek identified by the ACOE are related to a series of encroachments affecting the south bank of the creek. The reach of

Bear Creek affected by these encroachments is downstream of Thornton Road, approximately 2.5 miles downstream (southwest) of the Project site.

Dam Failure

The Project site is located within dam failure inundation areas. Dam facilities presenting flooding risk to the Project site include: New Hogan Dam, Camanche Lake, Pardee Reservoir, and Salt Springs Reservoir. Potential inundation is shown in Figure 3.9-4. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring all of the dam facilities with inundation areas that are shown in Figure 3.9-4. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution conditions: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn runoff from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (from a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980's. However, since then, the U.S. Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water

bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

303(d) Impaired Water Bodies: Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards or objectives and thus are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby becomes the basis for the states to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within the San Joaquin County which are considered Section 303(d) impaired waterbodies. Those areas in the regional vicinity of the Project site that are impaired are referred as Delta Waterways (Southern Portion) by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown).

Additionally, as of 2010, Bear Creek has been a listed in Section 303(d) impaired waterbody. Bear Creek TMDL Requirement Status is listed as an A5 (TMDL still required), with a TMDL scheduled completion date of 2021.

3.9.3 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed Project.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2013-001-DWQ-DWQ).

Federal Emergency Management Agency (FEMA)

San Joaquin County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

200-Year Flood Protection in the Central Valley

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The new law restricts approval of development after 2016 if “adequate progress” towards achieving this standard is not met. Urban and urbanizing areas protected by State-Federal project levees cannot use “adequate progress” as a condition to approve development after 2025. Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the states to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

- (1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.
- (2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.
- (3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWA.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and

authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

City of Stockton Municipal Code

In May 2016, the City of Stockton amended their Municipal Code to reflect SB-5 requirements. The purpose of Chapter 16.90 Floodplain Management Findings is to comply with provisions of State law that require the City to make specific findings prior to approving certain projects located within a flood hazard zone. Section 16.90.020 of the Municipal Code contains the following provisions related to development agreements, maps, permits, and entitlements:

- A. The applicable review authority shall not approve the execution of a development agreement, a tentative map or a parcel map for which a tentative map is not required or a discretionary permit or other discretionary entitlement under this chapter that would result in the construction of a new building or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit under Title 15 that would result in the construction of a new residence for property that is located within a flood hazard zone unless the review authority finds, based on substantial evidence in the record, one of the following:
 - 1. The facilities of the State Plan of Flood Control or other flood management facilities protect the property to the urban level of flood protection in urban and urbanizing areas or the national Federal Emergency Management Agency standard of flood protection in non-urbanized areas;
 - 2. The City has imposed conditions on a development agreement, map, permit, or entitlement that will protect the property to the urban level of flood protection in urban and urbanizing areas or the national Federal Emergency Management Agency standard of flood protection in non-urbanized areas;
 - 3. The local flood management agency has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas or the national Federal Emergency Management Agency standard of flood protection in non-urbanized areas for property located within a flood hazard zone, intended to be protected by the system;
 - 4. The property in an undetermined risk area has met the urban level of flood protection;

3.9 HYDROLOGY AND WATER QUALITY

5. The property is located in an area of potential flooding of three (3) feet or less from a storm event that has a 1-in-200 chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas; or
 6. The property is located within a watershed with a contributing area of 10 or fewer square miles in urban and urbanizing areas.
- B. The review authority's decisions shall be in accordance with criteria prepared by the Director that are consistent with accepted state and federal floodplain management practices.

City of Stockton General Plan

The following policies of the Stockton General Plan related to hydrology and water quality are applicable to the proposed Project.

Public Facilities and Services Element

WATER SUPPLY AND DELIVERY POLICY

- PFS-2.11. Sustainability of Groundwater Supplies. The City shall work in concert with other water purveyors in the region to achieve the target yield (0.6 AF/year) of the drinking water aquifer, and shall limit its long-term average groundwater withdrawals to this target yield.

WASTEWATER POLICY

- PFS-3.3. Compliance with Federal Standards for Surface Water Protection. The City shall comply with the requirements of the Clean Water Act with the intent of minimizing the discharge of pollutants to surface waters.

STORMWATER POLICIES

- PFS-4.1. Creek and Slough Capacity. The City shall require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs will not be exceeded. To this end: Outflow to creeks and sloughs shall be monitored and controlled to avoid exceeding downstream channel capacities; Storage facilities shall be coordinated and managed to prevent problems caused by timing of storage outflows.
- PFS-4.2. Watershed Drainage Plans. The City shall require the preparation of watershed drainage plans for proposed developments within the urban services boundary. These plans shall define needed drainage improvements and estimate construction costs for these improvements. The plans will also identify a range of feasible measures that can be implemented to reduce all public safety and/or environmental impacts associated with the construction, operation, or maintenance of any required drainage improvements (i.e., drainage basins, etc.).
- PFS-4.3. Best Management Practices. The City shall require, as part of watershed drainage plans, Best Management Practices (BMPs), to reduce pollutants to the maximum extent practicable. As of November 25, 2003, the City shall require that all new development and redevelopment projects to comply with the post-construction Best Management Practices

(BMPs) called for in the Stormwater Quality Control Criteria Plan (SWQCCP), as outlined in the City's Phase 1 Stormwater NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-20020-0181). Also the owners, developers, and/or successors-in-interest must establish a maintenance entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of all post-construction BMPs. The City shall require, as part of its Storm Water NPDES Permit and ordinances, to implement the Grading Plan, Erosion Control Plan, and Pollution Prevention Plan (SWPPP) during construction activities of any improvement plans, new development and redevelopment projects for reducing pollutants to the maximum extent practicable.

- PFS-4.4. Regional Basins. The City shall define drainage service areas and encourage and support the use of regional stormwater facilities, including stormwater detention and stormwater quality basins within these service areas.
- PFS-4.5. Public Facilities Fees. The City shall develop a Stormwater Management Utility fee that will financially support the stormwater system operation, the Stormwater Management Plan, and maintenance and management program activities.
- PFS-4.6 Stormwater Facility Sizing. The City shall ensure through the development review process that public facilities and infrastructure are designed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental sizing, the initial design shall include adequate land area and any other elements not easily expanded in the future.
- PFS-4.8. Low Impact Development. The City shall incorporate low impact development (LID) alternatives for stormwater quality control into development requirements. LID alternatives will include: (1) conserving natural areas and reducing imperviousness, (2) runoff storage, (3) hydro-modification (to mimic pre-development runoff volume and flow rate), and (4) public education.

Recreation & Waterways Element

WATERWAYS POLICY

- RW-5.2. Improve Riparian Corridors. The City shall endeavor to protect, preserve, and improve riparian corridors and incorporate them in the City's parks, trails, and open space system.

Health & Safety Element

FLOOD HAZARDS POLICIES

- HS-6.1. New Urban Development. The City shall approve new urban development only when the project is shown to be protected from a 100-year flood.
- HS-6.2. Existing Urban Development. The City shall investigate, and implement when feasible, mitigation measures that offer protection from flooding for existing urban development with a 100-year flood zone.
- HS-6.3. Preservation of Floodway and Floodplains. The City shall preserve floodways and floodplains for non-urban uses, except that development may be allowed in a floodplain

with mitigation measures that are in conformance with the City's floodplain management program.

- HS-6.5. Levee Maintenance. The City shall encourage reclamation districts to institute a levee maintenance program to reduce levee failures.
- HS-6.6. Flood Insurance Program. The City shall continue to participate in the National Flood Insurance Program.
- HS-6.7. Roadway System. The City shall require that roadway systems for areas protected from flooding by levees be designed to provide multiple escape routes for residents in the event of a levee failure.
- HS-6.8. Prohibited Uses within a 100-Year Floodplain. The City's floodplain management program shall prohibit development of residential land uses, critical emergency response facilities, and the streets that provide access to such properties within a floodway or floodplain which is subject to a 100-year flood. Areas designated for such land uses and adjacent streets shall be removed from the 100-year floodplain prior to approval of any related final map, final parcel map, or building permit, as applicable.
- HS-6.9. Cooperate with Flood Control Agencies and Support Regional Programs. The City shall cooperate with appropriate local, State, and Federal agencies to address local and regional flood issues.
- HS-6.10. Develop Flood Protection Plan for Levee Systems. The City shall coordinate with appropriate State, federal, and local flood control agencies to develop a flood protection plan for the levee systems protecting the city. The plan shall identify the levees protecting the City and the entities responsible for operation and maintenance of the levees. The plan will determine the flood levels in the waterways and the level of protection offered by the existing levees along the waterways. A long-term plan will be developed to upgrade the system as necessary to provide at least a 100-year level of flood protection to the city. The City also commits to considering and revising the plan to reflect future appropriate State or federally mandated levels of flood protection in an effort to meet these applicable levels of flood protection.

Natural & Cultural Resources Element

GENERAL POLICY

- NCR-1.1. Protect Natural Resources. The City shall strive to protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources (including Oak trees) from encroachment or destruction by incompatible development.

BIOLOGICAL RESOURCES POLICIES

- NCR-2.2. Management of Wetlands. The City shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats. Where possible and appropriate, such communities shall be restored or expanded.
- NCR-2.10. Wetland Resources. The City shall require that a wetland delineation be prepared using the protocol defined by the U.S. Army Corps of Engineers. On development

sites with the potential to contain wetland resources, a report on the findings of this survey shall be submitted to the City as part of the application process.

- NCR-2.14. Protect Delta Habitats. The City shall approve only those activities in the Delta and related waterways that are consistent with the sensitive environmental characteristics of these areas.
- NCR-2.15. Levee Vegetation. The City shall require disturbance of levee vegetation be minimized and vegetation replacement be consistent with flood control and reclamation district constraints.
- NCR-2.16. Fisheries and Riparian Habitat. The City shall protect the fisheries and riparian habitat of the Delta and waterways from damage caused by the operation of marinas or the Port of Stockton.

3.9.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements;
- 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 preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted;
- 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 that would result in substantial erosion, siltation, runoff or flooding on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place within a 100-year, or 200-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

IMPACTS AND MITIGATION

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035

Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction. (Less than Significant)

Proposed Project:

Construction-Related Water Quality Impacts: According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion is one of the most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, storm water runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the NPDES Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges which adversely affect the quality of our nation's waters. The program uses the National Pollutant Discharge Elimination System (NPDES) permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed Project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) (Permit), which states:

“...Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded...”

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

“Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed...Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a Project site. Examples include: installing berms and other temporary run-on and runoff diversions...All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough documentation and timely repair is necessary to ensure that all measures are functioning as intended...”

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing BMPs to reduce erosion and sediments to meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the RWQCB as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency.

Additional storm water regulation is established in the NPDES area-wide municipal separate storm sewer system (MS4) permit system administered by the SWRCB, which requires affected jurisdictions, including the City of Stockton, to adopt and implement a Storm Water Management Program (SWMP).

The City of Stockton has adopted a SWMP, which is intended to minimize the potential storm water quality impacts of development, including both construction and post-construction activity. The Stockton SWMP consists of a variety of programs including controls on illicit discharges, public education, controls on City operations, and water quality monitoring. Program elements most applicable to land development include construction storm water discharge requirements and the incorporation of post-construction Best Management Practices (BMPs) in new development. The SWMP includes additional controls on the operation of industrial and commercial businesses. NPDES requirements are enforced primarily through the City's third-term NPDES permit issued by the Regional Water Quality Control Board, Central Valley Region (Order No. R5-2007-0173). The principal SWMP control on construction storm water quality is the preparation and

3.9 HYDROLOGY AND WATER QUALITY

implementation of a Storm Water Pollution Prevention Plan (SWPPP), which is required for any development project exceeding one acre in size; this is a requirement of the state general permit system and the City's SWMP. As stated previously, the SWPPP identifies potential construction pollution sources, identifies needed construction BMPs, and specifies maintenance and monitoring activities needed to prevent exceedance of applicable water quality standards.

In accordance with the NPDES Stormwater Program, the Project applicant would be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement.

The SWPPP must be prepared prior to construction, be implemented during construction, and be available on the construction site. A Notice of Intent (NOI) describing the status of the project and SWPPP must be filed with the SWRCB, which then issues a Waste Discharger's Identification Number (WDID). The City requires that an Erosion Control Plan be incorporated into development plans or grading plans prior to approval. The City of Stockton also requires that the WDID be submitted prior to the issuance of a City grading permit. Through adherence to city and county uniformly applied grading requirements, implementation of the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in construction activities that could violate water quality standards or waste discharge requirements during construction. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area.

The With Bridge Alternative would result in additional urban development which would include construction grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Construction impacts would be required to implement standard requirements and mitigation as mentioned previously, thus construction impacts compared to the proposed Project, would be similar relative to this topic.

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. Grading and site preparation involved in construction of the Bridge would require the stripping of vegetation, and earth movement/excavation, both of which would increase the potential for soil erosion. Increased soil erosion could increase suspended solids in runoff and local receiving waters, which ultimately could increase sedimentation impacts to the hydrologic system.

In addition to impacts from erosion and sedimentation, the stormwater runoff water quality during construction could potentially be affected from leaks or spills of fuel, hydraulic fluids, paints, solvents, or other potentially hazardous materials commonly used in construction. The bridge project provides an opportunity for stormwater runoff that may contain pollutants to enter a waterway. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion. Special considerations must be addressed when construction is performed in or near creeks, such as limiting fill placed in creeks and minimizing alteration of the stream channel and banks to the extent feasible while also considering the objectives of the project.

While the With Bridge Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for water quality concerns during construction activities. Similar to the proposed Project, this impact would be **less than significant**. Additional requirements would need to be included, including additional BMPs to address bridge construction. For example, this alternative would require compliance with additional BMPs in order to alleviate these additional impacts. Therefore, compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

3.9 HYDROLOGY AND WATER QUALITY

The General Plan 2035 Alternative would result in additional urban development which would include construction grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Construction impacts would be required to implement standard requirements and mitigation as mentioned previously, thus construction impacts compared to the proposed Project, would be equal relative to this topic.

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. Grading and site preparation involved in construction of the Bridge would require the stripping of vegetation, and earth movement/excavation, both of which would increase the potential for soil erosion. Increased soil erosion could increase suspended solids in runoff and local receiving waters, which ultimately could increase sedimentation impacts to the hydrologic system.

In addition to impacts from erosion and sedimentation, the stormwater runoff water quality during construction could potentially be affected from leaks or spills of fuel, hydraulic fluids, paints, solvents, or other potentially hazardous materials commonly used in construction. The bridge project provides an opportunity for stormwater runoff that may contain pollutants to enter a waterway. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion. Special considerations must be addressed when construction is performed in or near creeks, such as limiting fill placed in creeks and minimizing alteration of the stream channel and banks to the extent feasible while also considering the objectives of the project.

While the General Plan 2035 Alternative would result in similar construction impacts related to urban development, the additional creek crossing provides additional potential for water quality concerns during construction activities. Similar to the proposed Project, this impact would be **less than significant**. Additional requirements would need to be included, including additional BMPs to address bridge construction. For example, this alternative would require compliance with additional BMPs in order to alleviate these additional impacts. For example, a temporary stream crossing would be required in order to prevent streambed erosion and downstream sedimentation due to construction traffic. Therefore, compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail

shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

As described previously, implementation of the proposed Project has the potential to result in the violation of water quality standards and discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

The increased areas of undeveloped land under the Reduced Project Alternative will remain pervious to precipitation, which will facilitate the natural biofiltration of stormwater. This alternative will still include a stormwater detention/basin, and provide natural BMPs to reduce pollutants in stormwater runoff. Similar to the proposed Project, the potential to violate water quality standards or waste discharge requirements during construction would remain a **less than significant** impact relative to this topic; however, this alternative would have slightly less impacts related to this topic than the proposed Project because less land would be converted to urban uses and areas of disturbance would be reduced. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

The Reduced Intensity/Density Alternative would result in urban development which would include construction grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Construction under this alternative, as with the proposed Project, would require ground disturbances on over the entire 318.82-acre footprint. Construction impacts would be required to implement standard requirements and mitigation as mentioned previously, thus construction impacts compared to the proposed Project, would be equal relative to this topic.

Similar to the proposed Project, the potential to violate water quality standards or waste discharge requirements during construction would remain a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.9-2: The proposed Project has the potential to violate water quality standards or discharge requirements during operation. (Less than Significant)

Proposed Project:

Operational Impacts: Operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas. Normal activities in these developed areas include the use of various automotive petroleum products (i.e. oil, grease, and fuel), common household hazardous materials, heavy metals, pesticides, herbicides, fertilizers, and sediment. Within urban areas, these pollutants are generally called nonpoint source pollutants. Pollutant levels vary based on factors such as time between storm events, volume of storm event, type of uses, and density of people.

Municipal Separate Storm Sewer System (MS4) permits are required under the Clean Water Act and require the discharger to develop and implement a Storm Water Management Plan (SWMP) to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). The management plans specify what BMPs will be used to address certain program areas such as public education and outreach, illicit discharge detection and elimination, construction and post-construction, and good housekeeping for municipal operations.

Urban runoff is controlled through a State general permit system administered by the California Regional Water Quality Control Board. The City of Stockton has achieved compliance with the permit through its adoption of a SWMP, including its adoption and ongoing revision of a SWQCCP. Development of the proposed Project would be subject to the storm water pollution control measures that are part of the City's SWMP. These measures would include site design controls, source controls, volume reduction measures and treatment controls as described in the Environmental Setting above, and as specified in the requirements of the City's most recent adopted version of its SWQCCP.

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge system into Bear Creek. The Project site is located within drainage basin LB 30 of the City of Stockton Storm Drainage Master Plan. The Project site encompasses the entire area of this drainage basin, and there is no tributary area to this drainage basin outside of the Project site. Development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, and two detention basins. It is anticipated that a pump station that would discharge to Bear Creek would be installed at the detention basin. Figure 2-13 in Section 2.0 displays the proposed stormwater drainage layout.

Proposed storm drain lines would range from 12 inches to 60 inches in diameter. Collection lines would flow generally west and south to the proposed detention basins. Detained and treated storm water in the two proposed detention ponds in the park/basin areas will be discharged (pumped) into Bear Creek. These detention ponds have been designed with surface areas and volumes in compliance with City standards.

Disposal of storm water collected to the detention basins would be handled by a new on-site storm water pump station and discharge outfall to Bear Creek. The pump station would operate when storm water quality and detention objectives have been met. The pump station is expected to consist of a concrete sump, trash screen and two or more pumps that would deliver storm water flow over or through the Bear Creek levee to an outfall facility. The pump station facility may include an emergency generator to supply electrical power to the pump station during power outages.

The outfall structure would consist of two or more pipelines directed southeasterly to a point inside the Bear Creek levee. Outfall pipelines would likely terminate at a concrete headwall and energy dissipators set into the toe of the Bear Creek levee; storm drainage would be discharged to a concrete, gunite or riprap apron to flow into the Bear Creek channel. Outfall pipes would terminate in a “tideflex” or a comparable check valve system.

A pump station as shown in the City’s Storm Drainage Master Plan will be constructed in phases as the project develops. When 50 percent of the lots are mapped, 100 percent of the pump station will be constructed and in operation. Pumped discharge from the dual use pond into Bear Creek will be regulated and designed in accordance with City of Stockton standards as well as in accordance with National and State agency regulations.

The ongoing operational phase of the proposed Project requires the final discharge of stormwater into Bear Creek. As stated previously, the discharge of stormwater must be treated through BMPs prior to its discharge. The City of Stockton implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Under the City’s standard practices, the owner or operator of a commercial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses.

The commercial element of the Project would be required to have its own stormwater treatment device. The commercial portion of the Project would be required to enter into an agreement with the City for the operation and maintenance of their device.

Additionally, there are various non-structural and structural stormwater BMPs that can be implemented to reduce water pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPs are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities.

3.9 HYDROLOGY AND WATER QUALITY

Post-construction elements of the SWMP are governed by City ordinances that require compliance with the City's SWQCCP. The SWQCCP identifies a range of post-construction BMPs that must be incorporated into development plans. The BMPs include specific volume reduction and water quality control requirements for new development. The Proposed Project is required to conform to these specific requirements. New development is required to incorporate four categories of stormwater pollution control:

- **Site Design Controls:** Practices that protect sensitive environmental features and reduce stormwater runoff by minimizing impervious cover.
- **Source Controls:** Operational practices designed to prevent pollutants from contacting stormwater runoff or prevent contact of contaminated runoff to the storm drain system.
- **Volume Reduction Measures:** Practices that can be used to direct, retain, reuse and/or infiltrate stormwater runoff (e.g., rain gardens, rain barrels). A combination of Volume Reduction Measures and Treatment Controls must be used to meet the Volume Reduction Requirement.
- **Treatment Controls:** Engineered technologies designed to remove pollutants from stormwater runoff. Treatment controls must be designed to treat the Stormwater Quality Design Flow (SQDF) or Stormwater Quality Design Volume (SQDV). Treatment Controls are classified as either LID Treatment Controls or Conventional Treatment Controls. Stockton Municipal Code Chapter 13.20 – Stormwater Quality Control Criteria Plan - requires conformance with the SWQCCP. Developers are required to enter into an agreement for maintenance of the post-construction BMPs. It is noted that this category of stormwater pollution control would only be required for the commercial site. The residential portion of the Project would be required to annex into an assessment district for the maintenance of the basins.

The City's storm water permit includes requirements to ensure that storm water discharges would not cause or contribute to violations of water quality standards. As a result, implementation of the storm water permit requirements as would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site during the operational phase of the project. The management of water quality through obtaining a General Stormwater Permit and implementing BMPs is intended to ensure that water quality does not degrade to levels that would violate water quality standards. These are existing regulatory requirements. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in additional operational activities that could violate water quality standards or waste discharge requirements during operation. As such, potential impacts identified under the proposed Project would not occur. Under this alternative, **no impact** would occur, and no

mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a K-8 school. This Alternative would result in a reduction of seven units when compared to the proposed Project. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

The long-term operations of this alternative, as with the proposed Project, could result in long-term impacts to surface water quality from urban stormwater runoff. The With Bridge Alternative would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas.

Operational impacts would be required to implement standard requirements and mitigation as mentioned previously, thus impacts compared to the proposed Project, would be roughly equal relative to this topic.

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. During operation, the improvements made could increase the overall amount of roadway runoff into Bear Creek. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion.

The bridge crossing over Bear Creek proposed by this alternative provides additional potential for water quality concerns during operation. Nevertheless, the With Bridge Alternative would result in **less than significant** impacts related to this environmental topic. Because this alternative would construct a bridge crossing which would require additional potential for water quality concerns, compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

The long-term operations of this alternative, as with the proposed Project, could result in long-term impacts to surface water quality from urban stormwater runoff. The General Plan 2035 Alternative would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas.

Operational impacts would be required to implement standard requirements and mitigation as mentioned previously, thus impacts compared to the proposed Project, would be roughly equal relative to this topic.

3.9 HYDROLOGY AND WATER QUALITY

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. During operation, the improvements made could increase the overall amount of roadway runoff into Bear Creek. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion.

The bridge crossing over Bear Creek proposed by this alternative provides additional potential for water quality concerns during operation. Nevertheless, the With Bridge Alternative would result in **less than significant** impacts related to this environmental topic. Because this alternative would construct a bridge crossing which would require additional potential for water quality concerns, compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas. Normal activities in these developed areas include the use of various automotive petroleum products (i.e. oil, grease, and fuel), common household hazardous materials, heavy metals, pesticides, herbicides, fertilizers, and sediment. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of uses, and density of people. Through the adherence to standard requirements and mitigation measures identified previously, the proposed Project, and the Reduced Project Alternative would be a **less than significant** impact relative to this environmental topic.

However, the increased areas of undeveloped land under the Reduced Project Alternative will remain pervious to precipitation, which will facilitate the natural biofiltration of stormwater. This alternative will still include a stormwater detention/basin, and provide natural BMPs to reduce pollutants in stormwater runoff. Similar to the proposed Project, the potential to violate water quality standards or waste discharge requirements during operation would remain a **less than significant** impact relative to this topic; however, this alternative would have slightly less impacts related to this topic than the proposed Project because less land would be converted to urban uses and areas of disturbance would be reduced. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative ongoing operational phase requires the final discharge of stormwater into Bear Creek. As stated previously, the discharge of stormwater must be treated through BMPs prior to its discharge. The City of Stockton implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Under the City's standard practices, the owner or operator of a commercial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses.

Although this alternative would reduce the number of residential units by 283 (with school) to 301 (without school) units as compared to the proposed Project, the Reduced Intensity/Density Alternative would require equal disturbance. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the General Plan, and Stockton SWMP.

While the Reduced Intensity/Density Alternative would include fewer residential units and the elimination of commercial components, the development area would remain similar; operational runoff concerns would be similar to the proposed Project. Similar to the proposed Project, compliance with the requirements of the General Plan and Stockton SWMP would ensure that the potential to violate water quality standards or waste discharge requirements during operation would remain **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. (Less than Significant)

Proposed Project:

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potential; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

Table 3.9-4 below identifies the soils in the Project site and the soils infiltration rate. The Project site has soils with a hydrologic group of “D”, which is indicative of soils having a very slow infiltration rate when thoroughly wet, and soils with a hydrologic group of “C”, which is indicative of soils having a slow infiltration rate when thoroughly wet. The infiltration rate of the soils on the Project site is considered low to very low.

TABLE 3.9-4: PROJECT SITE SOILS

UNIT SYMBOL	NAME	PERCENT IN AOI	HYDROLOGIC GROUP
180	Jacktone clay 0 to 2 percent slopes	72.48%	D
250	Stockton clay 0 to 2 percent slopes	24.37%	C

SOURCE: NRCS WEB SOIL SURVEY 2016.

Development of the proposed Project will cover roughly 40 percent of the existing Project site with impervious surfaces and could reduce rainwater infiltration and groundwater recharge further. The park areas and open space buffers along Bear Creek will remain largely pervious. The

3.9 HYDROLOGY AND WATER QUALITY

collection of rainwater for those areas of impervious surfaces will be routed into the proposed Project's storm drainage system which is eventually pumped after treatment into Bear Creek.

The COSMUD prepared a Water Supply Assessment (WSA) for the proposed Project (COSMUD, 2017). This WSA determined that the COSMUD can support the Project based on the 2015 UWMP. COSMUD has shown that sufficient water supplies exist to meet the Project's build-out water demand as well as all existing and reasonably foreseeable water demands. COSMUD makes this determination based on the information provided in this WSA and on the following specific facts:

- The existing near-term and long-term reliable supplies of surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMA.
- The Project water demands will be positively affected by the implementation of COSMUD's eight Demand Management Measure and adherence to SB7-7 (i.e., required statewide 20 percent reduction on a per capita basis by 2020).
- The existing and future use of groundwater supplies has been extensively described in the 2015 UWMP which includes the Groundwater Management Plan for Eastern San Joaquin Groundwater Basin as Appendix "H". All studies show that sufficient groundwater supplies exist.

While the Project site's soils have a low infiltration rate based on the relative percentage of sands, much of the groundwater recharge in the basin occurs in the sand and gravels along the San Joaquin River from Sierra snowmelt flowing downstream. Precipitation in the region is 13.81 inches, most of which falls between November through April. A portion of this annual rainfall infiltrates the soil and groundwater basin, while a portion is discharged downstream into the Delta. While the proposed Project would reduce the amount of pervious surfaces within the Project site, it will retain approximately 60 percent of the site as a pervious surface. Additionally, the existing near-term and long-term reliable supplies of surface water and indigenous groundwater can deliver a sustainable reliable water supply to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the underlying groundwater basin.

In summary, the proposed Project site is not a substantial groundwater recharge area, and the Project would maintain open space areas, park areas, and pervious surfaces to allow for infiltration of groundwater. The proposed Project would not cause the substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. As such, implementation of the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not

result in the addition of impervious surfaces. As such, infringements to groundwater recharge would not occur. However, elimination of agricultural uses by the proposed Project would result in less groundwater withdrawn, thereby providing a small and unquantified beneficial impact on groundwater quantity.

Under this alternative, **no impact** would occur beyond current conditions, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. This Alternative would result in a reduction of seven units when compared to the proposed Project.

The With Bridge Alternative would have roughly similar impacts to groundwater recharge due to similar development throughout the Project site. The slight reduction in units and subsequent reduction in population would slightly decrease potable water demands, a portion of which would come from groundwater. Similar to the proposed Project, impacts to groundwater supplies and groundwater recharge would remain a **less than significant** impact relative to this topic. However, because this alternative would reduce water consumption compared to the proposed Project, this alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

While the General Plan 2035 Alternative would have roughly similar impacts to groundwater recharge due to similar development throughout the Project site, the additional units and subsequent additional population would increase potable water demands, a portion of which would come from groundwater. Similar to the proposed Project, impacts to groundwater supplies and groundwater recharge would remain a **less than significant** impact relative to this topic. However, because this alternative would require additional water consumption, compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative would result in the permanent conversion of portions of the Project site to urban uses, as previously described. However, approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative.

Under the Reduced Project Alternative, the increased areas of undeveloped land will remain pervious to precipitation, which will facilitate groundwater recharge and the natural biofiltration of stormwater. Additionally, due to the reduced number of units as described previously, this alternative would require less potable water supplies. Similar to the proposed Project, impacts to groundwater supplies and groundwater recharge would remain a **less than significant** impact relative to this topic. However, because this alternative would require less water consumption, and provide more opportunities for groundwater recharge, compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative would result in the permanent conversion of the 318.82-acre Project site to urban uses. Under this alternative, as with the proposed Project, similar areas of land will remain impervious to precipitation, which will result in similar impacts groundwater recharge. Additionally, due to the reduced number of units (and subsequent service population) as described previously, this alternative would require less potable water supplies. Similar to the proposed Project, impacts to groundwater supplies and groundwater recharge would remain a **less than significant** impact relative to this topic. However, because this alternative would require less water consumption, compared to the proposed Project, this alternative is slightly superior relative to this topic.

Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff. (Less than Significant)

Proposed Project:

Currently, runoff from within the Project site is collected in a system of shallow agricultural and roadside catch ponds. Public storm drain facilities are not currently installed in the agricultural fields.

Stormwater runoff occurs when precipitation from rain and snow melts and does not absorb into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment, and other pollutants that could adversely affect water quality. Stockton's stormwater is collected in catch basins and transported, untreated, directly into our local rivers, creeks, and sloughs, and eventually to the Delta. The use of BMPs is the primary method to stop contaminants from entering the system.

Planned urbanization of the Project site would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing "urban runoff." Pollutants contained within urban runoff may include, but are not limited to sediment, oxygen-demanding substances (e.g., organic matter), nutrients (primarily nitrogen and phosphorus), heavy metals, bacteria, oil and grease, and toxic chemicals that can degrade receiving waters. Urban runoff pollutants may stem from erosion of disturbed areas, deposition of atmospheric particles derived from automobile or industrial sources, corrosion or decay of building

materials, rainfall contact with toxic substances, decomposing plant materials, animal excrement, and spills of toxic materials on surfaces which receive rainfall and generate runoff. New residential uses within the Project site may also generate urban runoff from streets, driveways and parking areas. Yard areas may produce fertilizer wastes and/or bacterial contamination from animal excrement. New urban commercial development can generate urban runoff from parking areas, as well as any areas of hazardous materials storage exposed to rainfall.

As described previously, MS4 permits are required under the Clean Water Act and require the discharger to develop and implement a Storm Water Management Plan to reduce the discharge of pollutants to the MEP. The management plans specify what BMPs will be used to address certain program areas.

A primary structural BMP identified in the SWQCCP is the provision of first-flush storm water retention on the Project site and detention of other storm flows. This concept is embodied in the proposed storm water detention basin to be located in the southwestern corner of the project, which has been developed in conformance with SWQCCP design standards. The proposed Project incorporates other post-construction BMPs, such as vegetated buffer strips and swales, storm water quality basins, and City-approved proprietary units that capture and treat the first flush runoff. Incorporation of these BMPs, as well as other SWQCCP requirements, into planned site development and the proposed drainage system would provide compliance with the SWMP and reduce the potential water quality effects of urban runoff.

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge system into Bear Creek. The Project site is located within drainage basin LB 30 of the City of Stockton Storm Drainage Master Plan. The Project site encompasses the entire area of this drainage basin. There is no tributary area to this drainage basin outside of the Project's boundary. The project proposes an on-site drainage system to collect the developed condition runoff in a combination of underground pipes and surface vegetated swales and then discharge the runoff into the two proposed detention ponds. The detention ponds have been designed with surface areas and volumes in compliance with City standards. The collected runoff will be treated prior to discharge. Detained and treated storm water in the detention pond located in Park 'B' will be discharged into the on-site drainage collection system. Runoff from this pond will eventually flow into the detention pond in the park/basin located in the southwest corner of the site. Detained and treated storm water in the detention pond located in the southwestern park/basin area will be discharged (pumped) into Bear Creek via a pump station. This detention pond has been designed with a surface area and volume in compliance with City standards.

With the design and construction of flood control Improvements in accordance with City of Stockton standards and National and State agency regulations, the proposed Project would have a **less than significant** impact relative to this topic.

3.9 HYDROLOGY AND WATER QUALITY

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in the conversion of Farmlands to urban uses, thus would not alter the existing drainage patterns. Under this alternative, no impact would occur beyond current conditions. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the With Bridge Alternative would result in permanent urbanization of the Project site, which would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing urban runoff. Development of the proposed Project, and the With Bridge Alternative would be subject to the storm water pollution control measures that are part of the City's SWMP.

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. During operation, the improvements made could increase the overall amount of roadway runoff into Bear Creek. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion. Special considerations must be addressed when construction is performed in or near creeks, such as limiting fill placed in creeks and minimizing alteration of the stream channel and banks to the extent feasible.

While the With Bridge Alternative would result in similar alterations of the existing drainage pattern related to urban development and would result in a **less than significant** impact, the additional creek crossing provides additional potential for erosion and subsequent water quality concerns during construction and operational activities. Therefore, compared to the proposed Project, this alternative is inferior relative to this topic.

General Plan 2035 Alternative:

Similar to the proposed Project, the General Plan 2035 Alternative would result in permanent urbanization of the Project site, which would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing urban runoff. Development of the proposed Project, and the General Plan 2035 Alternative would be subject to the storm water pollution control measures that are part of the City's SWMP.

However, as noted above, a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and ultimately connecting with Holman Road. During operation, the improvements made could increase the overall amount of roadway runoff into Bear Creek. Bridge projects also create an opportunity to constrict or block natural streamflows that may result in increased erosion. Special considerations must be addressed when construction is

performed in or near creeks, such as limiting fill placed in creeks and minimizing alteration of the stream channel and banks to the extent feasible.

While the General Plan 2035 Alternative would result in similar alterations of the existing drainage pattern related to urban development and would result in a **less than significant** impact, the additional creek crossing provides additional potential for erosion and subsequent water quality concerns during construction and operational activities. Therefore, compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative would result in the permanent conversion of portions of the Project site. However, approximately 33 percent of the Project site would remain undeveloped under the Reduced Project Alternative. The Reduced Project Alternative would be subject to the requirements of the General Plan, and the Stockton SWMP. Drainage characteristics including the proposed detention basins would be similar to the proposed Project. However, Under the Reduced Project Alternative, the increased areas of undeveloped land will would reduce drainage requirements, and would facilitate groundwater recharge and the natural biofiltration of stormwater. Similar to the proposed Project, impacts to drainage patterns would remain a **less than significant** impact relative to this topic. However, because this alternative would provide greater portions of the site as pervious surfaces, which provide more opportunities for groundwater recharge, compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative would result in the permanent conversion of the 318.82-acre Project site to urban uses. Under this alternative, as with the proposed Project, similar areas of land will remain impervious to precipitation, which will result in similar impacts to the existing drainage pattern. Similar to the proposed Project, impacts to the existing drainage pattern would remain a **less than significant impact** relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality. (Less than Significant)

Proposed Project:

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies: Section 303(d) of the federal Clean Water Act (CWA) requires States to identify waters that do not meet water quality standards or objectives and thus are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

3.9 HYDROLOGY AND WATER QUALITY

As previously described, there are many areas within the San Joaquin County which are considered Section 303(d)-impaired waterbodies. Areas in the regional vicinity of the Project site that are impaired are referred as Delta Waterways by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown).

The San Joaquin River and Bear Creek are specifically listed by the Central Valley Regional Water Quality Control Board (CVRWQCB) as impaired water bodies under the Clean Water Act. San Joaquin River impairment is due to mercury. Bear Creek impairments include: Copper, Diazinon (pesticides), Dissolved Oxygen, and Escherichia Coli (E. Coli). No TMDLs have been recorded yet for Bear Creek; they are expected in 2021.

Under Section 303(d) of the CWA, states are required to identify the water bodies that do not meet water quality objectives through control of point source discharges under NPDES permits. For these water bodies, states are required to develop appropriate TMDLs. TMDLs are the sum of the individual pollutant load allocations for point sources, nonpoint sources," and natural background conditions, with an appropriate margin of safety for a designated water body. The TMDLs are established based on a quantitative assessment of water quality problems, the contributing sources, and load reductions or control actions needed to restore and protect an individual water body. TMDLs provide an analytical basis for planning and implementing pollution controls, land management practices, and restoration projects needed to protect water quality. When TMDLs are adopted, particularly in California, they contain implementation requirements for permitted dischargers that are intended to meet the load reductions identified in the TMDL.

Once a TMDL is completed and approved for a particular water body and pollutant, it is taken off of the list at the next listing period since the implementation of the TMDL is expected to bring the water body back into compliance with the Water Quality Objectives. As stated previously, TMDLs have not been completed by the RWQCB for Bear Creek.

In accordance with the NPDES Stormwater Program, the Project applicant would be required to submit an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP are reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB.

The ongoing operational phase of the proposed Project requires discharge of stormwater into Bear Creek, which ultimately flows into the Delta. The discharge of stormwater must be treated through BMPs prior to its discharge. The Project applicant would be required to implement the following structural BMPs that focus on preventing pollutants from entering stormwater, or alternative BMPs approved by the City of Stockton:

- **Extended Detention Facilities:** Extended detention refers to the facilities proposed for the Project site that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the Bear Creek. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge.
- **Grassed Swales:** A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils. Swales can be used throughout the Project area where feasible in the landscape design to treat parking lot runoff.
- **Proprietary Devices:** There are a variety of commercially available stormwater treatment devices designed to remove contaminants from drainage once flows enter the conveyance systems. StormFilter™ units, or equivalent filtration-type systems, are recommended within the commercial and industrial areas as the main structural BMP for these areas. Bioswales are also recommended for streets and parking areas. Drop inlet filters should also be used to control drainage runoff water quality.

Compliance with existing City standards would ensure that BMPs are implemented to reduce the amount of pollution in stormwater that is eventually discharged from the Project site into Bear Creek, which ultimately flows into the Delta during the operational phase of the project.

There are various non-structural and structural stormwater BMPs that can be implemented to reduce water pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPs are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities. The management of water quality through obtaining a General Industrial Stormwater Permit and implementing BMPs is intended to ensure that water quality does not degrade to levels that would violate water quality standards.

The Project applicant would be required to implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:

- **Pollution Prevention/Good Housekeeping**
 - A spill response and prevention plan shall be developed as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to

the NPDES general Industrial Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities.

- Streets and parking lots shall be swept at least once every two weeks.
- Operation and Maintenance (O&M) of Treatment Controls
 - An Operation and Maintenance (O&M) Plan shall be developed for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.

As previously described, the proposed on-site drainage system will collect the developed condition runoff in a combination of underground pipes and surface vegetated swales and discharge it into the two proposed detention ponds. The collected runoff will be treated prior to discharge. Detained and treated storm water in the e detention pond located in Park 'B' will be discharged into the on-site drainage collection system. Runoff from this pond will eventually flow into the detention pond in the proposed park/basin located in the southwest corner of the site. Detained and treated storm water in the detention pond located in the park/basin area will be discharged (pumped) into Bear Creek. As described previously, pumped discharge from the pond into Bear Creek will be regulated and designed in accordance with City of Stockton standards and other National and State agencies regulations.

The use of BMPs is intended to treat runoff close to the source during the construction and long term operational phase of the project to reduce stormwater quality impacts. Additionally, Stockton and County of San Joaquin SWQCCP outlines the process that must be used to effectively incorporate stormwater control measures and satisfy the requirements of the permitting agencies.

Existing regulatory requirements which require construction and operational BMPs to treat and manage project stormwater would be required for the proposed Project. Through implementation of BMPs in accordance with the City of Stockton Stormwater Management Plan, and SWQCCP, implementation of proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. As such, implementation of the No Build Alternative would not result in the potential to substantially degrade water quality. Under this alternative, **no impact** would occur beyond current conditions. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Similar to the proposed Project, the With Bridge Alternative would result in permanent urbanization of the Project site, which would result in changes to land use, natural vegetation, and

infiltration characteristics, and would introduce new sources of water pollutants, producing urban runoff. Development of the proposed Project and the With Bridge Alternative would be subject to the storm water pollution control measures that are part of the City's SWMP. This Alternative would be required to implement standard requirements and mitigation as mentioned previously, thus impacts would remain **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Similar to the proposed Project, the General Plan 2035 Alternative would result in permanent urbanization of the Project site, which would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing urban runoff. Development of the proposed Project, and the General Plan 2035 Alternative would be subject to the storm water pollution control measures that are part of the City's SWMP. This Alternative would be required to implement standard requirements and mitigation as mentioned previously, thus impacts would remain **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

As described previously, implementation of the proposed Project has the potential to result in the violation of water quality standards and discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

The increased areas of undeveloped land under the Reduced Project Alternative will remain pervious to precipitation, which will facilitate the natural biofiltration of stormwater, and reduce runoff potential. This alternative will still include a stormwater detention/basin, and provide natural BMPs to reduce pollutants in stormwater runoff. Similar to the proposed Project, the potential to degrade water quality during construction and operation would remain a **less than significant** impact relative to this topic; however, this alternative would have slightly less impacts related to this topic than the proposed Project because less land would be converted to urban uses thereby reducing land disturbance, and runoff potential. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative, as with the proposed Project, requires the final discharge of stormwater into Bear Creek. As stated previously, the discharge of stormwater must be treated through BMPs prior to its discharge. The City of Stockton implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Under the City's standard practices, the owner or operator of a commercial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses.

Although this alternative would reduce the number of residential units by 283 (with school) to 301 (without school) units as compared to the proposed Project, the Reduced Intensity/Density Alternative would require equal land disturbance. Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would be subject to the requirements of the General Plan, and Stockton SWMP.

While the Reduced Intensity/Density Alternative would include less residential units and the elimination of commercial components the development area would remain similar and operational runoff concerns would be similar to the proposed Project. Similar to the proposed Project, the potential to degrade water quality during construction and operation would remain a **less than significant** impact relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. (Less than Significant)

Proposed Project:

As shown on Figure 3.9-3, the Project site is not within a 100-year flood zone as delineated by FEMA. Development of the proposed Project would not place housing or structures in a 100-year flood hazard area.

While the project site is not within the 100-year flood hazard area, it does lie within the 200-year flood hazard area as identified on the San Joaquin County Public Works 200-year floodplain viewer (PBI Engineering, March 2015). State floodplain legislation (SB 5) for the San Joaquin River region has resulted in stricter development standards beginning in 2016. Urban areas that depend on levee protection are required to have a 200-year level of flood protection. SB 5 prohibits a city or county within the Central Valley Flood Protection Plan area from approving a development agreement, discretionary permit or entitlement, tentative map or parcel map for any property within a flood hazard zone unless they can demonstrate any of the following:

- The project has already achieved the applicable level of flood protection, conditions have been imposed on the project approval that will eventually result in the applicable level of flood protection, or adequate progress is being made towards achievement of the applicable level of flood protection. Adequate progress is defined as meeting all of the following:
 - The project scope, cost and schedule have been developed;
 - In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
 - Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
 - The city or county has not been responsible for any significant delay in completion of the system; and

- The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

To account for new requirements imposed by SB-5, San Joaquin County and the City of Stockton have developed flood mapping that delineates 200-year flood extents. Based on SB-5 requirements, the City of Stockton amended their General Plan on June 23rd, 2015 to modify the City's existing Safety Element to incorporate new goals, policies, and implementation measures related to 200-year flood risk and flood protection. The City has completed Zoning Code Amendments in May 2016 to reflect SB-5 requirements. Building and zoning code changes apply to all permits issued after July 2, 2016. These changes include increased building setbacks for flood fighting along levees and requirements to elevate buildings above the floodplain or use flood resistant building materials for development in areas identified as flood hazard zones on federal flood maps, while streamlining the process of making specific findings for development of residential and commercial land uses.

A "finding" is a conclusion based on facts, and is commonly required to support the decision to approve a land use permit. Before an affected project can be approved, findings must be made that the proposal meets the new state flood protection requirements.

Findings will be made for the following:

- Construction of all new residential structures;
- Discretionary permit or other discretionary entitlement with construction of a new building or construction that increases allowed occupancy for an existing building;
- New development agreements for all types of property development;
- Tentative maps consistent with the Subdivision Map Act for all subdivisions, and
- Parcel maps for which a tentative parcel map is not required, consistent with the Subdivision Act.

Pursuant to the revised City floodplain regulations contained in Chapter 16.90 of the City Municipal Code, the proposed Project would be required to comply with SB-5 requirements. Through compliance with these existing regulations, impacts would be **less than significant**.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. As such, the No Build Alternative would not place housing or structures within a delineated floodplain. Under this alternative, **no impact** would occur. Therefore, compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. The With Bridge Alternative, as

with the proposed Project, would place housing or structures within a delineated floodplain. Compliance with the same regulatory requirements as the proposed Project would ensure that the With Bridge Alternative complies with SB-5 requirements, and impacts would be **less than significant**. As such, compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

The General Plan 2035 Alternative, as with the proposed Project, would place housing or structures within a delineated floodplain. Compliance with the same regulatory requirements as the proposed Project would ensure that the General Plan 2035 Alternative complies with SB-5 requirements, and impacts would be **less than significant**. As such, compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative, as with the proposed Project, would place housing or structures within a delineated floodplain. Compliance with the same regulatory requirements as the proposed Project would ensure that the Reduced Project Alternative complies with SB-5 requirements, and impacts would be **less than significant**. As such, compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative, as with the proposed Project, would place housing or structures within a delineated floodplain. Compliance with the same regulatory requirements as the proposed Project would ensure that the Reduced Intensity/Density Alternative complies with SB-5 requirements, and impacts would be **less than significant**. As such, compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow. (Less than Significant)

Proposed Project:

A tsunami is a sea wave caused by a submarine earthquake, landslide, or volcanic eruption. Tsunami can cause catastrophic damage to shallow or exposed shorelines. The Project site is approximately 50 miles from San Francisco Bay and 70 miles from the coast, which is sufficiently distant to preclude effects from a tsunami.

Seiches are changes or oscillations of water levels within a confined water body. Seiches are caused by fluctuation in the atmosphere, tidal currents or earthquakes. The effect of this phenomenon is a standing wave that would occur when influenced by the external causes. The Project site is not adjacent to any lakes that pose significant a risk from a seiche event.

A mudflow is a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity. Mudflow events are caused by a combination of factors, including soil type, soil profile, precipitation, and slope. Mudflow may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. As a result of this super-saturation, soil and rock materials become unstable and eventually slide away from their existing location. Soils most susceptible to mudflow are saturated, loose, non-plastic, uniformly graded, and fine-grained sand deposits. The Project site is relatively flat making the potential of mudflows low.

The Project site is subject to flood inundation as a result of dam failure. Figure 3.9-4 shows areas that are susceptible to dam inundation. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. As discussed previously, larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating condition. As such, failure of these dams is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

The Project site is subject to flood inundation as a result of levee failure. The levees protecting the Project site are located along Bear Creek on the southern border of the Project site. The Bear Creek levee is maintained by the San Joaquin Area Flood Control Agency (SJAFC). The Bear Creek Levee is accredited by FEMA, for protection from the 100-year floodplain.

According to the Draft Lower San Joaquin River and Delta South Regional Flood Management Plan (January 2014), the right bank of Bear Creek just downstream of Highway 99 was found to have moderate freeboard deficiencies and geometry deficiencies in the LSJRF, and a higher overall concern in the 2012 CVFPP. In the event of a breach at this location, 200-year floodwaters would inundate approximately 1,800 acres of land between Bear Creek and Pixley Slough including the western portions of the proposed Project site with flood depths from 0.01 to 1.0 feet.

Recently, the U.S Army Corps of Engineers (USACE) removed their levee certification support for the Bear Creek system by informing FEMA that they no longer supported their certification due to the fact they have a 10-year life on all levee certifications. However, FEMA did not remove the levee accreditation. Regular inspection and maintenance by SJAFC will ensure that the levees are kept in safe operating condition. As such, failure of the levee is considered to have a low probability of occurring. Additionally, SJAFC has recently completed levee evaluation which consisted of surveying and mapping, Hydraulic modeling, interior drainage and embankment

3.9 HYDROLOGY AND WATER QUALITY

protection analyses, geotechnical analyses, and O&M Information review and updates. The SJAFCA submitted certification packages to FEMA on February 11, 2015. FEMA responded to this certification package on January 19, 2016 and requested additional information from the SJAFCA.¹ The SJAFCA submitted the requested additional information in April 2016. After no response from FEMA was received, the SJAFCA followed up with the agency, who noted that, due to staffing shortages, a delayed response should be expected.

The proposed Project would not result in the exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow. This impact is considered **less than significant**.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Under this alternative, **no impact** would occur. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

With Bridge Alternative:

The With Bridge Alternative would result in the permanent conversion of portions Project site to urban uses. Additionally, this alternative would result in a reduction of seven units when compared to the proposed Project, which would result in a reduced number structures and subsequently would accommodate slightly less population.

While the With Bridge Alternative would have roughly similar impacts relative to flood concerns due to similar development throughout the Project site, the reduction of units and subsequent reduced population would place fewer structures and people within the project area. As a result, the With Bridge Alternative would potentially decrease impacts in the event of a dam or levee failure. Similar to the proposed Project, impacts to flooding as a result of dam or levee failure would remain a **less than significant** impact relative to this topic due to the low probability of occurrence. However, because this alternative would place less property and fewer people within the Project site, compared to the proposed Project, this alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

The General Plan 2035 Alternative, as with the proposed Project, would result in the permanent conversion of the Project site to urban uses. This alternative would result in up to 1,978 residential units (low and high density), which is 475 (without school site) to 565 (with school site) more units than under the proposed Project.

While the General Plan 2035 Alternative would have roughly similar impacts relative to flood concerns due to similar development throughout the Project site, the additional units and

¹ Duncan, Marlo. Project Manager for the San Joaquin Area Flood Control Agency. Phone conversations. September 26, 2017.

subsequent additional population would place more structures and people within the Project area. As a result, this alternative would potentially increase impacts in the event of a dam or levee failure. Similar to the proposed Project, impacts to flooding as a result of dam or levee failure would remain a **less than significant** impact relative to this topic due to the low probability of occurrence. However, because this alternative would place additional property and people within the Project site, compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative would result in the permanent conversion of portions Project site to urban uses. Additionally, as described previously, this alternative would result in reduced development of structures and subsequently would accommodate less population.

While the Reduced Project Alternative would have roughly similar impacts relative to flood concerns due to similar development throughout the Project site, the reduction of units and subsequent reduced population would place fewer structures and people within the project area. As a result, the Reduced Project Alternative would potentially decrease impacts in the event of a dam or levee failure. Similar to the proposed Project, impacts to flooding as a result of dam or levee failure would remain a **less than significant** impact relative to this topic due to the low probability of occurrence. However, because this alternative would place less property and people within the Project site, compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative, as with the proposed Project, would result in the permanent conversion of the Project site to urban uses. Additionally, as described previously, this alternative would result in reduced development of structures and subsequently would accommodate less population.

While the Reduced Intensity/Density Alternative would have roughly similar impacts relative to flood concerns due to similar development throughout the Project site, the reduction of units and subsequent reduced population would place fewer structures and people within the project area; as a result, this alternative would potentially decrease impacts in the event of a dam or levee failure. Similar to the proposed Project, impacts to flooding as a result of dam or levee failure would remain a **less than significant** impact relative to this topic due to the low probability of occurrence. However, because this alternative would place less property and people within the Project site, compared to the proposed Project, this alternative is slightly superior relative to this topic.


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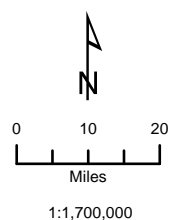


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Figure 3.9-1: San Joaquin River Watershed

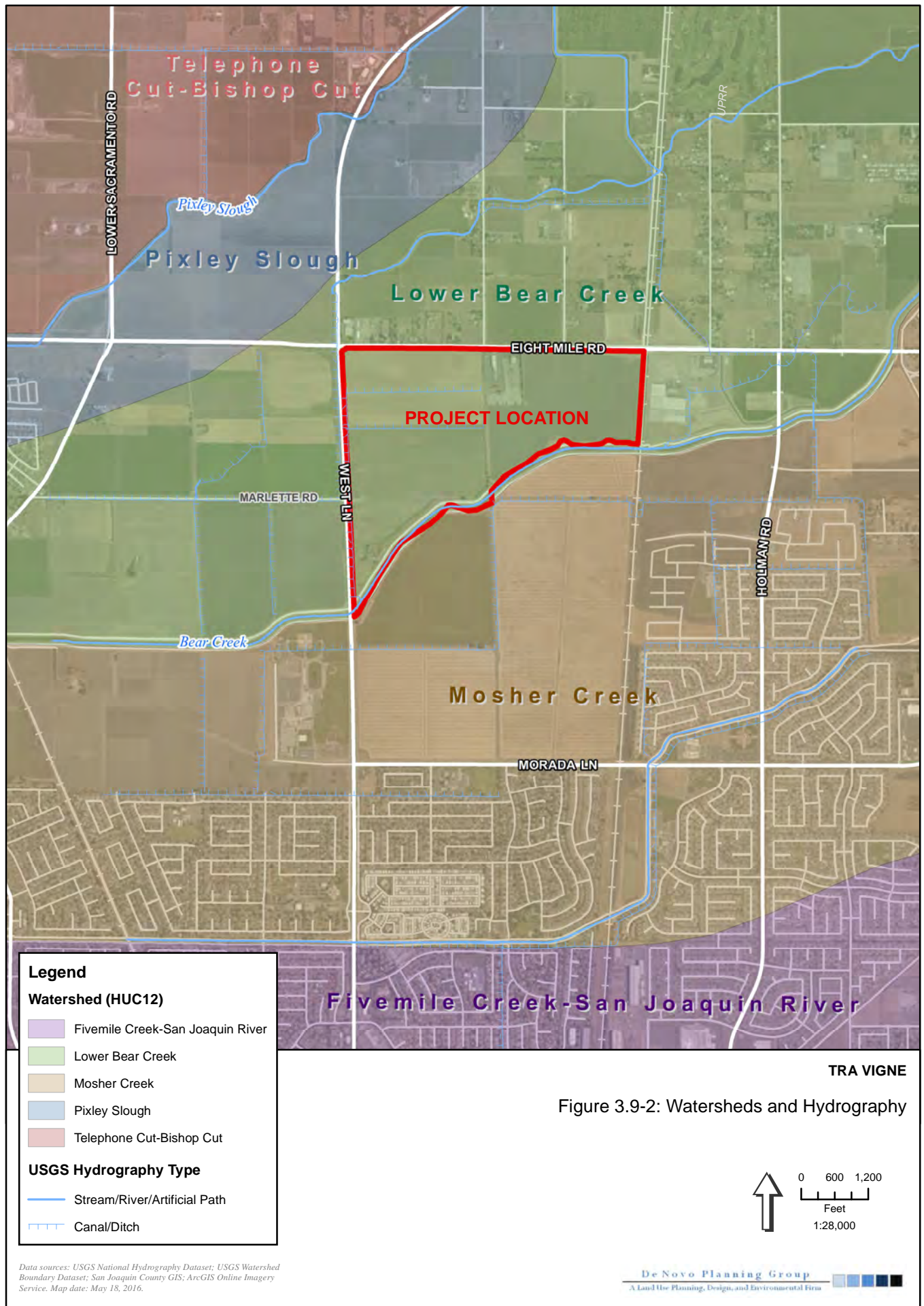
Legend

 San Joaquin River Watershed

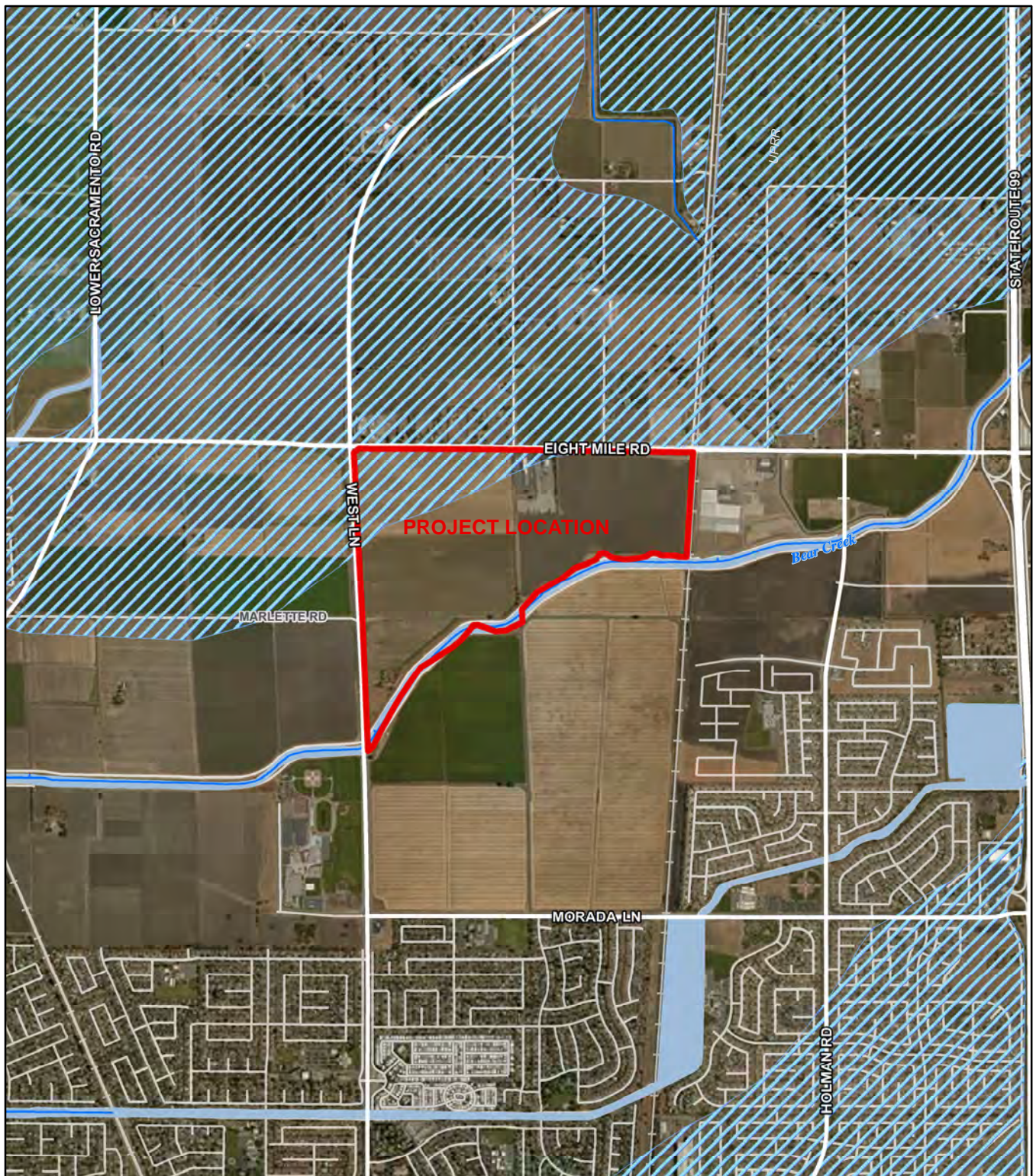


Sources: Department of Water Resources, San Joaquin County,
California Spatial Information Library. Map date: February 1, 2016.

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Legend

 Project Boundary

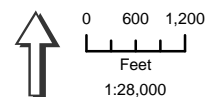
FEMA Flood Zones

 Zone X-Shaded - Other Flood Area
(0.2% Annual chance flood hazard)

 Zone A - Special Flood Hazard Area
(100-yr Flood)

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Figure 3.9-3: Project Site FEMA Flood Insurance Rate Map

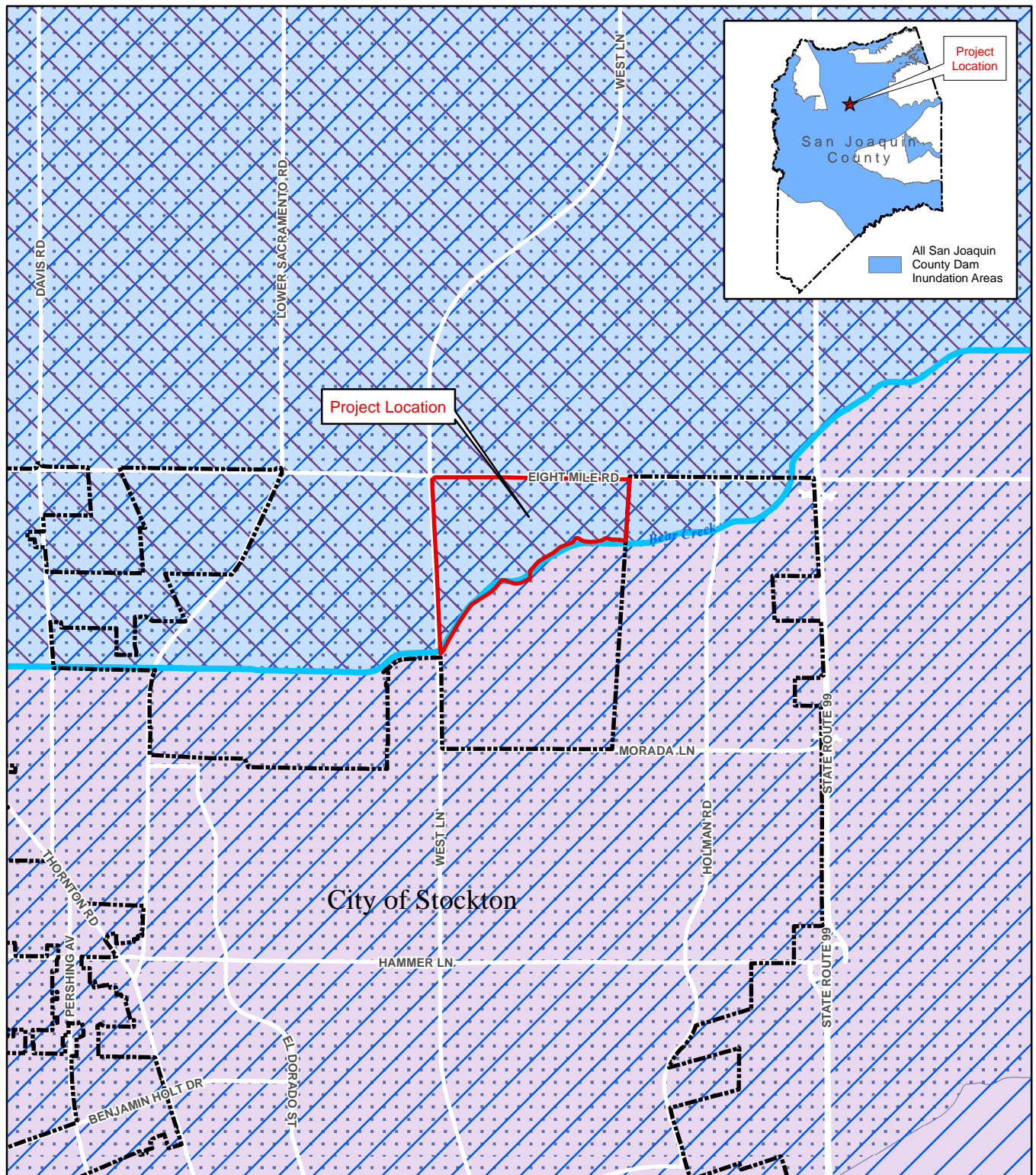


Data sources: FEMA; San Joaquin County GIS; ArcGIS Online Imagery
Service. Map date: May 18, 2016.

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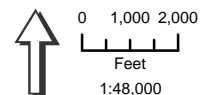
Legend

-  Salt Springs
-  Camanche
-  Camanche South Dikes
-  New Hogan
-  Pardee

Data sources: San Joaquin County GIS, Map date: March 3, 2016.

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Figure 3.9-4: Dam Inundation Areas



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3.10.1 INTRODUCTION

This section describes the existing land uses on the Project site and in the surrounding area, describes the applicable land use regulations, and evaluates the environmental effects of implementation of the proposed Project related to land use, population, and housing. Information in this section is based on information provided in the Project materials and the following reference documents: *Stockton General Plan 2035* (City of Stockton, 2007), *Stockton General Plan 2035 Environmental Impact Report* (City of Stockton, 2007), the City of Stockton Municipal Code, Title 16 – Development Code (City of Stockton, 2016), the San Joaquin County Municipal Code, Title 9 – Development Title (County of San Joaquin, 2015), the San Joaquin County General Plan (County of San Joaquin, 1995), and the San Joaquin County Local Agency Formation Commission (LAFCo) Policies and Procedures Document (San Joaquin County LAFCo, 2007). There were no comments received during the NOP scoping process related to this environmental topic.

3.10.2 ENVIRONMENTAL SETTING

EXISTING PHYSICAL ENVIRONMENT

The City of Stockton is located in central San Joaquin County, approximately 11 miles north of Manteca and approximately 31 miles south of Elk Grove. State Route 99 travels through Stockton near the eastern edge of the City and Interstate 5 travels through Stockton near the western edge of the City. The Stockton Planning Area, which includes the City and its Sphere of Influence, occupies an area of approximately 135 square miles.

Project Site

The Project site is located along the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project site is located immediately southeast of the intersection of West Lane and Eight Mile Road, approximately six miles north of downtown Stockton. Figures 2-1 and 2-2 found in Section 2.0 illustrate the regional location and Project vicinity.

The Project site comprises 318.82 acres of land bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. The Project site consists largely of active agricultural fields with 15.57 acres of industrial uses in the north-central portion of the Project site. The Project site is relatively flat and ranges in elevation from approximately 25 to 35 feet above sea level. An irrigation catch pond runs along a portion of the north side of the Project site. The industrial portion of the Project site consists of two warehouses and associated parking. One residence formerly located within the southwestern portion of the Project site has been vacated and demolished.

Surrounding Land Uses

The Project site is surrounded by a variety of undeveloped land as well as existing developed land uses. Uses immediately adjacent to the Project site include a truck and trailer repair service establishment to the northwest across Eight Mile Road. Other existing uses north of the Project site include large-lot single family residences and agricultural land. Immediately to the east of the Project site across the UPRR railroad tracks are industrial land uses, including several large warehouses and a large storage lot. Farmland lies immediately west of the Project site, across West Lane, and on the far side of Bear Creek, south of the Project site. Other nearby uses include Ronald McNair High School located immediately southwest of the Project site. Figure 2-5 in Section 2.0 shows aerial imagery of the current existing site uses within the Project site.

The Project site is bordered to the east by the City of Stockton city limits and existing industrial development within the City. The parcels to the east of the Project site are designated I (Industrial), C (Commercial), LDR (Low Density Residential), and HDR (High Density Residential) by the City's General Plan. The parcels to the south of the Project site are designated LDR, MDR (Medium Density Residential), HDR, and C by the Stockton General Plan and R/L (Low Density Residential) and R/H (High Density Residential) by the San Joaquin County General Plan. The Project site is bordered on the west by West Lane with additional undeveloped agricultural land west of West Lane. Land lying to the west of the site is designated V (Village) by the Stockton General Plan and R/L, R/H, and C/O (Office Commercial) by the San Joaquin County General Plan. Land north of the Project site is designated V by the City's General Plan and A/G (General Agriculture) and OS/O (Resource Conservation) by the County's General Plan.

DEMOGRAPHICS

Population Trends

The City experienced a population increase from 2005 to 2015 of 26,999 persons (9.6%) as shown in Table 3.10-1. During the period from 2010 to 2016, population continued to increase in the City, resulting in a total population of 307,072 in 2016.

TABLE 3.10-1: POPULATION GROWTH

YEAR	POPULATION	CHANGE	PERCENT CHANGE
2005	280,000	-	-
2010	291,707	11,707	4.2%
2015	306,999	15,292	5.2%
2016 ¹	307,072	73	0.0%

NOTE: ¹ THE 2016 POPULATION VALUE IS AN ESTIMATE AS OF JULY 1, 2016.

SOURCES: DOF, 2005, 2010 AND 2015; U.S. CENSUS BUREAU, 2017.

Housing Stock

Table 3.10-2 summarizes the growth of the City's housing stock between 2010 and 2015. The number of housing units increased from 99,637 in 2010 to 100,097 in 2015 (0.5% growth).

TABLE 3.10-2: HOUSING UNIT GROWTH

YEAR	HOUSING UNITS	CHANGE	PERCENT CHANGE
2010	99,637	-	-
2015	100,097	460	0.5%

SOURCE: DOF, 2010 AND 2015.

Persons Per Dwelling Unit

According to the most recent U.S. Census data (2015), the average number of persons residing in a dwelling unit in the City of Stockton is 3.17.

3.10.3 REGULATORY SETTING

STATE

Government Code

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a jurisdiction and of any land outside its boundaries that, in the jurisdiction's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the jurisdiction's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd. [c]).

State of California Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. In approving an annexation, the LAFCo will consider the following factors:

- Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas;

3.10 LAND USE AND POPULATION

and the likelihood of significant growth in the area and in adjacent incorporated and unincorporated areas during the next ten years.

- The need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; and the probable effect of the pro-posed incorporation, formation, annexation, exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.
- The effect of the proposed action and of alternative actions on adjacent areas, on mutual social and economic interests, and on the local government structure of the county.
- The conformity of both the proposal and its anticipated effects with both the adopted commission policies on providing planned, orderly, and efficient patterns of urban development, and the policies and priorities set forth in Government Code section 56377.
- The effect of the proposal on maintaining the physical and economic integrity of agricultural lands, as defined by Government Code section 56016.
- The definiteness and certainty of the boundaries of the territory, nonconformance of proposed boundaries with lines of assessment or ownership, creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.
- Consistency with city or county general and specific plans.
- The sphere of influence of any local agency that may be applicable to the proposal being reviewed.
- The comments of any affected local agency.
- The ability of the newly formed or receiving entity to provide the services that are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.
- Timely availability of water supplies adequate for projected needs as specified in Government Code section 65352.5.
- The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of the regional housing needs, as determined by the appropriate council of governments consistent with Housing Element laws.
- Any information or comments from lawmakers.
- Any information relating to existing land use designations.

In addition to the above factors, LAFCo may also consider any resolution raising objections to the action that may be filed by an affected agency, and any other matters which the commission deems material.

LOCAL

City of Stockton General Plan

As noted above, General Plans are prepared under a mandate from the State of California, which requires each city and county to prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands. State law requires general plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. In addition to those components required by State law, the Stockton General Plan also contains optional elements, including Community Design, Economic Development, District and Villages, Public Facilities and Services, Recreation and Waterways, and Youth and Education.

The Stockton General Plan is comprehensive, long-range, and general. The Stockton General Plan has the following purposes:

- Provide the public opportunities for meaningful participation in the planning and decision-making process;
- Provide a description of current conditions and trends impacting the City;
- Identify planning issues, opportunities, and challenges that should be addressed in the General Plan;
- Explore land use and policy alternatives;
- Ensure that the General Plan is current, internally consistent, and easy to use;
- Provide guidance in the planning and evaluation of future land and resource decisions; and
- Provide a vision and framework for the future growth of the City of Stockton.

General Plan Land Use Map (2007): The Stockton General Plan Land Use Map portrays the ultimate uses of land in the City of Stockton through land use designations. The Land Use Map designates the Project site as LDR (Low Density Residential up to 6.1 dwelling units per gross acre [du/ac]), HDR (High Density Residential up to 23.2 du/ac outside the downtown area), C (Commercial), and I (Industrial). Figure 2-6 in Section 2.0 depicts the Stockton General Plan land use designations for the Project site and the surrounding areas. The General Plan contains the following descriptions for these land uses:

Low Density Residential (LDR) (up to 6.1 du/ac): The LDR land use establishes a mix of dwelling unit types and character determined by the individual site and market conditions. The type of dwelling units anticipated in this density range include single family residential units, duplexes, triplexes, semi-detached patio-homes, townhomes, public and quasi-public uses, second units, and other similar and compatible uses.

High Density Residential (HDR) (up to 23.2 du/ac): The HDR land use includes multi-family apartment style housing. The type of dwelling units anticipated in this density range include multi-family residential units, apartments, dormitories, group homes, guest homes, public and quasi-public uses, and other similar and compatible uses.

3.10 LAND USE AND POPULATION

Commercial (C) (Floor Area Ratio: 0.3, maximum du/ac: 23.2): Typical uses permitted within the C land use include: a wide variety of retail, service, and commercial recreational uses, business, medical and professional offices, residential uses, public and quasi-public uses, and other similar and compatible uses. Community or regional commercial centers as well as freestanding commercial establishments are permitted.

Industrial (I) (Floor Area Ratio: 0.6): Typical uses permitted within the I land use include: a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. Residential uses are prohibited.

City of Stockton General Plan Policies:

The following goal and policies of the Stockton General Plan related to land use and population are applicable to the proposed Project.

Land Use Element

GENERAL LAND USE GOAL

- LU-1. To ensure that Stockton's future growth will proceed in an orderly manner, encourage and provide incentives for infill development, prevent urban sprawl, and promote the efficient and equitable provision of public services.

GENERAL LAND USE POLICIES

- LU-1.2. The City shall designate an Urban Service Area boundary beyond the existing City limits within which City services and facilities will be available for extension upon annexation and where future urban development shall be in conformance with City Council adopted master utility and circulation plans.
- LU-1.3. Expanding the Urban Service Area. The City shall expand the Urban Service Area Boundary only when applicable General Plan policies can be met and appropriate services and efficient infrastructure can be provided.
- LU-1.6. Building Intensity and Population Density. The City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code.
- LU-1.7. Land Use Conflicts. The City shall continue to apply the regulations and procedures of the Development Code and shall use the environmental process to prevent or mitigate land use conflicts.
- LU-1.9. City/County Uniform Land Use Policy. The City shall work with San Joaquin County and surrounding cities to develop a uniform land use policy for the lands within and adjacent to the City so no inconsistencies will arise should these areas eventually be annexed to the City.

Stockton Municipal Code, Title 16 – Development Code

The purpose of Title 16, Development Code, of the City's Municipal Code is to establish the zoning districts applied to property within the City, determine how the zoning districts are applied on the Zoning Map, and provides general permit requirements for development and new land use in accordance with the Stockton General Plan.

Zoning Map: The Zoning Map identifies zoning districts within the City at the parcel level. The Zoning Map does not designate the Project site because the site is not located within the City limits. The San Joaquin County Local Agency Formation Commission (LAFCo) will require the Project site to be pre-zoned by the City of Stockton in conjunction with the proposed annexation.

The City's pre-zoning for the Project site will include the following zoning designations: Residential, Low Density (RL), Residential, High Density (RH), Industrial, Limited (IL), Commercial, General (CG), and Open Space (OS). The pre-zoning would go into effect upon annexation into the City of Stockton. The proposed pre-zoning for the Project site is shown in Section 2.0 Figure 2-10. The City's Development Code provides the following descriptions for RL, RH, IL, CG, and OS designations:

RL Residential, Low Density Zoning District: This designation allows for substantial flexibility in selecting dwelling unit types and parcel configurations to suit site conditions and housing needs. The types of dwelling units include small lots and clustered lots as well as conventional large-lot detached residences. The parcel shall meet the density requirement for the RL Zoning District, and parcels proposed for duplexes shall be at least 10,000 square feet.

RH Residential, High Density Zoning District: This designation is applied to high-density residential neighborhoods. Allowable housing types may include multifamily and various types of group housing, as well as high density single-family residential development. Allowable density may be up to 29 dwelling units per net acre; minimum density is 17.5 dwelling units per net acre (however, any single legal residential parcel of record may be developed with one single family dwelling).

IL Industrial, Limited Zoning District: This designation creates sites for limited industrial uses. Any proposed development and new land uses within the IL Zoning District shall be conducted entirely within an enclosed structure except for those cases in which another type of roofed enclosure is approved by the Director or Commission for use at a particular location. Outside manufacturing, fabrication, processing, assembling, or repair is prohibited.

CG Commercial, General Zoning District: This designation creates sites for general commercial uses. Storage and sales may be located outside if screened from the visible rights-of-way and/or are in compliance with the requirements for outdoor display and sales. Motion picture theatres and warehouse retail stores are required to comply with the standards set forth in the Development Code.

OS Open Space Zoning District: This designation is set aside for permanent open space in order to preserve and protect environmentally sensitive areas. There are no zone specific standards for the OS Zoning District.

San Joaquin County General Plan

The San Joaquin County General Plan is comprehensive, long-range, and general. The San Joaquin County General Plan has the following purposes:

- To identify the community's land use, transportation, environmental, economic and social goals and policies as they relate to land use, conservation and development;
- To enable the County Board of Supervisors and the Planning Commission to establish long-range conservation and development policies;
- To provide a basis for judging whether specific private development proposals and public projects are in harmony with these policies; and
- To inform citizens, developers, decision makers, and other jurisdictions of the policies that will guide development and conservation within the County.

General Plan Land Use Map (2010): The San Joaquin County General Plan Land Use Map portrays the ultimate uses of land in the County through land use designations. The Land Use Map designates the Project site as R/L (Residential/Low Density 2 to 6 du/ac), R/H (Residential/ High Density 15 to 40 du/ac), C/C (Community Commercial), I/L (Limited Industrial), and I/G (General Industrial). Figure 2-7a in Section 2.0 depicts the San Joaquin County General Plan land use designations for the Project site and the surrounding areas. The General Plan contains the following descriptions for these land uses:

Residential/Low Density (R/L) (2 to 6 du/ac): The R/L land use is appropriate near other single family neighborhoods. The type of dwelling units anticipated in the R/L land use designation include detached single family dwelling units at 2 to 6 du/ac.

Residential/High Density (R/H) (15 to 40 du/ac): The R/H land use is appropriate near central business districts, around major commercial areas, and along major transportation routes in urban communities. This intensity of residential development is normally found in incorporated cities. The type of dwelling units anticipated in the R/H land use designation include apartment buildings and other multifamily dwelling units at 15 to 40 du/ac.

Community Commercial (C/C) (Maximum percent of building coverage: 60, maximum du/ac: 6): The C/C designation is intended to offer areas with a full range of commercial retail and service establishments, allowing comparison shopping and serving urban communities or regional markets. A C/C area may be the only commercial area in communities of 3,000 or fewer people. The C/C land use is permitted only in central business districts or extensive commercial areas in urban communities, and are located with primary access in a minor arterial or higher classification

roadway. Typical uses permitted within the C/C land use include: a full-range of retail sales, public buildings, eating and drinking establishments, personal services, and limited administrative and professional services. Residential uses are permitted only as an accessory to the commercial use.

Limited Industrial (I/L) (Maximum percent of building coverage: 60, maximum building height: 100 feet): The I/L designation is intended to offer areas encompassing a wide range of industrial activities whose impacts are typically limited. The I/L land use shall be developed so that industrial activities are conducted entirely within enclosed buildings and outdoor storage areas are screened. I/L land uses are typically located on a minor arterial or higher classification roadway and are located in areas served by a public wastewater treatment plant, water system, and drainage system. Typical uses permitted within the I/L land use include: light impact manufacturing, warehousing, wholesaling, corporate yards, distribution, and business offices. Residential uses are permitted only as caretaker residences.

General Industrial (I/G) (Maximum percent of building coverage: 60, maximum building height: 100 feet): The I/G designation is intended to offer areas encompassing a wide range of industrial activities whose location and operational characteristics typically involve moderate to high nuisances for surrounding uses if not mitigated. I/G land uses are typically located in areas served by a public wastewater treatment plant, water system, and drainage system. Typical uses permitted within the I/G land use include: a wide variety of manufacturing, distribution and storage activities, and wholesaling. Uses will vary in their degree of impact, scale of operation, and service requirements. I/G uses can have operational characteristics that produce noise, heat, glare, odor, and vibrations and require extensive storage areas.

San Joaquin County Municipal Code, Title 9 – Development Title

The purpose of Title 19, Development Title, of the County's Municipal Code is to replace the Planning Title and contain information on zones, development application requirements, and standards and regulations relating to such issues as infrastructure, natural resources, safety, and signs.

Zoning Map: The Zoning Map identifies zoning districts within the County at the parcel level. The Zoning Map designates the Project site as Limited Industrial (I-L) and Agriculture-Urban Reserve (AU-20). The San Joaquin County Zoning Map is shown in Section 2.0 Figure 2-7b. The County's Municipal Code provides the following descriptions for I-L and AU-20 designations:

I-L Limited Industrial Zoning District: This designation is intended to provide for light impact manufacturing, warehousing, wholesaling, construction contracting, and distribution uses. Activities within this zone have external physical effects that are generally restricted to the immediate area, are compatible with surrounding uses, are conducted entirely within enclosed buildings, and have outdoor storage areas that are screened. Business and professional offices may also be appropriate within this zone. New lots in the I-L zone are a minimum of 10,000 square feet.

AU-20 Agriculture-Urban Reserve Zoning District: This designation is intended to retain in agriculture those areas planned for future urban development in order to facilitate compact, orderly growth and to assure the proper timing and economical provision of services and utilities. The minimum parcel size within the AU zone is 20 acres.

San Joaquin Local Agency Formation Commission (LAFCo)

The San Joaquin LAFCo is responsible for coordinating orderly reorganization to local jurisdictional boundaries, including annexations. Annexation of the Project site to the City of Stockton is subject to LAFCo approval, and LAFCo will review the proposed annexation for consistency with LAFCo's Annexation Policies and Procedures. An annexation can only be approved if the applicable Municipal Services Review (MSR) and Plan for Services demonstrate that adequate services can be provided to the annexed area. An MSR, produced as part of a LAFCo's regular review of municipal services, consists of a written statement of its determinations regarding infrastructure, growth and population projections, financing, cost avoidance, rate restructuring, shared facilities, government structure options, management efficiency, and local accountability and governance. An annexation proposal must include a Plan for Services consistent with the applicable MSR and must demonstrate that the City is capable of providing the required services. The City must pre-zone the lands to be annexed and subsequent changes to the General Plan land use designation and zoning are prohibited for two years.

San Joaquin LAFCo has adopted Policies and Procedures for Annexation and Detachment to and from all agencies within their jurisdiction. LAFCo has also adopted Procedures for the California Environmental Quality Act in accordance with the California Code of Regulations (Chapter 3, Title 14 Section 15022), which requires that each public agency adopt objectives, criteria, and specific procedures for administering its responsibilities under CEQA. Below is a brief discussion of San Joaquin LAFCo Policies and Procedures.

LAFCO CHANGE OF ORGANIZATION POLICIES AND PROCEDURES (INCLUDING ANNEXATIONS AND REORGANIZATIONS) (AS AMENDED 12/14/12)

General Standards for Annexation and Detachment

These standards govern San Joaquin LAFCo determinations regarding annexations and detachments to and from all agencies. The annexations or detachments must be consistent with the general policies set forth in these Policies and Procedures.

1. Spheres and Municipal Service Reviews

The annexation or detachment must be consistent with the internal planning horizon of the sphere of influence. The land subject to annexation shall normally lie within the first planning increment (5 to 10 year) boundary. The annexation must also consider the applicable Municipal Service Review. An annexation shall be approved only if the Municipal Services Review and the Sphere of Influence Plan demonstrates that adequate services can be provided with the timeframe needed by the inhabitants of the annexed

area. If detachment occurs, the sphere will be modified. LAFCo generally will not allow spheres of influence to be amended concurrently with annexation proposals.

Proposed annexations of land that lie outside of the first planning horizon (5 to 10 year) are presumed to be inconsistent with the Sphere Plan. In such a case the agency must first request LAFCo to consider a sphere amendment pursuant to the above policies. If the amendment is approved, the agency may then proceed with the annexation proposal. A change of organization or reorganization will not be approved solely because an area falls within the SOI of any agency.

As an exception to the presumed inconsistency mentioned above, Master Plan and Specific Plan developments may span several planning horizons of the sphere of influence. Annexation of the entire project area may be desirable in order to comprehensively plan and finance infrastructure and provide for amenity-based improvements. In these cases, no amendment of the planning horizon is necessary provided project phasing is recognized in the Sphere of Influence Plan.

2. Plan for Services

Every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. The Plan for Services must be consistent with the Municipal Service Review of the Agency. Proponents must demonstrate that the city or special district is capable of meeting the need for services.

3. Contiguity

Territory proposed to be annexed to a city must be contiguous to the annexing city or district unless specifically allowed by statute. Territory is not contiguous if the only connection is a strip of land more than 300 feet long and less than 200 wide, that width to be exclusive of highways. The boundaries of a proposed annexation or reorganization must not create or result in areas that are difficult to serve.

4. Development within Jurisdiction

Development of existing vacant or non-prime agricultural lands for urban uses within the existing jurisdiction or within the sphere of influence should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency. (Section 56377)

5. Progressive Urban Pattern

Annexations to agencies providing urban services shall be progressive steps toward filling in the territory designated by the affected agency's adopted sphere of influence. Proposed growth shall be from inner toward outer areas.

6. Piecemeal Annexation Prohibited

LAFCo requires annexations and detachments to be consistent with the schedule for annexation that is contained in the agency's Sphere of Influence Plan. LAFCo will modify small piece-meal or irregular annexations, to include additional territory in order to promote orderly annexation and logical boundaries, while maintaining a viable proposal. In such cases, detailed development plans may not be required for those additional areas but compliance with CEQA is required.

7. Annexations to Eliminate Islands

Proposals to annex islands or to otherwise correct illogical distortion of boundaries will normally be approved unless they would violate another provision of these standards. In order to avoid the creation of an island or to encourage the elimination an existing island, detailed development plans may not be required for the remnant areas.

8. Annexations that Create Islands

An annexation will not be approved if it will result in the creation of an island of unincorporated territory or otherwise cause or further the distortion of existing boundaries. The Commission may nevertheless approve such an annexation where it finds that the application of this policy would be detrimental to the orderly development of the community and that a reasonable effort has been made to include the island in the annexation but that inclusion is not feasible at this time.

9. Substantially Surrounded

For the purpose of applying the provisions of the Cortese-Knox-Hertzberg Act regarding island annexation without protest hearings (Section 56375.5), the subject territory of an annexation proposal shall be deemed "substantially surrounded" if it is within the sphere of influence of the affected city and two-thirds of its boundary is surrounded by the affected city.

10. Definite and Certain Boundaries

All boundaries shall be definite and certain and conform to lines of assessment or ownership. The Commission's approval of boundary change proposals containing split parcels will typically be subject to a condition requiring the recordation of a parcel map, lot line adjustment or other instrument to avoid creating remnants of legal lots.

11. Service Requirements

An annexation shall not be approved merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare.

12. Adverse Impact of Annexation on the Other Agencies

LAFCo will consider any significant adverse effects upon other service recipients or other agencies serving the area and may condition any approval to mitigate such impacts.

Significant adverse effects shall include the effect of proposals that negatively impact special districts' budgets or services or require the continuation of services without the provision of adequate funding. LAFCo will not approve detachments from special districts or annexations that fail to provide adequate mitigation of the adverse impact on the district. LAFCo may determine an appropriate temporary mitigation, if any, and impose that temporary mitigation to the extent it is within its powers. If the needed mitigation is not within LAFCo's authority and approval would, in the opinion of the Commission, seriously impair the District's operation, the Commission may choose to deny the application.

13. District's Proposal to Provide new, different, or Divestiture of a Particular Function or Class of Services

In addition to the plan for services specified in Section 2 of these Policies and Procedures any application for a new, different, or divestiture of a service shall also include the requirements outlined in Section 56824.12 of the Government Code. Applications for such request will be considered a change of organization and shall follow the requirements of such an application as outlined in the Cortese-Knox-Hertzberg Act and within these policies and procedures. The factors enumerated in Sections 56668 and 56824.14 of the Government Code shall be considered by the Commission at the time of consideration of the application for such functions.

14. Disadvantaged Unincorporated Communities

Disadvantaged Unincorporated Communities (DUCs) are those territories shown in Exhibit A or as may be shown in a city municipal service review and sphere of influence plan.

The Commission shall not approve an annexation to a city or any territory greater than 10 acres where there exists a disadvantaged unincorporated community (DUC) that is contiguous to the area of proposed annexation, unless a concurrent application to annex all or a portion of the DUC to the subject city has been filed. An application to annex a DUC shall not be required if either of the following applies:

1. A prior application for annexation of the territory has been made in the preceding five years.
2. The Commission finds, based upon written evidence, that a majority of the registered voters within the DUC are opposed to annexation.

Written evidence can be a scientific survey conducted by an academic institution or professional polling company.

15. Protest Procedures

The Commission delegates the conducting authority functions and responsibilities to the LAFCo Executive Officer pursuant to Government Code Section 57000.

City Annexations

1. Annexation of Streets

Annexations shall reflect the logical allocation of streets and rights of way as follows:

- Territory should be included within the annexation to assure that the city reasonably assumes the burden of providing adequate roads to the property to be annexed. LAFCo will require cities to annex streets where adjacent lands that are in the city will generate additional traffic or where the annexation will isolate sections of county road. Cities shall include all contiguous public roads that can be included without fragmenting governmental responsibility by alternating city and county road jurisdiction over short section of the same roadway.
- When a street is a boundary line between two cities the centerline of the street may be used as the boundary or may follow a boundary reached by agreement of the affected cities.

2. Pre-zoning Required

The Cortese-Knox-Hertzberg Act requires the city to pre-zone territory to be annexed, and prohibits subsequent changes to the General Plan and /or pre-zoning designations for a period of two years after completion of the annexation, unless the city council makes a finding at a public hearing consistent with the provisions of Governments Code Section 56375(e). In instances where LAFCo amends a proposal to include additional territory, the Commission's approval of the annexation will be conditioned upon the pre-zoning of the new territory.

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

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) provides comprehensive measures for compensation and avoidance of impacts on various biological resources, including agricultural land. One of the primary goals of the SJMSCP is to preserve productive agriculture where that goal is compatible with protecting and preserving lands with biological resources and habitat. The SJMSCP is administered by the San Joaquin Council of Governments (SJCOG). The Project applicant will pay fees to SJCOG on a per-acre basis for designated agricultural lands and habitat that are converted to urban use. SJCOG will then use these funds to purchase conservation easements on agricultural and habitat lands in the region. The purchase of conservation easements allows the landowners to retain ownership of the land and continue agricultural operations, essentially preserving such lands in perpetuity. The Project site is designated as Category A/No Pay Zone and Category C/Pay Zone B. The Category A/No Pay Zone consists of parcels where conversions of open space already occurred or where new conversions of open spaces would not require compensation. The area of the Project site in Category A/No Pay Zone includes the 15.157-acre area of industrial uses, and a small portion in the

southwestern portion of the site where a previous single family home was located. The Category C/Pay Zone B consists of “Agricultural Habitat Lands”, as described in Chapter 2.2 of the SJMSCP.

The City of Stockton is a permit holder and is responsible for local implementation responsibilities including collection of fees, maintenance of implementing ordinances/resolutions and coordinating with the Joint Powers Authority (JPA) for annual reporting requirements.

3.10.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on land use and planning if it will:

- Physically divide an established community;
- 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;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- 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);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and/or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035 Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.10-1: The proposed Project would not physically divide an established community. (No Impact)

Proposed Project:

The Project site is located in the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the

3.10 LAND USE AND POPULATION

UPRR, and on the south by Bear Creek and the associated Bear Creek Levee. The proposed Project would result in an extension of developed uses within an area of the City that has been planned for development. The area to the east, west and south of the Project site is designated for industrial, residential, and other urban uses by the City's General Plan land use map. As such, the areas to the east, west and south of the Project site could be developed in the future. The Project would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the Project site would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. The Project would have **no impact** in regards to the physical division of an established community.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not physically divide an established community. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. As noted above, the Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The With Bridge Alternative would result in an extension of developed uses within an area of the City that currently has existing and future urban land uses located east and south of the Project site. The With Bridge Alternative would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the With Bridge Alternative would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. As such, similar to the proposed Project, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. As noted above, the Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The General Plan 2035 Alternative would result in an extension of developed uses within an area of the City that currently has existing and future urban land uses located east and south of the Project site. The General Plan 2035 Alternative would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the General Plan 2035 Alternative would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. As such, similar to the proposed Project, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

Under the Reduced Project Alternative, the total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. Nevertheless, similar to the proposed Project, the balance of the Project site would be developed with residential uses under the Reduced Project Alternative. As noted above, the Project site is surrounded by a variety of designated undeveloped and existing developed land

uses. The Reduced Project Alternative would result in an extension of developed uses within an area of the City that currently has existing and future urban land uses located east and south of the Project site. The Reduced Project Alternative would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the Reduced Project Alternative would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. As such, similar to the proposed Project, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the Reduced Intensity/Density Alternative. As noted above, the Project site is surrounded by a variety of designated undeveloped and existing developed land uses. The Reduced Intensity/Density Alternative would result in an extension of developed uses within an area of the City that currently has existing and future urban land uses located east and south of the Project site. The Reduced Intensity/Density Alternative would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the Reduced Intensity/Density Alternative would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. As such, similar to the proposed Project, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect. (Less than Significant)

Proposed Project:

Land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the Project include the San Joaquin County General Plan, San Joaquin County Municipal Code, Stockton General Plan, Stockton Municipal Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document. Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Stockton's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The Project would result in the annexation of the Project site into the City of Stockton. The Project includes property owner initiated annexation for all parcels except for Assessor's Parcel Numbers (APNs) 120-020-13 (Pacific Bell) and 120-020-14 (Bragg Investment Company). The annexation area would include the Project development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Upon annexation of the Project site, the San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the Project.

STOCKTON GENERAL PLAN

Since general plans often contain numerous policies emphasizing differing legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some individual policies. (*Sequoiah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.) The Project is consistent with the key land use issues and development concepts of the Stockton General Plan, which: provide the public opportunities for meaningful participation in the planning and decision-making process; provide a description of current conditions and trends impacting the City; identify planning issues, opportunities, and challenges that should be addressed in the General Plan; explore land use and policy alternatives; ensure that the General Plan is current, internally consistent, and easy to use; provide guidance in the planning and evaluation of future land and resource decisions; and provide a vision and framework for the future growth of the City of Stockton.

The Project is located outside of the City limits; however, the site is located adjacent to the City limits and is within the City's SOI and Urban Services Boundary. The Project proposes annexation into the City of Stockton. Development of the Project will provide for housing opportunities and

3.10 LAND USE AND POPULATION

employment-generating uses that will promote employment and economic development, and a mix of land uses, while providing an attractive, sustainable neighborhood. The Project is consistent with the General Plan land use policies that encourage an orderly pattern of development that is contiguous with the City boundary, require growth to contribute to a diversified economic base and balance between employment and housing opportunities, and allowing for recreation uses.

The land uses as proposed are not consistent with the General Plan. The Project would require a General Plan Amendment in order to rearrange the land uses from what is shown on the current General Plan land use map. When land uses are not consistent with a General Plan there are two courses of action: 1) the uses are not allowed due to the inconsistency, or 2) the land uses are changed through an amendment to the General Plan to create consistency. The proposed Project includes a proposed General Plan amendment to the Land Use Element to change designated land uses on the Project site to those that are consistent with the Project. Changes to the Land Use Element would include changing approximately 1.5 acres of LDR to C uses; changing approximately 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to Open Space/Agriculture (OSA) along Bear Creek. The land use designation for approximately 260.69 acres of LDR uses and 15.57 acres of I uses would be maintained. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road. Figure 2-6 in Section 2.0 illustrates the current Stockton General Plan land uses within the Project site, including the Marlette Road extension. Proposed General Plan land uses are shown on Figure 2-9. A comparison of the proposed Project buildout versus buildout of the existing General Plan land uses is shown in Table 3.10-3. As shown, the Project would reduce the amount of residential, commercial, and industrial development compared to what is allowed under the existing General Plan designations for the Project site.

TABLE 3.10-3: BUILDOUT COMPARISON

RESIDENTIAL DEVELOPMENT	NON-RESIDENTIAL DEVELOPMENT	DEVELOPMENT AREA ACREAGE
PROPOSED PROJECT		
LDR: 1,073 units (w/ school site), 1,163 units (w/o school site)	C: 101,500 sf	318.82
HDR: 340 units	I: N/A	
Total: 1,413 units (w/ school site), (1,503 w/o school site)	Total: 101,5800 sf commercial	
GENERAL PLAN 2035 BUILDOUT		
LDR: 2,467	C: 117,612 sf	318.82
HDR: 309	I: 406,937 sf	
Total: 2,776 units	Total: 524,549 sf	

The proposed General Plan Amendment would result in a project that is consistent with the General Plan and would not create any land use conflicts. For example, Stockton General Plan Policy LU-4.3 encourages the integration of commercial and new residential uses. The proposed Project includes a large residential component with a 10.5-acre commercial area in the northwest

portion of the Project site. Additionally, General Plan Policy LU-1.6 notes that the City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code. As discussed in the Impact 3.10-4 below, the proposed Project would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would result in a reduction of the total number of units anticipated for the Project site under the General Plan by approximately 475 to 1,273 (without school site) to 565 to 1,363 (with school site) units. Furthermore, General Plan Policy LU-1.7 notes that the City shall continue to apply the regulations and procedures of the Development Code and shall use the environmental review process to prevent or mitigate land use conflicts. Specific environmental topics (aesthetics, air quality, agriculture, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services/recreation, transportation, utilities, etc.) and the Project's potential impacts to such topics are discussed in the relevant chapters of this EIR.

Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Stockton General Plan land use requirements and would have a **less than significant** impact relative to the Stockton General Plan. It is noted that consistency with Stockton General Plan policies and programs related to environmental topics other than land use (aesthetics, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services, transportation, and utilities) are discussed in the relevant sections of this EIR.

STOCKTON MUNICIPAL CODE

The Stockton Municipal Code implements the General Plan. As noted above, the San Joaquin LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the proposed annexation. The City's pre-zoning will include the following zoning designations: RL, RH, IL, CG, and OS. The pre-zoning would go into effect upon annexation into the City of Stockton. The proposed pre-zoning for the Project site is shown on Figure 2-10 in Section 2.0. These proposed zone changes would ensure that zoning would be consistent with the proposed General Plan designations within the Project site. The City's Development Code establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Municipal Code. All existing City development standards and zoning requirements for the proposed zoning are applicable to any activities on the Project site. The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Municipal Code. Approval of the zone change would ensure that the proposed Project would be consistent with the Development Code and will have a **less than significant** impact relative to this topic.

SAN JOAQUIN LAFCO

The Project site is currently in an unincorporated portion of San Joaquin County adjacent to the City of Stockton's city limits, within the Stockton Sphere of Influence (SOI) (as defined in the

Stockton General Plan), and within the City of Stockton Urban Services Boundary. The proposed Project requires annexation of the Project site into the city limits.

LAFCo (Commission) is serving as a responsible agency for this EIR pursuant to their *LAFCo Procedures for the California Environmental Quality Act (Adopted June 20, 2007)*. When LAFCo is a Responsible Agency under CEQA, in order to approve the annexation, the Commission will certify that it has reviewed the Lead Agency's environmental documents and, if required, adopt findings for approval and statements of overriding considerations in accordance with Sections 15091 and 15903 of the CEQA Guidelines. The City of Stockton has consulted LAFCo. The consultation process included sending LAFCo a copy of the Notice of Preparation during the 30-day public review period. LAFCo will also be sent a copy of the Draft EIR during the 45-day public review period and the Final EIR for their use in the annexation process. If the LAFCo Executive Officer determines that the Draft and Final EIR are adequate for their use, he/she will prepare, or cause to be prepared, "draft" Findings and Statements, findings for approval, and statements of overriding considerations for LAFCo Commission consideration. If the LAFCo Commission approves the annexation, the Executive Officer will file a Notice of Determination within five working days after deciding to approve the annexation.

The San Joaquin LAFCo will review the proposed annexation for consistency with the *LAFCo Change of Organization Policies and Procedures (Including Annexations and Reorganizations)*. These policies and procedures govern San Joaquin LAFCo determinations regarding annexations to all agencies. The following policies will be reviewed as part of the annexation process by the San Joaquin LAFCo.

GENERAL STANDARDS FOR ANNEXATION AND DETACHMENT

1. The *City of Stockton 2008 Municipal Service Review* identifies the Project site as within the SOI and within the 10-year frame for potential development by 2017; therefore, a sphere amendment prior to proceeding with the annexation would not be required.
2. Plan for Services: The Draft EIR assesses service capacity and demands for these services in Sections 3.12, Public Services and Recreation, and 3.14, Utilities. There are not any service deficiencies noted by the City of Stockton, or contained within this EIR that are anticipated to occur after installation of infrastructure and payment of fees. An administrative Draft Report – Plan For Services was completed by Berkson Associates in May 2017. See Section 3.12, Public Services and Recreation, for more information. The proposed annexation area is within the Stockton Water Service Area boundary and the Wastewater Service Area boundary as defined by LAFCo and the City.
3. Contiguity: The proposed annexation area is contiguous to the Stockton city limits along the eastern boundary of the Project area.
4. Development within Jurisdiction: The proposed annexation area is within the SOI and lands within the Project area are designated for development under the General Plan. However,

the Project site is currently in agricultural operation and agricultural resources are located adjacent to the proposed annexation area. There are no Williamson Act contracts on or adjacent to the Project site. However, the Department of Conservation Farmland Mapping and Monitoring Program (FMMP) delineates important farmland on and adjacent to the Project site. Additionally, the Project site meets the Cortese-Knox-Hertzberg definition of prime agricultural land. The proposed annexation area is not designated by the City of Stockton for agricultural uses. However, the San Joaquin County General Plan designated the site for agricultural uses. The proposed Project would result in the development of existing open space lands for non-open space uses. The San Joaquin LAFCo does not impose agricultural mitigation requirements for the conversion of agricultural land to urban uses related to annexations or other applications.

Impacts related to the development of existing open space lands were analyzed in the Stockton General Plan EIR. The General Plan EIR determined that impacts would be significant and unavoidable. According to the General Plan EIR, although City and County policies would support continued agricultural uses and would require urban development to fund agricultural conservation easements and other programs, no additional feasible mitigation is available.

5. **Progressive Urban Pattern:** The proposed annexation area is within the SOI and is designated for urban development under the General Plan. The proposed Project would develop the proposed annexation area (adjacent to the Stockton city limits) and would continue the pattern of urbanization, including commercial and residential uses, that occurs within the City limits to the east and southeast of the proposed annexation area.
6. **Piecemeal Annexation Prohibited:** Annexation of the Project area is contiguous with the city limits.
7. **Annexations to Eliminate Islands:** The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation do not involve the elimination of islands. The Project would, however, create an island of unincorporated territory to the south of the site. This is discussed below.
8. **Annexations that Create Islands:** The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation would involve the creation of an island of unincorporated territory to the south of the site. The pre-planning process for the proposed Project included meetings with Jim Glaser, Executive Officer of the San Joaquin LAFCo, in order to discuss the proposed annexation. Per LAFCo's recommendation, the Project applicant consulted with the owner of the property to the south, which would become an island of unincorporated territory upon annexation of the proposed Project site, to discuss potential annexation of the southern site to the City as part of the proposed Project. The owner of the parcel to the south of the Project site declined to join in the proposed annexation proposed by the Project. The

3.10 LAND USE AND POPULATION

property owner had previously submitted an application for development entitlements, but rescinded those applications. It is anticipated that that property owner will ultimately request development entitlements including annexation; however, the time of such request is unknown at this time. A reasonable effort has been made to include the island in the annexation. It is noted that the Project is consistent with the type of urban development planned by the City in the General Plan and by the SJCOG Regional Transportation Plan/Sustainable Communities Strategy.

9. Substantially Surrounded: As previously stated, the proposed annexation does not involve island annexation. Therefore, this policy is not relevant to the proposed annexation.
10. Definite and Certain Boundaries: The proposed annexation boundaries are definite and certain and conform to lines of ownership.
11. Service Requirements: The proposed annexation is not merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare. As stated further in the Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities), the City has adequate service capacity to serve the proposed Project without reducing the adequacy of services elsewhere. An administrative Draft Report – Plan For Services was completed by Berkson Associates in May 2017. See Section 3.12, Public Services and Recreation, for more information. Therefore, the proposed annexation is consistent with this policy.
12. Adverse Impact of Annexation on the Other Agencies: This EIR includes an assessment of the impacts of the proposed Project and proposed annexation on service agencies. This Draft EIR concludes that the proposed Project would have significant and unavoidable impacts related to agricultural resources. The proposed commercial and residential development and the proposed annexation would not result in any significant, adverse impacts to any of the service agencies such that it would seriously impair operation.
13. District's Proposal to Provide new, different, or Divestiture of a Particular Function or Class of Services: This policy relates to proposals for new, different, or divestiture of services, which is not relevant to the proposed annexation.
14. Disadvantaged Unincorporated Communities: The San Joaquin LAFCo does not currently maintain a list of DUCs in the Project area. However, the LAFCo does map unincorporated census tracts with median household incomes below 80%. According to a 2012 Executive Officer's Report completed by the Executive Officer of the San Joaquin LAFCo, the Project area is not within or contiguous to an unincorporated census tract with median household incomes below 80%. The nearest unincorporated census tract with median household incomes below 80% is located approximately 1.35 miles west of the Project site. Therefore, this policy is not relevant to the proposed annexation.

CITY ANNEXATIONS

1. Annexation of Streets: The proposed annexations reflects the logical allocation of streets and rights of way to assure that the city reasonably assumes the burden of providing adequate roads to the property to be annexed.
2. Pre-zoning Required: The proposed Project includes the adoption of pre-zoning for the proposed annexation area, which will serve to regulate the uses of land and structures within the Project area. The City's pre-zoning will include the following zoning designations: RL, RH, IL, CG, and OS. The Project will be subject to the development standards as described in the Municipal Code. The Municipal Code is proposed to ensure consistency between land use and zoning designations. The proposed annexation is consistent with this policy.

The policies discussed above are intended to ensure orderly reorganization to local jurisdictional boundaries, including annexations. Ultimately, LAFCo will determine whether the proposed annexation would first require an update to the *City of Stockton 2008 Municipal Service Review* in order to approve the annexation. This LAFCo policy was not specifically adopted to avoid or mitigate an environmental effect, rather it is intended to ensure orderly and logical reorganization to local jurisdiction boundaries, including annexations. The proposed Project is generally consistent with LAFCo policies adopted to address environmental impacts. Section 3.2, Agricultural Resources, addresses impacts related to conversion of agricultural land and includes all feasible mitigation measures in order to reduce impacts to prime farmland. Nevertheless, annexation and subsequent urban development of the Project site will have a significant and unavoidable impact on prime farmland. This topic was analyzed as part of the City's General Plan Draft EIR, and ultimately the City approved land use designations that would allow for the conversion of the prime farmland to an urban use. As such, implementation of the proposed Project will have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

As discussed above, land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the With Bridge Alternative include the San Joaquin County General Plan, San Joaquin County Municipal Code, Stockton General Plan, Stockton Municipal

3.10 LAND USE AND POPULATION

Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Stockton's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The With Bridge Alternative would result in the annexation of the Project site into the City of Stockton. The With Bridge Alternative includes property owner initiated annexation for all parcels except for Assessor's Parcel Numbers (APNs) 120-020-13 (Pacific Bell) and 120-020-14 (Bragg Investment Company). The annexation area would include the development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Similar to the proposed Project, upon annexation of the Project site, the San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the With Bridge Alternative.

STOCKTON GENERAL PLAN

Under the With Bridge Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. The land uses as included for the With Bridge Alternative are not consistent with the General Plan. Therefore, the With Bridge Alternative would require a General Plan Amendment to change land uses on the northwest, north-central, and southern portions of the Project site. Changes to the Land Use Element would be identical to the proposed Project. Because this alternative includes construction of the Bear Creek bridge crossing, an amendment to the Circulation Element would not be required.

STOCKTON MUNICIPAL CODE

The Stockton Municipal Code implements the General Plan. As noted above, the San Joaquin LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the With Bridge Alternative would be identical to the proposed Project. The pre-zoning would go into effect upon annexation into the City of Stockton. The zone changes would ensure that zoning would be consistent with the General Plan designations within the Project site. The Development Code establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Municipal Code. All existing City development standards and zoning requirements for the zoning are applicable to any activities on the Project site. The City would review each component of the With Bridge Alternative as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Municipal Code. Under this alternative, similar to the proposed Project, the With Bridge Alternative would have a **less than significant** impact relative to the Stockton Municipal Code. Compared to the proposed Project, this alternative is equal relative to this topic.

SAN JOAQUIN LAFCO

Similar to the proposed Project, the With Bridge Alternative is currently in an unincorporated portion of San Joaquin County adjacent to the City of Stockton's city limits, within the Stockton SOI (as defined in the Stockton General Plan), and within the City of Stockton Urban Services Boundary. The With Bridge Alternative would require annexation of the Project site into the city limits.

Because the With Bridge Alternative would include development of the same site as the proposed Project, many of the San Joaquin LAFCo policies would also be satisfied under this alternative. For example, the With Bridge Alternative would comply with all of the above LAFCo policies related to spheres and municipal service reviews, contiguity, development within jurisdiction, progressive urban pattern, piece-mealing, surrounding uses, boundaries, and disadvantaged communities. The With Bridge Alternative also includes pre-zoning of the Project site.

Consistency with the San Joaquin LAFCo policies related to plans for services and service requirements are discussed in Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities). As stated further in the Section 3.12 and Section 3.14, the City has adequate service capacity to serve the With Bridge Alternative without reducing the adequacy of services elsewhere. Therefore, although the alternative would increase the number of units and, thus, demand for public services and utilities, annexation of the Project site under the With Bridge Alternative would be consistent with the San Joaquin LAFCo policies related to plans for services and service requirements. Similar to the proposed Project, the With Bridge Alternative would be consistent with the applicable San Joaquin LAFCo policies and would have a **less than significant** impact relative to LAFCo. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As discussed above, land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the General Plan 2035 Alternative include the San Joaquin County General Plan, San Joaquin County Municipal Code, Stockton General Plan, Stockton Municipal Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document. Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Stockton's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The General Plan 2035 Alternative would result in the annexation of the Project site into the City of Stockton. The General Plan 2035 Alternative includes property owner initiated annexation for all parcels except for Assessor's Parcel Numbers (APNs) 120-020-13 (Pacific Bell) and 120-020-14 (Bragg Investment Company). The annexation area would include the development site, as well as

3.10 LAND USE AND POPULATION

portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Similar to the proposed Project, upon annexation of the Project site, the San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the General Plan 2035 Alternative.

STOCKTON GENERAL PLAN

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. The land uses as included for the General Plan 2035 Alternative are consistent with the General Plan. Therefore, a General Plan Amendment would not be required, and the alternative would be consistent with the Stockton General Plan land use requirements. Under this alternative, the General Plan 2035 Alternative would have a **less than significant** impact relative to the Stockton General Plan. Compared to the proposed Project, this alternative is equal relative to this topic.

STOCKTON MUNICIPAL CODE

The Stockton Municipal Code implements the General Plan. As noted above, the San Joaquin LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the General Plan 2035 Alternative would include the following zoning designations: R/L, R/H, I/L, C/G, and OS. The pre-zoning would go into effect upon annexation into the City of Stockton. The zone changes would ensure that zoning would be consistent with the General Plan designations within the Project site. The Development Code establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Municipal Code. All existing City development standards and zoning requirements for the zoning are applicable to any activities on the Project site. The City would review each component of the General Plan 2035 Alternative as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Municipal Code. Under this alternative, similar to the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to the Stockton Municipal Code. Compared to the proposed Project, this alternative is equal relative to this topic.

SAN JOAQUIN LAFCO

Similar to the proposed Project, the General Plan 2035 Alternative is currently in an unincorporated portion of San Joaquin County adjacent to the City of Stockton's city limits, within the Stockton SOI (as defined in the Stockton General Plan), and within the City of Stockton Urban Services Boundary. The General Plan 2035 Alternative would require annexation of the Project site into the city limits.

Because the General Plan 2035 Alternative would include development of the same site as the proposed Project, many of the San Joaquin LAFCo policies would also be satisfied under this alternative. For example, the General Plan 2035 Alternative would comply with all of the above LAFCo policies related to spheres and municipal service reviews, contiguity, development within jurisdiction, progressive urban pattern, piece-mealing, surrounding uses, boundaries, and

disadvantaged communities. The General Plan 2035 Alternative also includes pre-zoning of the Project site.

Consistency with the San Joaquin LAFCo policies related to plans for services and service requirements are discussed in Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities). As stated further in the Section 3.12 and Section 3.14, the City has adequate service capacity to serve the General Plan 2035 Alternative without reducing the adequacy of services elsewhere. Therefore, although the alternative would increase the number of units and, thus, demand for public services and utilities, annexation of the Project site under the General Plan 2035 Alternative would be consistent with the San Joaquin LAFCo policies related to plans for services and service requirements. Similar to the proposed Project, the General Plan 2035 Alternative would be consistent with the applicable San Joaquin LAFCo policies and would have a **less than significant** impact relative to LAFCo. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

As discussed above, land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the Reduced Project Alternative include the San Joaquin County General Plan, San Joaquin County Municipal Code, Stockton General Plan, Stockton Municipal Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document. Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Stockton's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The Reduced Project Alternative would result in the annexation of approximately 200.15 acres of the Project site into the City of Stockton. The Reduced Project Alternative includes property owner initiated annexation for all parcels except for Assessor's Parcel Numbers (APNs) 120-020-13 (Pacific Bell) and 120-020-14 (Bragg Investment Company). The annexation area would include the 200.15-acre development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Similar to the proposed Project, upon annexation of the Project site, the San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the Reduced Project Alternative.

STOCKTON GENERAL PLAN

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The land uses as included for the Reduced Project Alternative are not consistent with the General Plan. Therefore, the Reduced Project Alternative would require a General Plan Amendment to change land uses on the northwest, north-central, and southern portions of the Project site.

3.10 LAND USE AND POPULATION

Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The General Plan Amendment is consistent with the General Plan and would not create any land use conflicts. For example, General Plan Policy LU-1.6 notes that the City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code. As discussed in the Impact 3.10-4 below, the Reduced Project Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would result in a reduction of the total number of units anticipated for the Project site under the General Plan by approximately 947 to 1,037 units. Additionally, General Plan Policy LU-1.7 notes that the City shall continue to apply the regulations and procedures of the Development Code and shall use the environmental process to prevent or mitigate land use conflicts. Specific environmental topics (aesthetics, air quality, agriculture, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services/recreation, transportation, utilities, etc.) and the Reduced Project Alternative's potential impacts to such topics are discussed in the relevant chapters of this EIR.

Similar to the proposed Project, approval of the General Plan amendment would ensure that the Reduced Project Alternative would be substantially consistent with the Stockton General Plan land use requirements and would have a **less than significant** impact relative to the Stockton General Plan. Compared to the proposed Project, this alternative is equal relative to this topic.

STOCKTON MUNICIPAL CODE

The Stockton Municipal Code implements the General Plan. As noted above, the San Joaquin LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the Reduced Project Alternative would include the following zoning designations: RL, RH, and OS. The pre-zoning would go into effect upon annexation into the City of Stockton. The zone changes would ensure that zoning would be consistent with the General Plan designations within the Project site. The Development Code establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Municipal Code. All existing City development standards and zoning requirements for the zoning are applicable to any activities on the Project site. The City would review each component of the Reduced Project Alternative as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Municipal Code. Under this alternative, similar to the proposed Project, the Reduced Project Alternative would have a **less than significant** impact relative to the Stockton Municipal Code. Compared to the proposed Project, this alternative is equal relative to this topic.

SAN JOAQUIN LAFCO

Similar to the proposed Project, the Reduced Project Alternative is currently in an unincorporated portion of San Joaquin County adjacent to the City of Stockton's city limits, within the Stockton SOI (as defined in the Stockton General Plan), and within the City of Stockton Urban Services

Boundary. The Reduced Project Alternative would require annexation of the Project site into the city limits.

Because the Reduced Project Alternative would include development of the same site as the proposed Project, many of the San Joaquin LAFCo policies would also be satisfied under this alternative. For example, the Reduced Project Alternative would comply with all of the above LAFCo policies related to spheres and municipal service reviews, contiguity, development within jurisdiction, progressive urban pattern, piece-mealing, surrounding uses, boundaries, and disadvantaged communities. The Reduced Project Alternative also includes pre-zoning of the Project site.

Consistency with the San Joaquin LAFCo policies related to plans for services and service requirements are discussed in Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities). As stated further in the Section 3.12 and Section 3.14, the City has adequate service capacity to serve the Reduced Project Alternative without reducing the adequacy of services elsewhere. Therefore, although the alternative would decrease the number of units and, thus, demand for public services and utilities, annexation of the Project site under the Reduced Project Alternative would be consistent with the San Joaquin LAFCo policies related to plans for services and service requirements. Similar to the proposed Project, the Reduced Project Alternative would be consistent with the applicable San Joaquin LAFCo policies and would have a **less than significant** impact relative to LAFCo. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

As discussed above, land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the Reduced Intensity/Density Alternative include the San Joaquin County General Plan, San Joaquin County Municipal Code, Stockton General Plan, Stockton Municipal Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document. Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Stockton's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The Reduced Intensity/Density Alternative would result in the annexation of the Project site into the City of Stockton. The Reduced Intensity/Density Alternative includes property owner initiated annexation for all parcels except for Assessor's Parcel Numbers (APNs) 120-020-13 (Pacific Bell) and 120-020-14 (Bragg Investment Company). The annexation area would include the development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek. Similar to the proposed Project, upon annexation of the Project site, the

3.10 LAND USE AND POPULATION

San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the Reduced Intensity/Density Alternative.

STOCKTON GENERAL PLAN

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The land uses as included for the Reduced Intensity/Density Alternative are not consistent with the General Plan. Therefore, the Reduced Intensity/Density Alternative would require a General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The General Plan Amendment is consistent with the General Plan and would not create any land use conflicts. For example, General Plan Policy LU-1.6 notes that the City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code. As discussed in the Impact 3.10-4 below, the Reduced Intensity/Density Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would result in a reduction of the total number of units anticipated for the Project site under the General Plan by approximately 776 to 848 units. Additionally, General Plan Policy LU-1.7 notes that the City shall continue to apply the regulations and procedures of the Development Code and shall use the environmental process to prevent or mitigate land use conflicts. Specific environmental topics (aesthetics, air quality, agriculture, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, noise, public services/recreation, transportation, utilities, etc.) and the Reduced Intensity/Density Alternative's potential impacts to such topics are discussed in the relevant chapters of this EIR.

Similar to the proposed Project, approval of the General Plan amendment would ensure that the Reduced Intensity/Density Alternative would be substantially consistent with the Stockton General Plan land use requirements and would have a **less than significant** impact relative to the Stockton General Plan. Compared to the proposed Project, this alternative is equal relative to this topic.

STOCKTON MUNICIPAL CODE

The Stockton Municipal Code implements the General Plan. As noted above, the San Joaquin LAFCo will require the Project site to be pre-zoned by the City of Stockton in conjunction with the annexation. The pre-zoning under the Reduced Intensity/Density Alternative would include the following zoning designations: RL, RH, IL, and OS. The pre-zoning would go into effect upon annexation into the City of Stockton. The zone changes would ensure that zoning would be consistent with the General Plan designations within the Project site. The Development Code establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Municipal Code. All existing City development standards and zoning

requirements for the zoning are applicable to any activities on the Project site. The City would review each component of the Reduced Intensity/Density Alternative as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Municipal Code. Under this alternative, similar to the proposed Project, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to the Stockton Municipal Code. Compared to the proposed Project, this alternative is equal relative to this topic.

SAN JOAQUIN LAFCO

Similar to the proposed Project, the Reduced Intensity/Density Alternative is currently in an unincorporated portion of San Joaquin County adjacent to the City of Stockton's city limits, within the Stockton SOI (as defined in the Stockton General Plan), and within the City of Stockton Urban Services Boundary. The Reduced Intensity/Density Alternative would require annexation of the Project site into the city limits.

Because the Reduced Intensity/Density Alternative would include development of the same site as the proposed Project, many of the San Joaquin LAFCo policies would also be satisfied under this alternative. For example, the Intensity/Density would comply with all of the above LAFCo policies related to spheres and municipal service reviews, contiguity, development within jurisdiction, progressive urban pattern, piece-mealing, annexation islands, surrounding uses, boundaries, and disadvantaged communities. The Reduced Intensity/Density Alternative also includes pre-zoning of the Project site.

Consistency with the San Joaquin LAFCo policies related to plans for services and service requirements are discussed in Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities). As stated further in the Section 3.12 and Section 3.14, the City has adequate service capacity to serve the Reduced Intensity/Density Alternative without reducing the adequacy of services elsewhere. Therefore, although the alternative would decrease the number of units and, thus, demand for public services and utilities, annexation of the Project site under the Reduced Intensity/Density Alternative would be consistent with the San Joaquin LAFCo policies related to plans for services and service requirements. Similar to the proposed Project, the Reduced Intensity/Density Alternative would be consistent with the applicable San Joaquin LAFCo policies and would have a **less than significant** impact relative to LAFCo. Compared to the proposed Project, this alternative is equal relative to this topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan. (Less than Significant)

Proposed Project:

The City's participation in the SJMSCP allows projects within Stockton's jurisdiction to seek coverage under the SJMSCP for impacts to endangered, threatened, and species of special concern. The SJMSCP provides a process to offset impacts to biological resources, conserve open space, maintain the agricultural economy, and allow development within the County. It was also created to obtain the necessary 32 permits from the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife for the next 50 years in exchange for participating projects paying mitigation fees. Fees are based on the amount and quality of land converted from agricultural or open space uses to urban uses. These fees are used to preserve and create habitats to be managed in perpetuity through the establishment of habitat preserves. Ninety-seven species are covered under the SJMSCP, with the intent to provide comprehensive mitigation pursuant to local, state, and federal regulations for impacts on these species from permitted activities under the Plan. Participation in the SJMSCP confers authorization for activities that result (or may result in) incidental take of covered state-listed species, federally listed species, and other covered.

As described above, the Project site is designated as Category A/No Pay Zone and Category C/Pay Zone B. As described in Section 3.4, Biological Resources, prior to issuance of grading permits, the Project proponent will be required to coordinate with SJCOG and will be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The proposed Project does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Implementation of the Project would have a **less than significant** impact relative to compliance with the SJMSCP.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not conflict with an applicable habitat conservation plan or natural community conservation plan, such as the SJMSCP. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. The With Bridge Alternative would result in development of the Project site which, as described above, is designated as Category A/No Pay Zone and Category C/Pay Zone B by the SJMSCP.

Similar to the proposed Project, development of the With Bridge Alternative would require coordination with SJCOG and the Project proponent would be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and Project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The With Bridge Alternative does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Under this alternative, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. The General Plan 2035 Alternative would result in development of the Project site which, as described above, is designated as Category A/No Pay Zone and Category C/Pay Zone B by the SJMSCP.

Similar to the proposed Project, development of the General Plan 2035 Alternative would require coordination with SJCOG and the Project proponent would be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and Project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The General Plan 2035 Alternative does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Under this alternative, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses. Nevertheless, the Reduced Project Alternative would result in development of the Project site which, as described above, is designated as Category A/No Pay Zone and Category C/Pay Zone B by the SJMSCP.

Similar to the proposed Project, development of the Reduced Project Alternative would require coordination with SJCOG and the Project proponent would be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and Project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The Reduced Project Alternative does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Under this alternative, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Intensity/Density Alternative would result in development of the Project site which, as described above, is designated as Category A/No Pay Zone and Category C/Pay Zone B by the SJMSCP.

Similar to the proposed Project, development of the Reduced Intensity/Density Alternative would require coordination with SJCOG and the Project proponent would be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and Project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The Reduced Intensity/Density Alternative does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Under this alternative, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.10-4: The proposed Project would not induce substantial population growth in an area. (Less than Significant)

Proposed Project:

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342). Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply or wastewater treatment/collection in an area where this service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

Components of Growth: The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Direct Population Growth: The Project proposes housing that would result in direct population growth. The Project includes the addition of up to 1,163 LDR units and up to 340 HDR units. The addition of up to 1,503 housing units could increase the population of the City by an estimated 4,765 persons.

The proposed Project would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include changing approximately 1.5 acres of LDR to C uses; changing approximately 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to Open Space/Agriculture (OSA) along Bear Creek. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road. Proposed General Plan land uses are shown on Figure 2-9.

The Stockton General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses and designates the Project site for urban uses, including residential, commercial, and industrial. The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites based on current land uses. The proposed Project would not result in direct population growth

beyond the City's capacity identified in the General Plan; rather, it would result in a reduction of the total number of units anticipated under the General Plan by approximately 475 to 1,363 units. The net population reduction associated with the reduction of units is anticipated to be 1,506 to 4,321 persons.

Indirect Population Growth: As described above, projects that include employment-generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the Project would provide job growth to the area at the K-8 school and the commercial area in the northwest corner of the site. It is anticipated that local employment would be increased to provide administrative, management, visitor-serving areas, and retail services. The proposed Project is expected to require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The Project would establish a variety of business opportunities that can support the skilled and educated workforce of Stockton and the local area. The Stockton General Plan anticipated the Project site for LDR, HDR, I, and C uses. The proposed Project would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include maintaining approximately 260.69 acres of LDR uses; maintaining approximately 15.57 acres of I uses; changing approximately 1.5 acres of LDR to C uses; changing approximately 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to OSA along Bear Creek.

The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites. The proposed Project would not result in indirect population growth beyond the City's planned capacity. Therefore, the proposed Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Stockton General Plan.

Conclusion: While the proposed Project will result in growth, it is not anticipated to significantly induce growth. Implementation of the proposed Project will have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not result in substantial population growth in the area. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion.

Direct Population Growth: The With Bridge Alternative includes the addition of up to 1,496 units without the school site, or 1,406 units with the school site. The With Bridge Alternative would require a General Plan Amendment to change land uses on the northwest, north-central, and southern portions of the Project site. Changes to the Land Use Element would be identical to the proposed Project. Because this alternative includes construction of the Bear Creek bridge Crossing, an amendment to the Circulation Element would not be required.

The Stockton General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites based on current land uses. The With Bridge Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would result in a reduction of the total number of units anticipated under the General Plan by approximately 482 to 1,370 units. The net population reduction associated with the reduction of units is anticipated to be 1,528 to 4,343 persons.

Indirect Population Growth: As described above, projects that include employment-generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the With Bridge Alternative would provide job growth to the area at the K-8 school site. It is anticipated that local employment would be increased to provide administrative, management, and educational services. The With Bridge Alternative would require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The With Bridge Alternative would establish business opportunities that can support the skilled and educated workforce of Stockton and the local area. The Stockton General Plan anticipated the Project site for LDR, HDR, I, and C uses. The With Bridge Alternative would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site. Changes to the Land Use Element would be identical to the proposed Project. Because this alternative includes construction of the Bear Creek bridge crossing, an amendment to the Circulation Element would not be required.

The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites. Similar to the proposed Project, the With Bridge Alternative would not result in indirect population growth beyond the City's planned capacity. Therefore, the With Bridge Alternative is not anticipated to exceed the planned growth (directly or

indirectly) in the area beyond what is anticipated in the City of Stockton General Plan. While the With Bridge Alternative would result in growth, it is not anticipated to significantly induce growth.

Conclusion: Development of the With Bridge Alternative would result in direct and indirect population growth. However, the uses resulting from the With Bridge Alternative would not result in population growth beyond what was anticipated by the City's General Plan. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project.

Direct Population Growth: The General Plan 2035 Alternative would result in direct population growth. The General Plan 2035 Alternative includes the addition of 1,730 (6.1 units per gross acre) to 2,467 (8.7 units per gross acre) LDR units and up to 248 (23.2 units per gross acre) to 309 (29.0 units per gross acre) HDR units, for a total of 1,978 to 2,776 units. The addition of up to 2,467 LDR units and up to 309 HDR units could increase the population of the City by an estimated 8,800 persons, as compared to 4,765 persons under the proposed Project.

The General Plan 2035 Alternative would not require a General Plan Amendment to change land uses on the Project site. The Stockton General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. As noted above, the Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites based on current land uses. The General Plan 2035 Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan.

Indirect Population Growth: As described above, projects that include employment-generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the General Plan 2035 Alternative would provide job growth to the area at the K-8 school and the commercial area in the northwest corner of the site. It is anticipated that local employment would be increased to provide administrative, management, visitor-serving areas, and retail services. Similar to the proposed Project, the General Plan 2035 Alternative would require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The General Plan 2035 Alternative would establish a variety of business opportunities that can support the skilled and educated workforce of Stockton and the local area. The Stockton General Plan anticipated the Project site for LDR, HDR, I, and C uses. The General Plan 2035 Alternative would not require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site.

The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites. The General Plan 2035 Alternative would not result in indirect population growth beyond the City's planned capacity. Therefore, the General Plan 2035 Alternative is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Stockton General Plan. While the General Plan 2035 Alternative would result in growth, it is not anticipated to significantly induce growth.

Conclusion: Development of the General Plan 2035 Alternative would result in direct and indirect population growth. However, the uses resulting from the General Plan 2035 Alternative would not result in population growth beyond what was anticipated by the City's General Plan. Under this alternative, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

Direct Population Growth: The Reduced Project Alternative includes the addition of up to 1,031 units without the school site, or 941 units with the school site. The Reduced Project Alternative would require a General Plan Amendment to change land uses on the northwest, north-central, and southern portions of the Project site. Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The Stockton General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites based on current land uses. The Reduced Project Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would result in a reduction of the total number of units anticipated under the General Plan by approximately 947 to 1,745 units. The net population reduction associated with the reduction of units is anticipated to be 3,002 to 5,532 persons.

Indirect Population Growth: As described above, projects that include employment-generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the Reduced Project Alternative would provide job growth to the area at the K-8 school site. It is

anticipated that local employment would be increased to provide administrative, management, and educational services. The Reduced Project Alternative would require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The Reduced Project Alternative would establish business opportunities that can support the skilled and educated workforce of Stockton and the local area. The Stockton General Plan anticipated the Project site for LDR, HDR, I, and C uses. The Reduced Project Alternative would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites. Similar to the proposed Project, the Reduced Project Alternative would not result in indirect population growth beyond the City's planned capacity. Therefore, the Reduced Project Alternative is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Stockton General Plan. While the Reduced Project Alternative would result in growth, it is not anticipated to significantly induce growth.

Conclusion: Development of the Reduced Project Alternative would result in direct and indirect population growth. However, the uses resulting from the Reduced Project Alternative would not result in population growth beyond what was anticipated by the City's General Plan. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

Direct Population Growth: The Reduced Intensity/Density Alternative includes the addition of up to 1,202 units without the school site, or 1,130 units with the school site. The Reduced Intensity/Density Alternative would require a General Plan Amendment to change land uses on the northwest, north-central, and southern portions of the Project site. Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The Stockton General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites based on current land uses. The Reduced Intensity/Density Alternative would not result in indirect population growth beyond the City's capacity that is planned in the General Plan; rather, it would

result in a reduction of the total number of units anticipated under the General Plan by approximately 776 to 1,646 units. The net population reduction associated with the reduction of units is anticipated to be 2,460 to 5,218 persons.

Indirect Population Growth: As described above, projects that include employment-generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the Reduced Intensity/Density Alternative would provide job growth to the area at the K-8 school site. It is anticipated that local employment would be increased to provide administrative, management, and educational services. The Reduced Intensity/Density Alternative would require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The Reduced Intensity/Density Alternative would establish business opportunities that can support the skilled and educated workforce of Stockton and the local area. The Stockton General Plan anticipated the Project site for LDR, HDR, I, and C uses. The Reduced Intensity/Density Alternative would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include changing the northwest portion of the Project site from C to LDR and HDR, and changing 24.2 acres of LDR to OSA along Bear Creek.

The Housing Element of the Stockton General Plan identifies that the City has capacity for 7,966 residential units on vacant and underutilized sites. Similar to the proposed Project, the Reduced Intensity/Density Alternative would not result in indirect population growth beyond the City's planned capacity. Therefore, the Reduced Intensity/Density Alternative is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Stockton General Plan. While the Reduced Intensity/Density Alternative would result in growth, it is not anticipated to significantly induce growth.

Conclusion: Development of the Reduced Intensity/Density Alternative would result in direct and indirect population growth. However, the uses resulting from the Reduced Intensity/Density Alternative would not result in population growth beyond what was anticipated by the City's General Plan. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is slightly superior relative to this topic.

Impact 3.10-5: The proposed Project would not displace substantial numbers of people or existing housing. (Less than Significant)

Proposed Project:

Residential structures are not located on the Project site. One residence formerly located within the southwestern portion of the Project site has been vacated and demolished. Development of the Project would add a maximum of 1,503 residential units (up to 1,163 LDR units and up to 340

HDR units). Therefore, the Project would not displace substantial numbers of people or existing housing. The Project will have a **less than significant** impact related to the displacement of substantial numbers of people or existing housing.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not displace any people or existing structures. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the With Bridge Alternative. In addition, as noted above, residential structures are not located the Project site. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

Similar to the proposed Project, the balance of the Project site would be developed with residential and commercial uses under the General Plan 2035 Alternative. In addition, as noted above, residential structures are not located the Project site. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses. As noted above, residential structures are not located the Project site. Development of the Reduced Project Alternative would add a maximum of 1,031 residential units. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site.

Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative. As noted above, residential structures are not located the Project site. Development of the Reduced Intensity/Density Alternative would add a maximum of 1,202 residential units. As such, similar to the proposed Project, this is a **less than significant** impact, and no mitigation is required. Compared to the proposed Project, this alternative is equal relative to this topic.

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3.11.1 INTRODUCTION

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. This section is based on the *Tra Vigne Draft EIR Environmental Noise Assessment* completed by j.c. brennan & associates, Inc. in June 2017. The *Tra Vigne Draft EIR Environmental Noise Assessment* is included as Appendix J of this Draft EIR. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.11.2 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 to 10 pm) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
L_(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L ₅₀ is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 pm to 7:00 am) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn} , but includes a +5 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (DBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceptible difference;
- A change in level of at least 5 dBA is 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.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Existing Land Uses

The Project site consists largely of active agricultural fields (roughly 253 acres in production). Surrounding land uses include some single family residential uses to the north across Eight Mile Road, and some commercial and light industrial at the northeast corner of Eight Mile Road. The Union Pacific Railroad (UPRR) is located to the east, and agricultural land is located to the west and to the south. Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the Project site for the former Bear Creek East Project in 2005, and additional noise measurements were conducted on March 15, 2016. The noise measurement locations are shown on Figure 3.11-1. The Project site noise environment is dominated by roadway traffic and railroad operations. The three sites are considered to be appropriate for developing the background noise environment discussion. The noise level measurement survey results are provided in Table 3.11-2.

Appendix B of the Noise Report (Appendix J of this EIR) shows the complete results of the continuous noise monitoring at Site A. The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.11-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	L _{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, dB					
			DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
			L _{EQ}	L ₅₀	L _{MAX}	L _{EQ}	L ₅₀	L _{MAX}
CONTINUOUS (24-HOUR) NOISE LEVEL MEASUREMENTS								
A	90 feet from the UPRR Track	80.1 dB	72.1	51	89	73.9	44	97
SHORT-TERM NOISE LEVEL MEASUREMENTS								
1	East of West Lane 2005 (at 1:40 PM) 2016 (at 11:20 AM)	NA	65.4 63.2	57 56	74.3 75.1	N/A		
2	Northeast Corner of Project Site 2005 (at 2:00 PM) 2016 (at 12:30 PM)	NA	62.4 60.4	57 55	74.7 73.9	N/A		

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2005 & 2016.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calvenio reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic study prepared for the Project. Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was added to the noise prediction model. A -5 dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this section.

3.11 NOISE

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} at the closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix C of the Noise Report (Appendix J of this EIR).

TABLE 3.11-3: EXISTING TRAFFIC NOISE LEVELS AT A DISTANCE OF 100 FEET

ROADWAY	SEGMENT	EXTERIOR TRAFFIC NOISE LEVEL, $DB L_{DN}$ ¹
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	65
	Lower Sacramento Rd. to West Ln.	66
	West Ln. To Micke Grove/Holman Rd.	64
West Lane	Eight Mile Rd. to Ham Ln.	65
	Morada Ln. to Eight Mile Rd.	66
	Morada Ln. to Knickerbocker Dr.	67
Morada Lane	West of West Ln.	57
	East of West Ln.	64
State Route 99	Eight Mile Rd. to Armstrong Rd.	79
	Eight Mile Rd. to Morada Ln.	79
	Morada Ln. to Hammer Ln.	80

NOTE: ¹ TRAFFIC NOISE LEVELS INCLUDE NOISE FROM SR 120 WHICH CONTRIBUTES TO OVERALL TRAFFIC NOISE LEVELS AT MOST LOCATIONS IN THE PROJECT VICINITY.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KD ANDERSON, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

EXISTING RAILROAD NOISE LEVELS

Railroad activity within the Project vicinity occurs along the UPRR line located along the eastern boundary of the Project site. j.c. brennan & associates, Inc. used continuous hourly noise measurements previously conducted in February 2005 for the Bear Creek East Project directly east from the Project site.¹ The noise measurements were conducted adjacent to the railroad tracks for a 24-hour period. The sound level meter was programmed to collect single event noise level data due to train passbys on the Project site, as well as overall hourly noise level data. The noise level measurements were conducted at a distance 90 feet east of the centerline of the railroad track and south of a grade crossing. This distance remains appropriate for the proposed Project site plan.

Instrumentation consisted of LDL Model 820 precision integrating sound level meters. The systems were calibrated before use with a matching acoustical calibrator to ensure accuracy of the measurements.

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations within the Project vicinity, accounting for the effects of travel speed and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train operations, so that the typical number of train operations could be determined.

¹ j.c. brennan & associates, Inc. Noise Analysis, Bear Creek East EIR. Prepared for Insite Environmental. July 31, 2006.

The results indicated that measured train operations resulted in sound exposure levels (SEL) ranging from 102 dB to 112 dB at a distance of 90 feet. The results also indicated that the typical train operation resulted in a mean SEL of 107.4 dB at a distance of 90 feet from the railroad track centerline. Based upon the noise measurement data, approximately 28 trains per day operate along the track, with approximately 50 percent of the trains operating during the nighttime hours (10 pm to 7 am) and 50 percent of the trains operating during the daytime hours (7 am to 10 pm). Table 3.11-4 shows the results of the measured noise level, and distances to the railroad noise contours. The duration of typical train passbys are approximately three to five minutes.

TABLE 3.11-4: EXISTING UPRR RAILROAD NOISE LEVELS

<i>L_{DN} AT 90 FEET</i>	<i>DISTANCES TO CONTOURS</i>		
	60 dB L _{dn}	65 dB L _{dn}	70 dB L _{dn}
80 dB L _{dn}	1,969 feet	914 feet	424 feet

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2005 AND 2016.

EXISTING INDUSTRIAL NOISE LEVELS

Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site. To quantify existing industrial noise levels in the vicinity of the Project site, j.c. brennan & associates, Inc. staff conducted short-term noise level measurements at three locations on the adjacent industrial land uses. Noise levels were 60 dB L_{eq} at a distance of 100 feet. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. Table 3.11-5 shows the results of the noise contours at the existing industrial site.

TABLE 3.11-5: EXISTING INDUSTRIAL NOISE LEVELS

<i>L_{DN} AT 100 FEET</i>	<i>DISTANCES TO CONTOURS</i>		
	60 dB L _{dn}	65 dB L _{dn}	70 dB L _{dn}
60 dB L _{dn}	100 feet	56 feet	32 feet

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2005 AND 2016.

3.11.3 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed Project.

STATE

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other

than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

CITY OF STOCKTON

City of Stockton General Plan

The following policies of the Stockton General Plan related to noise are applicable to the proposed Project.

Health & Safety Element

NOISE POLICIES

- HS-2.1. Sensitive Receptors. The City shall prohibit the development of new commercial, industrial, or other noise-generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA Community Noise Equivalent (CNEL) (decibels on A-weighted scale CNEL) measured at the property line of the noise sensitive land use.
- HS-2.2. Noise Compatibility Guidelines. The City shall allow the development of noise sensitive land uses (which include, but are not limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are “acceptable” according to Table HS-11.1 [Table 3.11-6 of this section] “Land Use Compatibility for Community Noise Environments.” Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to achieve these levels.
- HS-2.11. Limiting Construction Activities. The City shall limit construction activities to the hours of 7:00 am to 7:00 pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the city.
- HS-2.12. Sound Attenuation Features. The City shall require sound attenuation features such as walls, berming, heavy landscaping between commercial, industrial, and residential uses to reduce noise and vibration impacts.
- HS-2.13. Noise Buffering. The City shall require noise buffering or construction treatments (additional insulation, double paned glass, etc.) in new development that includes noise sensitive uses located near major streets, highways, the airport, railroad tracks, or other significant noise sources.

- HS-2.14. State Noise Insulation Standards. The City shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.
- HS-2.17. Commercial Uses. The City shall require that noise produced by commercial uses not exceed 75 dB L_{dn} /CNEL at the nearest property line.

TABLE 3.11-6: MAXIMUM ALLOWABLE AMBIENT NOISE EXPOSURE BY LAND USE

TABLE HS-11.1 OF THE STOCKTON GENERAL PLAN								
LAND USE TYPE		NOISE LEVELS (L_{DN})						
		0-55	56-60	61-65	66-70	71-75	75-80	>81
Residential								
Hotels, Motels								
Schools, Libraries, Churches, Hospitals, Extended Care Facilities								
Auditoriums, Concert Halls, Amphitheaters								
Sports Arenas, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business Commercial and Professional								
Mining, Industrial, Manufacturing, Utilities, Agriculture								
		Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.						
		Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.						
		Unacceptable. New construction or development should not be undertaken.						
If existing noise standards are currently exceeded, a proposed project shall not incrementally increase noise levels by more than 3 dBA.								

Based upon the City of Stockton General Plan Noise Element Policy HS-2.1 outlined above, it would appear that new commercial uses could generate noise levels of up to 70 dB CNEL at existing residential uses. New residential uses adjacent to commercial developments would need to comply with the noise level guidelines shown in Table 3.11-6 above, as outlined in Policy HS-2.2, which similarly establishes an acceptable exterior noise environment up to 70 dB L_{dn} .

City of Stockton Municipal Code

The City of Stockton Municipal Code Chapter 16, Development Code, contains performance

3.11 NOISE

standards for new developments, as shown in Table 3.11-7. Noise generated from the proposed Project is considered stationary noise; therefore, the following standards would apply to the Project.

TABLE 3.11-7: EXTERIOR HOURLY NOISE LEVEL STANDARDS FOR STATIONARY NOISE SOURCES

CHAPTER 16 CITY OF STOCKTON DEVELOPMENT CODE		
NOISE LEVEL DESCRIPTOR	MAXIMUM ACCEPTABLE NOISE LEVEL	
	DAYTIME (7 AM - 10 PM)	NIGHTTIME (10 PM - 7 AM)
Hourly L_{eq} , dBA	55	45
Maximum Level (L_{max}), dBA	75	65

NOTE: * EACH OF THE NOISE LEVELS STANDARDS SPECIFIED ABOVE SHALL BE REDUCED BY 5 DBA FOR SIMPLE TONE, NOISE CONSISTING PRIMARILY OF SPEECH OR MUSIC, OR RECURRING IMPULSIVE NOISES.

SOURCE: CITY OF STOCKTON GENERAL PLAN NOISE ELEMENT, TABLE 1.

There are also exemptions to the standards and activities which are considered to be violations that are outlined in the Municipal Code. The following provides a list of the pertinent Municipal Code exemptions and violations:

16.60.020 - ACTIVITIES EXEMPT FROM NOISE REGULATIONS

16.60.020(C) – Outdoor play/school ground activities. Activities conducted on parks and playgrounds and school grounds, between 7:00 am and 10:00 pm, except for additional hours that may be granted by the City Manager. Otherwise, outdoor activities shall meet standards in Table 3-7 (of the Code).

16.60.030 – ACTIVITIES DEEMED VIOLATIONS OF THIS DIVISION

16.60.030(A) – Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 pm and 7:00 am, so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

16.60.030(B) – Loading and unloading operations. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 pm and 7:00 am in a manner to cause a noise disturbance.

16.60.030(F) – Sweepers and associated equipment. Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 pm and 7:00 am the following day in, or adjacent to, a residential zoning district.

16.60.040 – STANDARDS

16.60.040(B)(2)(c) – Adjacent to other uses. If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential (RE, RL, RM, or RH) or open space (OS) zoning districts, these uses shall comply with the performance standards contained in Table 3-7, Part II.

VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Stockton does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction are addressed as potential vibration impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-8 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.11-8: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		HUMAN REACTION	EFFECT ON BUILDINGS
MM/SEC.	IN./SEC.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBOEN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.11.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

- 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;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without Project;
- 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, expose people residing or working in the Project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a Project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Project site is not located within two miles of a public or private airport or airstrip. The nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Kingdon Executive Airport is located approximately 3.84 miles northwest of the Project site. Therefore, airport and private airstrips are not discussed further in this analysis.

Determination of a Significant Increase in Noise Levels

California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it would result in a substantial permanent, temporary, or periodic increase in ambient noise levels in the project vicinity. The City of Stockton General Plan Health and Safety Element (Section 11.2, Noise) provides specific guidance for assessing increases in ambient noise.

Additionally, in making a determination of impact If existing noise standards are currently exceeded, a substantial increase will occur if ambient noise levels are incrementally increased by 3 dB or more.

As described previously, Table 3.11-6 identifies the maximum allowable ambient noise exposure by land use within the City of Stockton.

IMPACTS AND MITIGATION MEASURES

The proposed project and five alternatives are analyzed in the following environmental analysis. The alternatives include: No Build Alternative, With Bridge Alternative, General Plan 2035

Alternative, Reduced Project Alternative, and Reduced Intensity/Density Alternative. Each alternative is described in detail in Chapter 5.0.

Impact 3.11-1: The proposed Project may result in a substantial permanent increase in ambient noise levels at existing receptors in the Project vicinity above levels existing without the Project as a result of excessive traffic noise. (Less than Significant)

Proposed Project:

Table 3.11-9 shows the predicted traffic noise level increases on the local roadway network for the Existing condition, the Existing Plus Approved Projects condition, Existing Plus Approved Project Plus Tra Vigne Project condition, Cumulative condition, and Cumulative Plus Tra Vigne Project condition. The Existing Plus Approved Projects condition is a background condition which includes existing traffic levels, and traffic associated with approved land use development projects in vicinity of the Project site. The Cumulative condition is a background condition with future year traffic forecasts, based on development of surrounding land uses and the roadway network. This set of scenarios assumes 2035 conditions with future development consistent with the City of Stockton General Plan. See Section 3.13, Transportation and Circulation, for more information regarding the analysis scenarios. The data shown in Table 3.11-9 utilizes the traffic data from the technical analysis completed by KDAnderson & Associates, Inc. in August 2017. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

Some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-9.

As shown in Table 3.11-9, these receptors will continue to experience elevated exterior noise levels with implementation of the proposed Project. The proposed Project's contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +2 dBA L_{dn} . This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the proposed Project would be **less than significant**.

TABLE 3.11-9: EXISTING PLUS APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (PROPOSED PROJECT)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + TRA VIGNE	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + TRA VIGNE	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	69	+1	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition.

Table 3.11-10 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions, for the No Build Alternative. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-10. As shown in Table 3.11-10, these existing receptors will continue to experience elevated exterior noise levels with implementation of the No Build Alternative. The No Build Alternative would not contribute to traffic noise increases. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

TABLE 3.11-10: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (NO BUILD ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + NO BUILD	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + NO BUILD	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	65	0	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	67	0	71	70	-1
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	65	0
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. This alternative also establishes a site for a school. This alternative would result in the same number of HDR units as the proposed Project and would reduce the number of LDR units compared to the proposed Project. This would result in a reduction of seven units when compared to the proposed Project and, thus, would introduce seven fewer structures to the Project site. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. If the Lodi Unified School District (LUSD) decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation which would result in the construction an additional 90 units in place of the school. Under this variation, the total residential units would increase from 1,406 to 1,496 units. The balance of the Project site would be developed as proposed under the proposed Project.

Table 3.11-11 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Bridge Alternative and No Project conditions, for the Bridge Alternative. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-11. As shown in Table 3.11-11, these existing receptors will continue to experience elevated exterior noise levels with implementation of the With Bridge Alternative. The Bridge Alternative contribution to traffic noise increases is predicted to range between 0 dBA L_{dn} and +2 dBA L_{dn} . This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the proposed Project would be **less than significant**. Compared to the proposed Project, this alternative is considered to be similar in traffic noise impacts.

TABLE 3.11-11: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (WITH BRIDGE ALTERNATIVE)

Roadway	Segment	Noise Levels (L_{DN} , dB) at Nearest Sensitive Receptors					
		Existing + Approved	Existing + Approved + Bridge	Change	Cumulative No Project	Cumulative + Bridge	Change
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	0
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area and the commercial area would be decreased from as compared to the proposed Project. The balance of the Project site would be developed as proposed under the Project. The Marlette Road extension that is shown on the General Plan 2035 Future Roadways Map would be constructed. A bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project and would ultimately connect with Holman Road. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

Table 3.11-12 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions for the General Plan 2035 Alternative. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-12. As shown in Table 3.11-12, these existing receptors will continue to experience elevated exterior noise levels with implementation of the General Plan 2035 Alternative. The General Plan 2035 Alternative contribution to traffic noise increases is predicted to range between +1 dBA L_{dn} and +2 dBA L_{dn} . This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the General Plan 2035 Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-12: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (GENERAL PLAN 2035 ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} DB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + GP 2035	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + GP 2035	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	71	0
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	69	+2	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	69	+1	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	65	0
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	83	0
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 100.1 acres, which includes elimination of the existing 15.57-acre industrial area from the Project site. This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a K-8 school.

Table 3.11-13 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions for the Reduced Project Alternative. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-13. As shown in Table 3.11-13, these existing receptors will continue to experience elevated exterior noise levels with implementation of the Reduced Project Alternative. The Reduced Project Alternative contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +1 dBA L_{dn} . This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the Reduced Project Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-13: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (REDUCED PROJECT ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + REDUCED PROJECT	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + REDUCED PROJECT	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	66	+1	71	71	0
West Lane	Eight Mile Rd. to Ham Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	70	-1
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	67	+1
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. This option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The commercial area in the northwest portion of the Project site would be eliminated, which would in turn eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for K-8 school.

Table 3.11-14 shows the predicted traffic noise level increases on the local roadway network for existing and cumulative Project and no Project conditions for the Reduced Intensity/Density Alternative. Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some existing noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-14. As shown in Table 3.11-14, these existing receptors will continue to experience elevated exterior noise levels with implementation of the Reduced Intensity/Density Alternative. The Reduced Intensity/Density Alternative contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +1 dBA L_{dn} . This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the Reduced Intensity/Density Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-14: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (REDUCED INTENSITY/DENSITY ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} DB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + REDUCED INTENSITY	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + REDUCED INTENSITY	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	66	+1	71	71	0
West Lane	Eight Mile Rd. to Ham Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	70	0
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	67	+1
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Impact 3.11-2: The proposed Project has the potential to result in a significant temporary or periodic increase in ambient noise levels in the Project vicinity existing without the Project during construction activities. (Less than Significant with Mitigation)

Proposed Project:

During the construction of the Project, including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-15, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities will consist of multiple phases over several years. These construction activities can be described as site improvements (grading, underground infrastructure, and topside improvements) and vertical construction (building construction and architectural coatings). For purposes of this analysis, it is assumed that Project build-out would occur from 2017 through early 2023. The exact construction schedule of the entire Project is largely dependent on market demands. Construction activities are anticipated to occur during normal daytime working hours. Pile drivers are not anticipated to be required for construction of the Project. More detailed information regarding the Project construction schedule and required equipment is included in Section 3.3, Air Quality.

TABLE 3.11-15: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	MAXIMUM LEVEL, dB AT 50 FEET
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

The site improvement phase of construction will begin with site preparation. This step will include the use of dozers, backhoes, and loaders to strip (clear and grub) all organic materials and the upper half-inch to inch of soil from the Project site. This task will generally take 20 days to complete and will include vehicle trips from construction workers. Given that the Project site lacks significant vegetation, this step will likely be less than the assumed 20 days.

After the site is stripped of organic materials grading will begin. This activity will involve the use of excavators, graders, dozers, scrapers, loaders, and backhoes to move soil around the Project site to create specific engineered grade elevations and soil compaction levels. Grading the Project site would take approximately 180 days and will include vehicle trips from construction workers. The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and access aprons and then paving of all streets and parking lots. This task will involve the use of pavers, paving equipment, and rollers and will take approximately 80 days and will include vehicle trips from construction workers.

Building construction involves the vertical construction of structures and landscaping around the structures. This task will involve the use of forklifts, generator sets, welders and small tractors/loaders/backhoes. Architectural coatings involve the interior and exterior painting associated with the structures. This task will involve the use of air compressors. This task will generally begin five months after construction begins on the structure and will generally be completed with the completion of the individual buildings. Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

The Occupational Safety & Health Administration (OSHA) provides suggested noise control techniques in order to reduce construction worker exposure of excessive noise levels. Contractors are required to comply with the OSHA requirements to ensure worker safety, including reducing exposure to excessive noise. Also, construction activities must comply with noise regulations outlined in the City's General Plan Noise Element and Chapter 16.60 of the Municipal Code which limit construction to the hours of 7:00 am to 7:00 pm. Implementation of the following mitigation measures and compliance with the noise regulations in place will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.11-1: *The City shall ensure that the project applicant or construction contractor will implement the following construction-related noise reducing measures:*

- *All equipment shall be fitted with factory equipped mufflers, and shall be in good working order.*
- *Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.*
- *Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences.*
- *Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Stockton in the event of problems.*

- *An onsite complaint and enforcement manager shall track and respond to noise complaints.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measures 3.11-1 combined with regulations that the City has in their Municipal Code, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. The No Build Alternative would not result in additional construction activities. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative

Under the With Bridge Alternative, the entire Project site would be developed with similar land use designations and circulation facilities as the proposed Project. Unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

During the construction of this alternative, including roads, water and sewer lines, construction of the bridge and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-15, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

As noted above, the General Plan 2035 Alternative includes development of the Project site with the same land use designations and circulation facilities as described in the Stockton General Plan. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. Under this alternative, the Marlette Road extension would be constructed, and a bridge would be constructed across Bear Creek to extend Marlette Road into the Bear Creek South project. Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the City's General Plan 2035. This alternative would not require a General Plan amendment. The balance of the Project site would be developed as proposed under the proposed Project. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. This alternative would not include dedication of an K-8 school site. This alternative would include construction of the bridge crossing over Bear Creek, which is currently reflected in the Circulation Element of the General Plan 2035. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

During the construction of this alternative, including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

As noted above, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

During the construction of this alternative, including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-15, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

As noted above, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

During the construction of this alternative, including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-15, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-3: The proposed Project may result in generation of excessive groundborne vibration during construction activities. (Less than Significant)

Proposed Project:

The primary vibration-generating activities associated with the proposed Project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 100 feet or further from the Project area. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception, which is 0.1 in/sec (see Table 3.11-8). Building damage can take the form of cosmetic or structural. Table 3.11-16 shows the typical vibration levels produced by construction equipment.

TABLE 3.11-16: VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

Human annoyance occurs when construction vibration rises significantly above the threshold of perception, which is 0.1 in/sec. Table 3.11-16 data indicate that construction vibration levels anticipated for the Project are less than the 0.1 in/sec threshold of human annoyance at distances of 100 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed Project would have a **less than significant** impact relative to this environmental topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would not result in additional construction activities. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the site would be developed similar to the proposed Project Alternative, with the exception of construction of the bridge over Bear Creek.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-16 shows the typical vibration levels produced by construction equipment.

Table 3.11-16 data indicate that construction vibration levels anticipated for the With Bridge Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-16 shows the typical vibration levels produced by construction equipment.

Table 3.11-16 data indicate that construction vibration levels anticipated for the General Plan 2035 Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. The Reduced Project Alternative would reduce the amount of site disturbance from 318.82 acres under the proposed Project to 200.15 acres and would eliminate the existing industrial uses and proposed commercial uses.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above

the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-16 shows the typical vibration levels produced by construction equipment.

Table 3.11-16 data indicate that construction vibration levels anticipated for the Reduced Project Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-16 shows the typical vibration levels produced by construction equipment.

Table 3.11-16 data indicate that construction vibration levels anticipated for the Reduced Intensity/Density Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-4: The proposed Project has the potential to result in a significant substantial permanent increase in ambient noise levels at new sensitive receptors as a result of excessive traffic noise. (Less than Significant with Mitigation)

Proposed Project:

EXTERIOR NOISE IMPACTS

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the Project. Table 3.11-17 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways.

TABLE 3.11-17: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	CUMULATIVE + PROJECT ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L _{DN} ²			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	65,464	71	64	60	60
West Lane	Backyards	75	48,318	71	63	61	60

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Appendix C of the Noise Report (Appendix J of this EIR) provides the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Table 3.11-17 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}. Table 3.11-17 data indicate that noise barriers 10-feet in height along Eight Mile Road and West Lane, which are adjacent to proposed residential uses, would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the following interior and exterior mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-2: *Minimum 11-foot tall sound walls and/or landscaped berms shall be constructed along Eight Mile Road and a 10-foot tall sound wall and/or landscaped berms along West Lane adjacent to proposed residential uses. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. Where high density residential occurs, site designs should allow for applying the exterior noise level standard at common outdoor areas, which are shielded from Eight Mile Road and West Lane. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

Mitigation Measure 3.11-3: *Windows at first row of second floor facades facing Eight Mile Road and West Lane shall have an STC rating of 35. A detailed analysis of any additional interior mitigation measures shall be conducted when building plans are available. Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measures 3.11-2 and 3.11-3, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would result in the Project site remaining vacant and would not introduce new sensitive receptors to the Project site. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmental superior relative to this topic.

With Bridge Alternative:

EXTERIOR NOISE IMPACTS

Table 3.11-18 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-18 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-18: CUMULATIVE + WITH BRIDGE TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	ADT	PREDICTED TRAFFIC NOISE LEVELS, dB L _{DN} ²			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	65,464	71	63	62	60
West Lane	Backyards	75	48,318	71	63	61	60

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Table 3.11-18 data indicate that noise barriers 10-feet in height along Eight Mile Road and West Lane, which are adjacent to proposed residential uses, would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the With Bridge Alternative. With implementation of these mitigation measures, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is slightly inferior relative to this topic.

General Plan 2035 Alternative:**EXTERIOR NOISE IMPACTS**

Table 3.11-19 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-19 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-19: CUMULATIVE + GENERAL PLAN 2035 ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	ADT	PREDICTED TRAFFIC NOISE LEVELS, dB L _{DN} ²			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,164	71	63	61	60
West Lane	Backyards	75	47,000	71	62	60	60

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

3.11 NOISE

Table 3.11-19 data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the General Plan 2035 Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the General Plan 2035 Alternative. With implementation of these mitigation measure, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

EXTERIOR NOISE IMPACTS

Table 3.11-20 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-20 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn} .

TABLE 3.11-20: CUMULATIVE + REDUCED PROJECT ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	ADT	PREDICTED TRAFFIC NOISE LEVELS, dB L_{DN} ²			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,042	71	63	61	60
West Lane	Backyards	75	43,564	70	62	60	59

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Table 3.11-20 data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the Reduced Project Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the Reduced Project Alternative. With implementation of these mitigation measures, the Reduced Project

Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Intensity/Density Alternative:

EXTERIOR NOISE IMPACTS

Table 3.11-21 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-21 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-21: CUMULATIVE + REDUCED INTENSITY/DENSITY ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	ADT	PREDICTED TRAFFIC NOISE LEVELS, dB L _{DN} ²			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,448	71	63	61	60
West Lane	Backyards	75	44,032	70	62	60	59

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Table 3.11-21 data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the Reduced Intensity/Density Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the Reduced Intensity/Density Alternative. With implementation of these mitigation measure, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Impact 3.11-5: The proposed Project may result in a significant temporary or periodic increase in ambient noise levels in the Project vicinity from proposed park or school uses. (Less than Significant)*Proposed Project:*

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max} . It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor noise from park play areas, provided that play occurs between the hours of 7:00 am. and 10:00 pm. Therefore, this would be considered a **less than significant** impact.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would not result in park activities on the site. Therefore, park noise would not occur. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max} . It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm. Therefore, this would be considered a **less than significant** impact. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

The General Plan 2035 Alternative would include park space to serve the community and surrounding area. Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max} . It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm. Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

The Reduced Project Alternative would include park space to serve the community and surrounding area. The Reduced Project Alternative would also include a potential 14.7-acre K-8 school. Therefore, play areas may be included with the school site. Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max} . It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm. Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

The Reduced Intensity/Density Alternative would include park space to serve the community and surrounding area. The Reduced Intensity/Density Alternative would also include a potential 14.7-acre K-8 school. Therefore, play areas may be included with the school site. Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max} . It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm. Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-6: The proposed Project has the potential to result in a significant substantial permanent increase in ambient noise levels at new sensitive receptors as a result of excessive railroad noise. (Less than Significant with Mitigation)

Proposed Project:

EXTERIOR NOISE IMPACTS

The following discussion is based upon noise level measurements of train operations conducted along the UPRR track adjacent to the east side of the Project site. The results indicate that the railroad activity resulted in an overall noise level of 80 dB L_{dn} at a distance of 90 feet from the track centerline.

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn} and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is, therefore, considered significant according to the Project's Significance Criteria.

3.11 NOISE

A barrier analysis was conducted to determine the appropriate barrier heights and setbacks required to reduce railroad noise levels within compliance with the City of Stockton exterior noise level criteria. Table 3.11-22 shows the results of the barrier analysis.

TABLE 3.11-22: MITIGATED RAILROAD NOISE LEVELS

SOURCE HEIGHT	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	PREDICTED TRAFFIC NOISE LEVELS, dB L _{DN}			
			NO WALL	10' WALL	12' WALL	14' WALL
17-feet relative to the Project site. This assumes the tracks are 7-feet above the Project site.	Backyards	100	80	73	70	68
	Backyards	200	75	66	64	62
	Backyards	300	70	61	59	57

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Based upon Table 3.11-22, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation). Additionally, with a setback of 300 feet, the upper limit of 65 dB L_{dn} can be achieved with a 10-foot tall wall/barrier (relative to the building pad elevation).

INTERIOR NOISE IMPACTS

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the following interior and exterior mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-4: *For the first row of residences facing the UPRR track, the Project site shall include setbacks and barriers to achieve a minimum exterior noise level of 65 dB L_{dn} at the backyards of the first row of residences facing the UPRR track. With a setback of 200 feet, a 12-foot tall wall/barrier (relative to the building pad elevation) would be required. With a setback of 300 feet, a 10-foot tall wall/barrier (relative to the building pad elevation) would be required. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

Mitigation Measure 3.11-5: *A detailed analysis of interior mitigation measures shall be conducted when building plans for the first row of residences facing the UPRR track are available. The analysis shall be conducted for all residences up to a distance of 285 feet from the railroad track centerline (which represents the location of the 70 dB L_{dn} contour). Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measures 3.11-4 and 3.11-5, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

EXTERIOR NOISE IMPACTS

Based upon Table 3.11-22, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

INTERIOR NOISE IMPACTS

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn} . These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the previously mentioned interior and exterior mitigation measures, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic.

General Plan 2035 Alternative:

EXTERIOR NOISE IMPACTS

Based upon Table 3.11-22, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

INTERIOR NOISE IMPACTS

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn} . These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, similar to the proposed Project, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

EXTERIOR NOISE IMPACTS

Based upon Table 3.11-22, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

INTERIOR NOISE IMPACTS

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn} . These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, similar to the proposed Project, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

EXTERIOR NOISE IMPACTS

Based upon Table 3.11-22, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

INTERIOR NOISE IMPACTS

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn} . These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-7: The proposed Project has the potential to result in a substantial permanent increase in ambient noise levels at new sensitive receptors as a result of existing industrial noise levels. (Less than Significant with Mitigation)

Proposed Project:

Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site. To quantify existing industrial noise levels in the vicinity of the Project site, j.c. brennan & associates, Inc. staff conducted short-term noise level measurements at

three locations on the adjacent industrial land uses. Noise levels were generally in the range of 60 dB L_{eq} at a distance of 100 feet. Noise sources associated with operations included heavy equipment moving about the site and idling equipment. Operations occur primarily during the daytime. However, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq} . With implementation of the following mitigation measure, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-6: Residential uses shall maintain a 100-foot setback from the industrial property lines, and a barrier 8-feet in height shall be constructed to reduce noise levels to less than 55 dBA L_{eq} , and break line-of-sight to the noise sources. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measure 3.11-6, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq} . With implementation of the same mitigation measure as the proposed Project, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq} . With implementation of the same mitigation measure as the

proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Under the Reduced Project Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq} . With implementation of the same mitigation measure as the proposed Project, the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Although the Reduced Intensity/Density Alternative would eliminate the proposed commercial portion of the Project, the entire Project site would be developed with urban uses under the Reduced Intensity/Density Alternative.

Under the Reduced Intensity/Density Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq} . With implementation of the same mitigation measure as the proposed Project, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-8: The proposed Project has the potential to result in a substantial permanent increase in ambient noise levels at new sensitive receptors as a result of proposed commercial development noise. (Less than Significant with Mitigation)

Proposed Project:

Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources

may vary based upon climatic conditions, time of day and existing ambient noise levels. The Project includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and heating, air conditioning and ventilation (HVAC) equipment.

The proposed commercial land use is adjacent to the proposed residential uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq} , at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB L_{eq} . However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the following mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-7: *Planned retail, commercial, light industrial and/or office uses within the commercial development area shall be required to comply with the requirements of Chapter 16 of the City of Stockton Development Code. This requirement shall be included in the improvements plans for the commercial portion of the Project prior to their approval by the City's Public Works Department. Noise control strategies to reduce operational noise at adjacent residential uses may include, but are not limited to, the following:*

- *Sound walls shall be a minimum of 8-feet in height to block line of sight to truck noise sources;*
- *Loading docks shall be enclosed and allow trucks to back up to the loading docks;*
- *Trucks shall be equipped with loading dock pads, such as Frommelt dock pads, which provide a seal between the loading dock and the trucks.*
- *HVAC equipment shall be located either at ground level or, when located on roof-tops, the building facades shall include parapets for shielding.*

These requirements shall be included in the improvements plans for the commercial portion of the Project to the satisfaction of the City prior to their approval by the City's Public Works Department.

Mitigation Measure 3.11-8: *Where commercial retail land uses are adjacent to residential areas or separated by local streets, barriers shall be considered as a means of reducing overall noise levels due to on-site activities. Generally, barriers in the range of 8-feet in height would be sufficient to reduce on-site noise levels at residential uses. This requirement shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

Mitigation Measure 3.11-9: *When tentative maps for the commercial development area are available, a detailed noise analysis shall be completed to ensure compliance with the City of Stockton noise level criteria. This requirement shall be included in the improvements plans for the commercial portion of the Project prior to their approval by the City's Public Works Department.*

RESULTING LEVEL OF SIGNIFICANCE

With implementation of Mitigation Measures 3.11-7 through 3.11-9, the proposed Project would have a **less than significant** impact relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The Project includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and HVAC equipment.

The With Bridge Alternative would also include development of residential uses adjacent to commercial uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq} , at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB L_{eq} . However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the same mitigation measures as the proposed Project, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Under the General Plan 2035 Alternative, the Project site would include commercial development at the same site. Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The alternative includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and HVAC equipment.

The commercial land use is adjacent to residential uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq} , at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB L_{eq} . However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the same mitigation measures as the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, approximately 33 percent of the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Under the Reduced Project Alternative, the commercial area in the northwest portion of the Project site would be eliminated. Therefore, this is a **less than significant** impact. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with residential uses and 14.7 acres would be reserved for a potential K-8 school site. Under the Reduced Intensity/Density Alternative, the commercial area in the northwest portion of the Project site would be eliminated. Therefore, this is a **less than significant impact**. Compared to the proposed Project, this alternative is superior relative to this topic.



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