City of Ceres

Whitmore Ranch Specific Plan

Draft Environmental Impact Report (SCH# 2017012063)









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TABLE OF CONTENTS

Section			Page
EXECUTIVE SUMMARY			**ES-1**
1	**INTRODUCTION**		**1-1**
	1.1	Purpose and Scope	1-1
	1.2	Process	1-3
	1.3	Organization and Content of this Draft EIR	1-4
2	**PROJECT DESCRIPTION**		**2-1**
	2.1	Introduction	2-1
	2.2	Regional Location	2-1
	2.3	Project Site and Vicinity	2-1
		2.3.1 Existing On-Site Land Uses	2-1
		2.3.2 Existing Surrounding Land Uses	2-1
	2.4	Project Objectives	2-7
	2.5	Description of the Proposed Specific Plan	2-7
		2.5.1 Permits and Other Approvals	2-7
		2.5.2 Specific Plan Land Uses	2-8
		2.5.3 Development Potential	2-11
		2.5.4 Public Utilities and Infrastructure	2-12
		2.5.5 Transportation	2-17
	2.6	Intended Uses of this EIR	2-18
3	**ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES**		**3-1**
	3.0	Approach to the Environmental Analysis	3-1
	3.1	Aesthetics	3.1-1
		3.1.1 Environmental Setting	3.1-1
		3.1.2 Regulatory Framework	3.1-2
		3.1.3 Environmental Impacts and Mitigation Measures	3.1-7
	3.2	Agricultural Resources	3.2-1
		3.2.1 Environmental Setting	3.2-1
		3.2.2 Regulatory Framework	3.2-5
		3.2.3 Environmental Impacts and Mitigation Measures	3.2-11
	3.3	Air Quality	3.3-1
		3.3.1 Environmental Setting	3.3-1
		3.3.2 Regulatory Framework	3.3-9
		3.3.3 Environmental Impacts and Mitigation Measures	3.3-21
	3.4	Biological Resources	3.4-1
		3.4.1 Environmental Setting	3.4-1
		3.4.2 Regulatory Framework	3.4-10
		3.4.3 Environmental Impacts and Mitigation Measures	3.4-15

3.5 Cultural Resources 3.5-1
3.5.1 Environmental Setting 3.5-1
3.5.2 Research Methodology 3.5-6
3.5.3 Consultation 3.5-8
3.5.4 Cultural Resource Field Investigations 3.5-8
3.5.5 Regulatory Framework 3.5-10
3.5.6 Environmental Impacts and Mitigation Measures 3.5-16
3.6 Geology, Soils, Minerals, and Paleontological Resources 3.6-1
3.6.1 Environmental Setting 3.6-1
3.6.2 Regulatory Framework 3.6-8
3.6.3 Environmental Impacts and Mitigation Measures 3.6-11
3.7 Greenhouse Gas Emissions 3.7-1
3.7.1 Environmental Setting 3.7-1
3.7.2 Regulatory Framework 3.7-4
3.7.3 Environmental Impacts and Mitigation Measures 3.7-10
3.8 Hazards and Hazardous Materials 3.8-1
3.8.1 Environmental Setting 3.8-1
3.8.2 Regulatory Framework 3.8-8
3.8.3 Environmental Impacts and Mitigation Measures 3.8-17
3.9 Hydrology and Water Quality 3.9-1
3.9.1 Environmental Setting 3.9-1
3.9.2 Regulatory Framework 3.9-8
3.9.3 Environmental Impacts and Mitigation Measures 3.9-20
3.10 Land Use and Planning 3.10-1
3.10.1 Environmental Setting 3.10-1
3.10.2 Regulatory Framework 3.10-1
3.10.3 Environmental Impacts and Mitigation Measures 3.10-4
3.11 Noise and Vibration 3.11-1
3.11.1 Noise and Vibration Fundamentals 3.11-1
3.11.2 Environmental Setting 3.11-7
3.11.3 Regulatory Framework 3.11-13
3.11.4 Environmental Impacts and Mitigation Measures 3.11-26
3.12 Population and Housing 3.12-1
3.12.1 Existing Conditions 3.12-1
3.12.2 Regulatory Framework 3.12-3
3.12.3 Environmental Impacts and Mitigation Measures 3.12-5
3.13 Public Services and Utilities, including Recreation and Energy 3.13-1
3.13.1 Existing Conditions 3.13-1
3.13.2 Regulatory Framework 3.13-17
3.13.3 Environmental Impacts and Mitigation Measures 3.13-31
3.14 Transportation 3.14-1
3.14.1 Environmental Setting 3.14-1
3.14.2 Regulatory Framework 3.14-9
3.14.3 Environmental Impacts and Mitigation Measures 3.14-17

4 ALTERNATIVES 4-1
4.1 Selection of Alternatives 4-1
4.1.1 Ability of the Alternative to Attain Most Project Objectives 4-2
4.1.2 Feasibility of the Alternatives 4-2
4.1.3 Avoidance or Substantial Reduction of Significant Effects 4-3
4.2 Alternatives Considered but Rejected from Detailed Analysis in the EIR 4-3
4.2.1 Off-Site Alternative 4-3
4.2.2 Reduced Size Alternative 4-4
4.2.3 Development within the County 4-4
4.2.4 Agricultural Buffer 4-4
4.3 Alternatives Considered in Detail in the EIR 4-6
4.3.1 Alternative 1: No Project Alternative – Existing Land Use 4-7
4.3.2 Alternative 2: Revised Site Plan Alternative to Reduce Transportation, Noise, and Greenhouse Gas Emissions Impacts 4-8
4.3.3 Alternative 3: Revised Site Plan Alternative to Protect Existing Trees 4-11
4.4 Comparison of Alternatives 4-11
4.4.1 Aesthetics 4-11
4.4.2 Agricultural Resources 4-12
4.4.3 Air Quality 4-15
4.4.4 Biological Resources 4-16
4.4.5 Cultural Resources 4-16
4.4.6 Geology, Soils, Minerals, and Paleontological Resources 4-17
4.4.7 Greenhouse Gas Emissions 4-18
4.4.8 Hazards and Hazardous Materials 4-19
4.4.9 Hydrology and Water Quality 4-19
4.4.10 Land Use and Planning 4-20
4.4.11 Noise and Vibration 4-21
4.4.12 Population and Housing 4-22
4.4.13 Public Services, Including Recreation, Utilities, and Service Systems + Energy 4-23
4.4.14 Traffic 4-24
4.5 Environmentally Superior Alternative 4-25

5 OTHER CEQA CONSIDERATIONS 5-1
5.1 Cumulative Impacts 5-1
5.1.1 Methods of Analysis 5-2
5.1.2 Cumulative Context 5-2
5.1.3 Relevant Projects 5-4
5.1.4 Geographic Scope 5-6
5.1.5 Cumulative Impact Analysis 5-9
5.2 Growth-Inducing Impacts 5-34
5.2.1 Growth Inducing Impacts of the Project 5-34
5.3 Significant Irreversible Environmental Changes 5-35
5.4 Significant and Unavoidable Adverse Impacts 5-36

6 REFERENCES 6-1

7 LIST OF PREPARERS 7-1

Appendices

A Notice of Preparation and Responses to Notice of Preparation
B Air Quality and Greenhouse Gas Emissions Model Inputs and Outputs
C Cultural Resources
D Phase I Environmental Site Assessment
E Noise
F StanCOG RTP SCS EIR Summary of Impacts and Mitigation Measures
G Traffic Report

Exhibits

Exhibit 2-1	Vicinity Map	2-2
Exhibit 2-2	Location of Specific Plan Area	2-3
Exhibit 2-3	Specific Plan Area Parcels	2-4
Exhibit 2-4	City of Ceres 2035 General Plan Land Use	2-5
Exhibit 2-5	Proposed Specific Plan Land Use Designations	2-9
Exhibit 2-6	Conceptual Site Plan (Illustrative Only)	2-15
Exhibit 3.1-1	Views of the Specific Plan Area	3.1-3
Exhibit 3.2-1	Williamson Act Contract Land	3.2-4
Exhibit 3.2-2	Important Farmland	3.2-6
Exhibit 3.4-1	Habitat Map	3.4-2
Exhibit 3.4-2	Special-status Species Occurrences within 10 Miles of Specific Plan Area	3.4-5
Exhibit 3.5-1	Previously Completed Studies	3.5-7
Exhibit 3.6-1	Geologic Formations	3.6-2
Exhibit 3.7-1	2014 California GHG Emissions by Sector	3.7-3
Exhibit 3.8-1	Locations of Known Hazardous Materials	3.8-3
Exhibit 3.9-1	Existing Storm Drainage Facilities	3.9-7
Exhibit 3.9-2	Proposed Storm Drainage Facilities	3.9-26
Exhibit 3.10-1	StanCOG Regional Transportation Plan Preferred Alternative	3.10-3
Exhibit 3.11-1	Common Noise Sources and Levels	3.11-2
Exhibit 3.11-2	Ambient Noise Measurement Sites	3.11-9
Exhibit 3.11-3	Existing Traffic Noise Levels	3.11-10
Exhibit 3.11-4	Modesto City–County Airport Noise Contours	3.11-12
Exhibit 3.11-5	Existing Plus Project Traffic Noise Levels	3.11-34
Exhibit 3.12-1	StanCOG Regional Transportation Plan Preferred Alternative	3.12-4
Exhibit 3.13-1	Existing City Parks Near the Specific Plan Area	3.13-5
Exhibit 3.13-2	Existing Water Facilities	3.13-7
Exhibit 3.13-3	Existing Sanitary Sewer Facilities	3.13-13
Exhibit 3.13-4	Proposed Water Facilities	3.13-41
Exhibit 3.13-5	Proposed Sanitary Sewer Facilities	3.13-43
Exhibit 4-1	Zoning	4-5
Exhibit 4-2	Alternative 2	4-9
Exhibit 4-3	Alternative 3	4-13
Exhibit 5-1	Related Projects in the City of Ceres and Stanislaus County	5-7
Exhibit 5-2	Cumulative No Project Traffic Noise Levels	5-20
Exhibit 5-3	Cumulative plus Project Traffic Noise Levels	5-21

Tables

Table ES-1	Summary of Impacts and Mitigation Measures	ES-4
Table ES-2	Cumulative Impact Summary	ES-30
Table 2-1	Proposed Specific Plan Land Uses	2-11
Table 3.2-1	Summary of Agricultural Land Conversion in Stanislaus County	3.2-2
Table 3.2-2	Summary of the California Department of Conservation Land Use Categories in the City of Ceres Planning Area	3.2-3
Table 3.3-1	Ambient Air Quality Summary – Modesto – 14th Street Air Monitoring Station	3.3-5
Table 3.3-2	Summary of 2012 Estimated Emissions Inventory for Stanislaus County	3.3-6
Table 3.3-3	TAC Emissions in Stanislaus County and SJVAB	3.3-8
Table 3.3-4	Ambient Air Quality Standards and Designations	3.3-10
Table 3.3-5	Summary of SJVAPCD Air Quality Plans	3.3-15
Table 3.3-6	Thresholds of Significance for Criteria Pollutants	3.3-21
Table 3.3-7	Construction-Related Emissions	3.3-24
Table 3.3-8	Operational Emissions	3.3-28
Table 3.4-1	Habitat Types in the Specific Plan Area	3.4-3
Table 3.4-2	Special-Status Wildlife with Potential to Occur in the Specific Plan Area	3.4-8
Table 3.5-1	Previous Investigations within 0.25 Miles of Specific Plan Area	3.5-8
Table 3.5-2	Built Environment Resources within the Specific Plan Area	3.5-9
Table 3.6-1	Active Regional Faults	3.6-4
Table 3.7-1	Statewide Efficiency Target – Land Use-Related Emissions and Employment	3.7-12
Table 3.7-2	Unmitigated Construction-Related and Operational GHG Emissions	3.7-15
Table 3.9-1	Section 303(d)-Listed Pollutants for the Lower Tuolumne River	3.9-5
Table 3.10-1	Stanislaus County General Plan Consistency Analysis	3.10-6
Table 3.10-2	City of Ceres General Plan Consistency Analysis	3.10-7
Table 3.11-1	Summary of Ambient Noise Level Survey Results – September 12 – 14, 2016	3.11-8
Table 3.11-2	Traffic Noise Contours – Existing Conditions	3.11-11
Table 3.11-3	State of California Land Use Noise Compatibility Guidelines	3.11-15
Table 3.11-4	Maximum Allowable Noise Exposure for Transportation Noise Sources	3.11-19
Table 3.11-5	Performance Standards for Stationary Noise Sources	3.11-19
Table 3.11-6	Typical Construction Equipment Noise Levels	3.11-28
Table 3.11-7	Traffic Noise Contours – Existing Traffic Plus Construction Traffic	3.11-30
Table 3.11-8	Traffic Noise Contours – Existing and Existing Plus Specific Plan	3.11-33
Table 3.11-9	Representative Vibration Source Levels for Construction Equipment	3.11-39
Table 3.12-1	Housing Structures by Unit Type	3.12-2
Table 3.12-2	Housing Structure Age	3.12-2
Table 3.12-3	Proposed Specific Plan Land Uses	3.12-6
Table 3.13-1	Ceres Unified School District Enrollment, 2015–2016	3.13-4
Table 3.13-2	Estimate of Crop Water Usage within the Specific Plan Area	3.13-9
Table 3.13-3	Actual and Project Water Demand, 2015–2035	3.13-9

Table 3.13-4	Comparison of Water Supply and Demand, 2015–2035	3.13-10
Table 3.13-5	PG&E Service Area Average Natural Gas Consumption and Forecast	3.13-16
Table 3.13-6	Existing and Projected Transportation-Related Energy Consumption in Stanislaus County (2012 to 2040)	3.13-17
Table 3.13-7	Student-Yield Generation Rates for the Ceres Unified School District	3.13-36
Table 3.13-8	Whitmore Ranch Specific Plan Water Demands	3.13-39
Table 3.13-9	Whitmore Ranch Specific Plan Wastewater Generation	3.13-44
Table 3.13-10	Whitmore Ranch Specific Plan Annual Fuel Consumption and Energy Demand for Proposed Project Construction	3.13-47
Table 3.13-11	Whitmore Ranch Specific Plan Annual Electricity and Natural Gas Demand	3.13-48
Table 3.13-12	Whitmore Ranch Specific Plan Annual Fuel Consumption and Energy Demand for Proposed Project Mobile Operations	3.13-49
Table 3.13-13	Summary of Whitmore Ranch Specific Plan Annual Energy Requirements	3.13-50
Table 3.14-1	Study Area Roadway Segments and Intersections	3.14-2
Table 3.14-2	Roadway Segment Operations – Existing Conditions	3.14-5
Table 3.14-3	Peak-Hour Intersection Level of Service – Existing Conditions	3.14-6
Table 3.14-4	Roadway Segment Operations – Existing plus Project Conditions	3.14-20
Table 3.14-5	Intersection Operations – Existing plus Project & Mitigated Existing Plus Specific Plan Conditions	3.14-22
Table 3.14-6	Roadway Segment Operations – Existing plus Approved Projects Conditions	3.14-24
Table 3.14-7	Intersection Operations – Existing plus Approved Projects & Mitigated Existing plus Approved Projects Conditions	3.14-25
Table 4.3-1	Proposed Project and Alternatives Summary	4-7
Table 4.4-1	Alternative 2 Estimated Population	4-22
Table 4.4-2	Alternative 3 Estimated Population	4-22
Table 4.5-1	Comparison of Significant Environmental Effects of the Alternatives to the Proposed Project	4-25
Table 5-1	Related Projects in the City of Ceres and Stanislaus County	5-5
Table 5-2	Geographic Scope of Cumulative Impacts	5-9
Table 5-3	Predicted Traffic Noise Levels, Cumulative Conditions	5-22
Table 5-4	Intersection Level of Service: 2040 No-Project and 2040 plus Project Conditions	5-31
Table 5-5	Mitigated Intersection Level of Service: 2040 No-Project and 2040 plus Project Conditions	5-33

ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
µg/m^3	micrograms per cubic meter
µin/sec	micro-inch per second
µPa	micropascals
10 µm	particles less than 10 microns in diameter
2014 RTP/SCS	*Stanislaus County 2014 Regional Transportation Plan/Sustainable Communities Strategy*
A-2-10	General Agriculture with a 10-acre minimum lot size
AADT	Annual Average Daily Traffic
AB	Assembly Bill
AB 32	Assembly Bill 32, The Global Warming Solutions Act of 2006
ACMs	asbestos-containing materials
ACS	American Community Survey
ADT	average daily trips
afy	acre-feet per year
AIA	Air Impact Assessment
AIA	Airport Influence Area
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUC	airport land use commission
ALUCP	Airport Land Use Commission Plan
ANSI	American National Standards Institute
APCO	Air Pollution Control Officer
AQAPs	Air Quality Attainment Plans
AQMPs	Air Quality Management Plans
ARB	California Air Resources Board
ASA	Acoustical Society of America
B.P.	Before Present
BAAQMD	Bay Area Air Quality Management District
Baseline	Existing plus Approved Projects Plus Whitmore Ranch Specific Plan Conditions
Basin Plan	*Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*
BAU	business as usual
BMP	best management practice
Business Plan Act	California Hazardous Materials Release Response Plans and Inventory Law of 1985
CAA	Clean Air Act
CAA	federal Clean Air Act
CAAA	federal Clean Air Act Amendments of 1990
CAAQS	California ambient air quality standards

Cal EMA	California Emergency Management Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/EPA	California Environmental Protection Agency
CalARP	California Accidental Release Prevention Program
CalEEMod	California Emissions Estimator Model
CalEMA	California Emergency Management Agency
CALGreen Code	California Green Building Standards Code
CalRecycle	California Integrated Waste Management Board
Caltrans	California Department of Transportation
CALVENO	California Vehicle Noise
CAT	Ceres Area Transit
CBC	California Building Code
CBIA	California Building Industry Association
CCAA	California Clean Air Act
CCAP	climate change action plan
CCAR	California Climate Action Registry
CCIC	Central California Information Center
CCR	California Code of Regulations
CDAR	Ceres Dial-A-Ride
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CEQA Guidelines	California Environmental Quality Act Guidelines
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
cfs	cubic foot per second
CGS	California Geological Survey
CH_4	Methane
CHHSLs	California Human Health Screening Levels
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
City	City of Ceres
City General Plan	City of Ceres General Plan
CIWMA	California Integrated Waste Management Act
CLUP	comprehensive land use plan
CNDDB	California Natural Diversity Database

CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSSA	Ceres Sewer Service Area
CUPA	Certified Unified Program Agency
CUSD	Ceres Unified School District
CWA	Clean Water Act
dB	decibel
dBA	A-weighted sound levels
DBE	Design Basis Earthquake
DDT	dichlorodiphenyltrichloroethane
DER	Stanislaus County Department of Environmental Resources
diesel PM	diesel-fueled engines
DOF	California Department of Finance
DPH	California Department of Public Health
Dry Cleaning ATCM	Airborne Toxic Control Measure for Emissions of Perchloroethylene from Dry Cleaning Operations
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EDD	Employee Development Department
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EPA	United States Environmental Protection Agency
EPAP	Existing plus Approved Projects
ESA	Federal Endangered Species Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FHWA-RD-77-108	Federal Emergency Management Agency's Highway Noise Prediction Model
FTA	Federal Transit Administration
GAMAQI	Guide for Assessing and Mitigating Air Quality Impact
GHG	greenhouse gas
GLO	General Land Office

gpm	gallons per minute
Greenbook Manual	PG&E's *Electrical & Gas Service Requirements*
GWh	gigawatt hours
GWP	Global warming potential
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HDR	Higher-Density Residential
HRA	health risk assessment
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
Hz	hertz
I-5	Interstate 5
in/sec	inches per second
IOUs	investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change
ISO	Insurance Services Office
ISR	Indirect Source Review
ITE	Institute of Transportation Engineers
JPAs	joint powers agreements
kWh	kilowatt-hours
LAFCo	Local Agency Formation Commission
LCFS	Low Carbon Fuel Standard
LDL	Larson Davis Laboratories
L_{dn}	Day-Night Average Noise Level
LDR	Low-Density Residential
LEAs	local enforcement agencies
L_{eq}	Equivalent Noise Level
L_{eq}[h]	1-hour, A-weighted equivalent sound level
LID	Low Impact Development
L_{max}	Maximum Noise Level
L_n	Statistical Descriptor
LOS	levels of service
LRA	Local Responsibility Area
LTA	Local Transportation Authority
MACT	maximum achievable control technology
MAX	Modesto Area Express
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MDR	Medium-Density Residential
MEI	maximally exposed individual

MEP	maximum extent practicable
mgd	million gallons per day
MID	Modesto Irrigation District
MM therms	million therms
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4s	Municipal Separate Storm Sewer Systems
$MTCO_2e$	metric tons of carbon dioxide equivalents
MUN	Municipal and domestic supply
MW	megawatt
N_2O	Nitrous Oxide
NAAQS	National ambient air quality standards
NCSSA	North Ceres Sewer Service Area
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NOC	notice of completion
NOI	notices of intent
NOP	notice of preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
OPR	California Governor's Office of Planning and Research
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
PC	Planned Community
PCBs	polychlorinated biphenyls
PEA	Preliminary Environmental Assessment
PFF	Public Facilities Fee
PG&E	Pacific Gas and Electric Company
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$	respirable particulate matter with an aerodynamic diameter of 2.5 microns or less

Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
POTW	Publicly Owned Treatment Works
ppd	pounds per day
PPV	peak particle velocity
PRC	California Public Resources Code
RACT SIP	Reasonably Available Control Technology – State Implementation Plan
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Reporting Rule	Final Mandatory Greenhouse Gas Reporting Rule
RFS	Renewable Fuel Standard
RHNA	Regional Housing Needs Allocation
RMS	root-mean-square
ROG	reactive organic gases
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
Rule 9510	Indirect Source Review Rule
RWDs	reports of waste discharge
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments'
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SB 32	Senate Bill 32, Health and Safety Code Section 38566
Scoping Plan	Climate Change Scoping Plan
SCS	Sustainable Communities Strategy
SEL	Sound Exposure Level
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	state implementation plan
SJAPCD	San Joaquin Air Pollution Control District
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVUAPCD	San Joaquin Valley Unified Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	State of California's Surface Mining and Reclamation Act of 1975
SO_2	Sulfur dioxide
Specific Plan	Whitmore Ranch Specific Plan
SR	State Route
SR 99	State Route 99
SRWA	Stanislaus Regional Water Authority

SSMP	Sewer System Master Plan
StanCOG	Stanislaus Council of Governments
StaRT	Stanislaus Regional Transit
State CEQA Guidelines	California Environmental Quality Act Guidelines
Superfund Act	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
SWPPP	specific stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
T-BACT	best available control technology for Toxic Air Contaminants
TCRs	Transportation Concept Reports
TDM	Transportation Demand Management
TDS	total dissolved solids
TGBA	Turlock Groundwater Basin Association
TID	Turlock Irrigation District
TMDL	total maximum daily load
tpd	tons per day
TPH	total petroleum hydrocarbons
TPY	tons per year
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UPRR	Union Pacific Railroad
US 99	U.S. Route 99
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VdB	vibration level
VDE	visible dust emissions
VMT	vehicle miles traveled
vpd	vehicles per day
WDRs	waste discharge requirements
WRCC	Western Regional Climate Center
WTE	waste-to-energy
WWTP	Wastewater Treatment Plant
ZEV	zero emission vehicles

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Environmental Impact Report (EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to inform decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the *Whitmore Ranch Specific Plan* (Specific Plan), also referred to in this EIR as "the proposed project." This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, *et seq.*) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, *et seq.*).

ES.2 PROJECT SUMMARY

Following is a summary of the context and setting of the proposed project, along with a project description.

ES.2.1 PROJECT SETTING

The Specific Plan Area encompasses approximately 94 acres of land area bounded by Whitmore Avenue on the north, Moore Road on the west, and the east side of La Rosa Elementary School on the east. The southern limit of the Specific Plan Area is approximately 1,300 feet south of Whitmore Avenue. The Specific Plan Area is entirely within the City of Ceres Primary Sphere of Influence and within the City of Ceres Planning Area.

The Specific Plan Area currently accommodates agricultural uses, housing, and schools. The site has almond orchards in the southwestern and northeastern corners and alfalfa, oats, and rye hay in the central portion. Some portions are fallow or not currently under production. The Ceres Unified School District operates two schools within the Specific Plan Area: Ceres Chavez Junior High School and La Rosa Elementary School. There are existing single-family homes within the Specific Plan Area on lots of between approximately ½ acre and 2 acres in land area.

ES.2.2 PROJECT DESCRIPTION

The Whitmore Ranch Specific Plan is included on the Ceres 2035 General Plan Land Use Diagram. Th Ceres 2035 General Plan guidance was used to develop land use designations for the proposed Specific Plan. Specific Plan designations are consistent with the Ceres 2035 General Plan.

The Specific Plan will provide for a range of densities and housing types, parkland and other open space, existing schools, and supportive infrastructure on approximately 94 acres of land. Future development proposals will be implemented according to the development standards and design guidelines included in the Specific Plan.

The proposed Specific Plan Land Use Diagram provides approximately 28 acres for Low-Density Residential, 6.6 acres for Medium-Density Residential, and 6.4 acres for High-Density Residential. The Specific Plan, once fully developed, could provide opportunities for as many as 441 new dwelling units. This total number of dwelling units and the number of units for each land use designation are *assumptions* used for the purposes of analysis, and not a regulatory aspect of the Specific Plan.

Approximately 36 acres has the School land use designation and approximately 5.2 acres is designated Parks/Open Space. Streets and associated public rights-of-way would require approximately 12.2 acres of land area.

The Specific Plan transportation network will provide access and mobility for pedestrians, bicyclists, and motorists, along with future opportunities for planned transit extensions. Currently, Eastgate Boulevard is the only road in the Specific Plan Area. However, planned improvements would include pedestrian and bicycle facilities along Whitmore Avenue and Moore Road, as well as through the central open space feature of the Specific Plan Area. Specific Plan improvements along Whitmore Avenue will be coordinated with a Safe Routes to School project planned south of Whitmore Avenue between Moore Road and the existing schools.

The Specific Plan provides for multi-modal extensions of Lunar Drive and Boothe Road through the Specific Plan Area, as well as a new facility along the southern boundary of the Specific Plan Area (Stanford Avenue). To provide connectivity and access, several additional internal pedestrian, bicycle, and vehicular facilities would be installed within the Specific Plan Area, consistent with City design standards and Specific Plan guidance. The Specific Plan also includes improvements to circulation that will benefit the Ceres Chavez Junior High School and La Rosa Elementary School.

ES.3 PROJECT OBJECTIVES

Under State law, Specific Plans must be consistent with the relevant jurisdiction's general plan. As such, the Whitmore Ranch Specific Plan will be consistent with, and implement, the Ceres 2035 General Plan. This EIR includes reference to relevant Ceres 2035 General Plan goals, policies, standards, and implementation programs that will guide the City's review of this Specific Plan and other entitlements required to fully implement the Specific Plan.

Key objectives for the proposed project are:

- Promote a distinct, identifiable neighborhood that integrates a variety of housing types;
- Encourage walking, bicycling, and transit use by Specific Plan Area residents, and provide bicycle and pedestrian connectivity throughout the Specific Plan Area and to adjacent bicycle and pedestrian facilities;
- Provide safe bicycle and pedestrian connections to and from the two schools within the Specific Plan Area;
- Ensure appropriate access and connectivity between the Specific Plan Area and existing developed areas, as well as areas planned for future development;
- Incorporate best practices and conservation measures into the design and provision of sewer, water, storm drainage, parks and open space, and other public improvements necessary to serve future development of the Specific Plan Area; and
- Develop a Specific Plan that would facilitate annexation of the existing Cesar Chavez Junior High School and La Rosa Elementary School.

ES.4 PERMITS AND OTHER APPROVALS

Implementation of the Specific Plan will require approval by the Ceres City Council. The City will also be required to certify the EIR. Because the Specific Plan was included as part of the Ceres 2035 General Plan, a General Plan Amendment is not required to implement the proposed project. However, the City will need to approve pre-zoning for the Specific Plan Area based on Specific Plan land use designations in order to support annexation application/s to the Stanislaus Local Agency Formation Commission.

Implementation of the Specific Plan will also require a variety of other City approvals that could include, but are not necessarily limited to the approval of development plans, subdivision map/s, grading permit/s, encroachment permits, and building permits (with appropriate permit conditions).

Other permitting agencies with permitting approval or review authority over portions of the Specific Plan and projects developed under the Specific Plan may include, but are not necessarily limited to:

- San Joaquin Valley Air Pollution Control District authority to construct (for devices that emit air pollutants) and review for applicability of projects with the Indirect Source Review Rule (Rule 9510).
- Turlock Irrigation District: approval of application for electrical service.
- Pacific Gas & Electric: approval of application for gas service.
- Stanislaus Local Agency Formation Commission: approval of annexation/s and other service area boundary changes.
- Central Valley Regional Water Quality Control Board (Region 5): National Pollutant Discharge Elimination System construction stormwater permit (notice of intent to proceed under general construction permit), discharge permit for stormwater, and potentially other approvals for future development projects within the Specific Plan Area.

ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview. Narrative discussions for the issue areas are included in the corresponding section of this EIR.

Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.1. Aesthetics			
3.1-1 Degrade the existing visual character of the project site or impact scenic vistas.	LTS	None required	LTS
3.1-2 Increase in Nighttime and Daytime Lighting, Glare, and Skyglow Effects.	LTS	None required	LTS
3.2. Agriculture			
3.2-1 Loss of Important Farmland and Conversion of Agricultural Land to Nonagricultural Urban Uses.	S	**3.2-1: Mitigate Loss of Important Farmland.** Prior to the approval of improvement plans, building permits, or recordation of the final map, project applicants for projects in the Specific Plan Area shall offset the loss of Prime Farmland. This shall be done in coordination with the City, through the acquisition of conservation easements in Stanislaus County at a 1:1 ratio (i.e., 1 acre on which easements are acquired to 1 acre of Prime Farmland removed from agricultural use) that provide in-kind or similar resource value protection; payment of in-lieu fees to an established, qualified, mitigation program to fully fund the acquisition and maintenance of agricultural land or easements; or compliance with the City's Plan for Agricultural Preservation, as adopted by Stanislaus LAFCO in accordance with LAFCO Policy 22.	SU
3.2-2 Conflict with Existing On-Site and Off-Site Agricultural Operations.	PS	**3.2-2: Provide the County's Right-to-Farm Notice to Prospective Residents Adjacent to Active Agricultural Uses.** Project applicant(s) for residential uses within the Specific Plan Area shall provide Stanislaus County's Right-to-Farm Notice (Section 9.32.050, in Chapter 9.32 of the Stanislaus County Municipal Code) to all prospective homebuyers within 150 feet of the southern Specific Plan Area boundary. The Right-to-Farm Notice shall be included in all residential deeds at the time of sale. The Right-to-Farm Notice shall contain, and be substantially in the form of the following (Section 9.32.050[F]): "The County of Stanislaus recognizes and supports the right to farm agricultural lands in a manner consistent with accepted customs and standards. Residents of property on or near agricultural land should be prepared to accept the inconveniences or discomforts associated with agricultural operations, including but not limited to noise, odors, flies, fumes, dust, the operation of machinery of any kind during any 24-hour period (including aircraft), the storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. Stanislaus County has determined that inconveniences or discomforts associated with such agricultural operations shall not be considered to be a nuisance if such operations are consistent with accepted customs and standards. Stanislaus County has established a grievance committee to	SU

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		assist in the resolution of any disputes which might arise between residents of this County regarding agricultural operations. If you have any questions concerning this policy or the grievance committee, please contact the Stanislaus County Department of Planning and Community Development."	
3.3. Air Quality			
3.3-1 Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors.	LTS	None required	LTS
3.3-2 Generation of Long-Term Operational Emissions of Criteria Air Pollutants and Precursors.	LTS	None required	LTS
3.3-3 Exposure of sensitive receptors to emissions of toxic air contaminants.	PS	**3.3-3: Use Current Phase Equipment for All Construction Equipment.** Site developers/leaseholders/project applicants who wish to develop facilities in the Specific Plan Area shall construct all facilities using current phase construction equipment (currently Tier 4) to reduce exposure of sensitive receptors to any toxic air contaminants.	LTS
3.3-4 Exposure of sensitive receptors to emissions of odors.	LTS	None required	LTS
3.4. Biological Resources			
3.4-1 Swainson's Hawk, Other Nesting Raptors, and Burrowing Owl	PS	**3.4-1a: Avoid Direct Loss of Swainson's Hawk and Other Raptors.** Tree removal shall be completed during the nonbreeding season for raptors (between September 1 and the end of February). To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors (not including burrowing owl) nesting on or adjacent to the project site, the project applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site for construction activities conducted during the breeding season (between March 1 and August 31). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined in coordination with CDFW the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances. Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.	
		3.4-1b: Avoid Direct Loss of Burrowing Owl. To avoid, minimize, and mitigate potential impacts on burrowing owl, the project applicant shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to CDFW and no further mitigation will be required. If an active burrow is found during the nonbreeding season (between September 1 and January 31), the project applicant will consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan will be developed in consultation with CDFW and in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012). Owls will be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls will be excluded from	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW. If an active burrow is found during the breeding season (between February 1 and August 31), occupied burrows will not be disturbed and will be provided with a 150- to 1,500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150 and 1,500 feet) will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012:9). Once the fledglings are capable of independent survival, the owls will be relocated outside the impact area following a burrowing owl exclusion and relocation plan developed in consultation with CDFW and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction. If active burrowing owl nests are found on the project site and these nest sites are lost as a result of implementing the project, then the project applicant shall mitigate the loss through preservation of other known nest sites at a ratio of 1:1. Preservation shall be provided through purchase of credits from a CDFW-approved burrowing owl conservation bank if credits are available in an appropriate location. If mitigation credits are not available, the applicant shall develop a mitigation and monitoring plan for the compensatory mitigation areas in consultation with CDFW. The mitigation and monitoring plan will include detailed information on the habitats present within the preservation areas, the long-term management and monitoring of these habitats, legal protection for the preservation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). All burrowing owl mitigation lands shall be preserved in perpetuity and incompatible land uses shall be prohibited in habitat conservation areas. Burrowing owl mitigation lands shall be located as close as possible, based on availability of sufficient suitable habitat, to the project site. The project applicants shall transfer said burrowing owl mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the	

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW. The City, after consultation with CDFW and the Conservation Operator, shall approve the content and form of the conservation easement. The City, CDFW, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to ensure compliance with the terms of the easement.	
		3.4-1c: Prepare and Implement a Swainson's Hawk Foraging Habitat Mitigation Plan. Before any ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with CDFW. The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the County. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within 1 mile of the project site, 0.75:1 if there is an active nest within 5 miles but greater than 1 mile away, and 0.5:1 if there is an active nest within 10 miles but greater than 5 miles away. If there is an active nest within 1 mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area of the regional Swainson's hawk population based on the habitat assessment described above. Before acceptance of such proposed mitigation, the City shall consult with CDFW regarding the appropriateness of the mitigation. If mitigation is accomplished through a conservation easement, then such an easement shall ensure the continued management of the land to maintain Swainson's hawk foraging values, including but not limited to, ongoing agricultural uses and the maintenance of all existing water rights associated with the land. The conservation easement shall be recordable and shall prohibit any activity that substantially impairs or diminishes the land's capacity as suitable Swainson's hawk foraging habitat. Purchase of credits from a CDFW-approved Swainson's hawk mitigation bank may be used as an alternative to conservation easements to compensate for foraging	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		habitat lost as a result of the project. The mitigation bank must be located within the range of the regional Swainson's hawk population. Before purchase of mitigation credits from the mitigation bank, the City shall consult with CDFW to confirm that the proposed mitigation bank provides appropriate foraging habitat relative to the proximity to the project site and quality of habitat. Swainson's hawk mitigation land shall be transferred, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a). CDFW and the Conservation Operator shall approve the content and form of the conservation easement. CDFW and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.	
3.4-2 Disturbance of Loggerhead Shrike and Common Nesting Birds	PS	**3.4-2: Avoid Direct Loss of Loggerhead Shrike and Protected Bird Nests.** To the extent feasible, City shall encourage vegetation removal, grading, and other ground disturbing activities to be carried out during the nonbreeding season (between September 1 and January 31) for protected bird species in this region to avoid and minimize impacts to loggerhead shrike and other nesting birds. For any project activity that would occur during the nesting season (between February 1 and August 31), the project applicant shall conduct a preconstruction survey. The preconstruction survey shall be conducted by a qualified biologist before any activity occurring within 500 feet of suitable nesting habitat for any protected bird species. The survey shall be timed to maximize the potential to detect nesting birds, and should be repeated within 10 days of the start of project-related activity. If an active loggerhead shrike or common bird species protected by the Migratory Bird Treaty Act or California Fish and Game Code is found, the qualified biologist shall establish a buffer around the nest. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 50 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances as determined by a qualified biologist in consultation with CDFW.	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		If common bird nests are found, a qualified biologist shall ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code Section 3503. Monitoring of all protected nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.	
3.4.3 Western Red Bat	PS	**3.4-3: Avoid, Minimize, and Mitigate Loss of Western Red Bat Roosts.** If any trees are proposed for removal during the breeding season (May through August), a qualified biologist shall be retained to conduct a focused survey for red bats in roosting trees proposed for removal. An evening emergence survey shall note the presence or absence of bats and could consist of visual survey at the time of emergence. If evidence of red bat use is observed, the location of the trees used by the bats shall be determined. Bat detectors may be used to supplement survey efforts, but are not required. If no bat roosts are found, then no further study is required. If red bats are determined to be present in trees in the project area, the tree shall be protected until breeding is completed and the young are capable of independent flight. If a tree supporting a red bat must be removed, a detailed mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed, in consultation with CDFW, before implementation.	LTS
3.4.4 Conflicts with Policies Protecting Biological Resources	PS	**Implement Mitigation Measures 3.4-1, 3.4-2, and 3.4-3.**	LTS
3.4.5 Impede the Use of Native Wildlife Nursery Sites	PS	**3.4-5: Avoid, Minimize, and Mitigate Loss of Bat Roosts.** Before removal of any trees or existing buildings, a qualified biologist shall conduct a focused survey for roosting bats in suitable trees and structures. Surveys should be conducted as far in advance of project implementation as feasible to allow sufficient time to coordinate with CDFW and develop a mitigation plan if necessary, as described below. The survey shall be conducted in the fall to determine if structures are used as hibernacula and in spring and/or summer to determine if they are used as maternity or day roosts. An evening emergence survey shall note the presence or absence of bats and could consist of visual survey at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts, but are not	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		required. If no bat roosts are found, then no further study is required. If bat roosts are determined to be present, the bats shall be excluded from the roosting site before the roost structure is removed. If roosts must be removed, a detailed mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed, in consultation with CDFW, before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts will be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Compensatory mitigation for the loss of each roost (if any) shall be developed, in consultation with CDFW, and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost site. Once compensation is implemented and it is confirmed that bats are not present in the roost site, the roost structure may be removed.	
3.5. Cultural Resources			
3.5-1 Potential to cause a substantial adverse change in the significance of an historical resource or unique archaeological resource as defined in Public Resources Code Section 21083.2 and CEQA Guidelines Section 15064.5.	PS	**3.5-1: Implement Procedures to Avoid or Reduce Impacts on Cultural Resources.** In the event that any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil (“midden”), that could conceal cultural deposits, are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted and the City of Ceres shall be notified. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), representatives of the City and the qualified archaeologist shall determine the appropriate course of action, with the City making the final decision. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards. If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code Section 5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		pursuant to California Public Resources Code Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (California Public Resources Code Section 5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts on it, including any or a combination of the following: ▸ avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization. If such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements; ▸ an agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or ▸ Other measures, short of full or partial avoidance or preservation, intended to minimize impacts on the Native American Cultural Place consistent with the proposed design and footprint of the development project for which the requested grading permit has been approved. ▸ After receiving such recommendations, the City shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development project. The City shall, in reaching conclusions with respect to these recommendations, consult with both the project applicant(s) and the most appropriate and interested tribal organization. In addition, projects proposed under the Specific Plan shall comply with Ceres 2035 General Plan Policies 4.I.1, which states that the City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix G of the CEQA Guidelines. Mitigation shall include avoidance of cultural resources where possible and feasible.	
3.5-2 Potential Disturbance of and Damage to Human Remains during Project Construction.	PS	**3.5-2a: Implement Mitigation Measure 3.5-1.** **3.5-2b: Halt Construction if Human Remains are Discovered and Implement Appropriate Actions.** If human remains are discovered at any construction sites during any phase of construction, all ground-disturbing activity within 100 feet of the remains shall be	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		halted immediately, and the City of Ceres and the County coroner shall be notified immediately. If the remains are determined by the County Coroner to be Native American, Native American Heritage Commission shall be notified within 24 hours, and the guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains. The project applicant(s) shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the Native American Heritage Commission. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of CEQA Guidelines Section 15064.5(e) and Public Resources Code section 5097.98. The project applicant(s) shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 100 feet of where the remains were discovered.	
3.5-3 Substantial Adverse Change to a Tribal Cultural Resource.	NI	None required	NI
3.6. Geology, Soils, Minerals, and Paleontological Resources			
3.6-1 Risks to People and Structures Caused by Strong Seismic Ground Shaking	PS	**3.6-1: Prepare a Geotechnical Report per California Building Code (CBC) Requirements and Implement Appropriate Recommendations and Monitor Earthwork During Ground-Disturbing Activities.** Before building permits are issued and construction activities begin, a California Registered Civil Engineer shall be retained to prepare a final geotechnical subsurface investigation report, which shall be submitted to the City's Engineering Division for review and approval. The final geotechnical engineering report shall address and make recommendations on the following, as applicable: ▸ Site preparation; ▸ Soil bearing capacity; ▸ Appropriate sources and types of fill; ▸ Potential need for soil amendments; ▸ Road, pavement, and parking areas; ▸ Structural foundations, including retaining-wall design; ▸ Grading practices; ▸ Soil corrosion of concrete and steel;	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		▸ Erosion/winterization; ▸ Seismic ground shaking; and ▸ Unstable soils. In addition to the recommendations for the conditions listed above, the geotechnical investigation shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time of application for building and grading permits. Special recommendations contained in the geotechnical engineering report shall be noted on the grading and improvement plans and implemented, as appropriate, before construction begins. Design and construction of all new project development shall be in accordance with the CBC. All earthwork shall be monitored by a qualified civil or geotechnical engineer to ensure compliance with project plans and specifications. The geotechnical or civil engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on the construction areas.	
3.6-2 Risks to People and Structures Caused by Seismically-Induced Liquefaction and Lateral Spreading	LTS	None required	LTS
3.6-3 Construction-Related Soil Erosion.	PS	**3.6-3a: Prepare and Implement a Grading and Erosion Control Plan.** Before grading permits are issued or earthmoving activities are conducted, a California Registered Civil Engineer shall be retained to prepare a grading and erosion control plan. The plan shall be submitted to the City Engineering Division for review and approval. The plan shall be consistent with the State's NPDES permit and shall include the site-specific grading. The plan referenced above shall include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.	LTS

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		3.6-3b: Implement Mitigation Measure 3.9-1c (Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices).	
3.6-4 Potential Damage to Structures and Infrastructure from Construction in Unstable or Expansive Soils.	PS	**3.6-4: Implement Mitigation Measure 3.6-1 (Prepare a Geotechnical Report per California Building Code (CBC) Requirements and Implement Appropriate Recommendations and Monitor Earthwork During Ground-Disturbing Activities).**	LTS
3.6-5 Potential Damage to Unknown, Unique Paleontological Resources during Earthmoving Activities	PS	**3.6-5: Conduct Construction Worker Personnel Education and Stop Work if Paleontological Resources are Encountered.** ▸ Before the start of any earthmoving activities for the project, the project applicant shall retain the services of a qualified archaeologist or paleontologist to inform the construction crew, including the site superintendent, about the possibility of encountering subsurface fossils and notification procedures should fossils be encountered. ▸ If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work that may affect the identified resource and notify the City of Ceres Building and Planning Department. The project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1995). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, coordination of museum storage for any specimen recovered, and a report of findings. The recovery plan shall be submitted to the City for review. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented before construction activities affecting the resource can resume at the site where the paleontological resources were discovered.	LTS
3.7. Greenhouse Gas Emissions			
3.7-1 Contribution to significant climate change cumulative impact.	CC	**3.7-1a: Reduce Construction-Related GHG Emissions.** The contractor(s) for projects proposed within the Specific Plan Area shall use electric and renewable fuel powered construction equipment and require renewable diesel fuel, where commercially available, and shall require construction vehicles to operate with the highest tier engines commercially available.	SU

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Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		3.7-1b: Reduce Operational GHG Emissions. The following mitigation measures shall be implemented to reduce GHG emissions to an emissions rate per service population that would be consistent with the emissions rate for land use-related emissions needed to achieve the State's emission targets for 2030 (Executive B-30-15 and SB 32) and 2050 (Executive Order S-3-05): ▸ Projects proposed under the Specific Plan shall be consistent with the allowable densities and land uses specified in the Specific Plan and in the EIR Project description. ▸ Provide safe and convenient pedestrian and bicycle connections to the Central Park Blocks, to schools within the Specific Plan Area, and to existing and planned pedestrian/bicycle facilities along Whitmore Avenue and Moore Road, which connect to destinations in the vicinity of the Specific Plan Area. ▸ When project applications for projects located in the Specific Plan Area are deemed complete by the City, the City will communicate with Stanislaus Regional Transit and Ceres Area Transit to determine whether the Specific Plan Area can accommodate an extension of transit and whether an additional bus stop should be provided on the south side of Whitmore Avenue. If the City determines that a bus stop should be provided, projects shall be designed, as applicable, to accommodate the provision of a bus stop, a turnout, a bus shelter, bench, route information, and other appropriate amenities identified by the City, including shade, lighting, and trash receptacles. ▸ Provide EV-ready parking spaces with electric vehicle charging stations for at least 3% of the parking spaces provided in the HDR-designated area. ▸ Projects may propose alternative mitigation strategies to those listed above that are determined by the City to achieve a GHG emissions to an emissions rate per service population that would be consistent with the emissions rate for land use-related emissions needed to achieve the State's emission targets for 2030 (SB 32) and 2050 (Executive Order S-3-05). One alternative to accomplish this performance standard could be, for the life of the project, to participate in TID's B-Green Energy Program, which is a renewable energy program providing credits that are in excess of the legislatively mandated renewable portfolio standard. As an alternative, if the City has developed a greenhouse gas reduction program consistent with CEQA Guidelines Section 15183.5, projects proposed under the Specific Plan may demonstrate consistency with the City's greenhouse gas reduction program as alternative to implementing the mitigation measures listed above.	SU

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Table ES-1. Summary of Impacts and Mitigation Measures

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3.8. Hazards and Hazardous Materials			
3.8-1 Routine Transport, Use, or Disposal of Hazardous Materials.	LTS	None required	LTS
3.8-2 Potential Human Health Hazards from Exposure to Existing On-Site Hazardous Material.	PS	**3.8-2: Retain a Licensed Professional to Investigate Known or Unknown Hazards and Hazardous Materials and Implement Required Measures, as Necessary.** To reduce health hazards associated with potential exposure to hazardous substances, the project applicant and/or construction contractor(s) shall implement the following measures before the start of ground-disturbing activities within each phase of project development: ▸ Prepare a Phase I ESA covering all areas prior to development. If recommended by the Phase I(s), a Phase II ESA investigation is also required. ▸ If, during site preparation and construction activities, evidence of hazardous materials contamination is observed or suspected (e.g., stained or odorous soil or groundwater), construction activities shall cease immediately in the area of the find. If such contamination is observed or suspected, the contractor shall retain a qualified hazardous materials specialist to assess the site and collect and analyze soil and/or water samples, as necessary. If contaminants are identified in the samples, the contractor shall notify and consult with the appropriate federal, state, and/or local agencies. Measures to remediate contamination and protect worker health and the environment shall be implemented in accordance with federal, State, and local regulations before construction activities may resume at the site where contamination is encountered. ▸ Retain a licensed contractor to remove all domestic and irrigation wells in accordance with applicable local, State, and federal regulations, including the City of Ceres Municipal Code Chapter 13.05. ▸ Abandon all septic tanks on the project site under permit from the Stanislaus County Department of Environmental Resources. ▸ Prepare a Limited Phase II ESA to determine the presence and extent of any residual herbicides, pesticides, termiticides, and fumigants on historically-farmed land in agricultural areas that would be disturbed during construction of the proposed project. The soil sampling and analysis shall be conducted by a qualified Phase II Environmental Assessor. The Limited Phase II ESA shall document the areas proposed for sampling; the procedures for sample collection; the laboratory analytical methods to be used; and the pertinent regulatory threshold levels for determining proper excavation, handling, and, if necessary, treatment, or disposal	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		of any contaminated soils. The Limited Phase II ESA shall be submitted to the City of Ceres for review and approval before the start of ground-disturbing activities. If samples reveal concentrations of pesticide residue in excess of acceptable thresholds, actions shall be taken to remediate soil contamination to within ASTM International standards. Such actions could include excavation and disposal of contaminated soils from the site or bioremediation. A qualified Phase II Environmental Assessor shall be retained to develop and carry out a remediation plan, if necessary. ▸ Retain a Cal-OSHA-certified Asbestos and/or Lead-Based Paint Inspector/Assessor before demolition of any on-site buildings to investigate whether any asbestos-containing material or lead-based paints are present, and could become friable or mobile during demolition activities. The construction contractor shall provide a completed San Joaquin Air Pollution Control District Asbestos Notification Form must be submitted to the district 10 working days before the activity begins. If any materials containing asbestos or lead are found, they shall be removed by an accredited contractor in accordance with CCR 17 Section 36000 and 36100 (lead based paint) and Section 39658(b)(1) of the Health and Safety Code (asbestos). In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with EPA, Cal-OSHA, and San Joaquin Air Pollution Control District standards. The materials containing asbestos and lead shall be disposed of properly at an appropriately permitted off-site disposal facility.	
3.8-3 Emission or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing School.	LTS	None required	LTS
3.8-4 Safety Hazard for People Residing Near the Modesto City-County Airport.	LTS	**3.8-4: Provide Real Estate Disclosure of Presence of Modesto City-County Airport.** Applicants shall prepare for review by the City a real estate disclosure noting the presence of the Modesto City-County Airport. This is required for proposed residential development in the northwestern corner of the Specific Plan Area, as shown in the ALUCP Map MOD-5 “Overflight Zones Policy Map,” or as this map may be updated in the future. This disclosure shall be presented to prospective homebuyers. In addition, the applicant shall prepare for review by the City a real estate disclosure describing noise attributable to aircraft overflight according to the latest available mapping of noise contours associated with the Modesto City-County Airport. This disclosure shall be presented to prospective homebuyers.	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.8-5 Interference with Adopted Emergency-Response or Plans or Emergency Access.	PS	**3.8-5: Prepare and Implement a Construction Traffic Control Plan.** The project applicant(s) and/or construction contractor(s) shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way during construction, in order to facilitate travel of emergency vehicles on affected roadways. The traffic control plan must follow applicable City of Ceres Improvement Standards (whichever edition is current as of the date of construction) and must be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used, as necessary, during road closures. The traffic control plan shall be submitted to the City of Ceres Engineering Division for review and approval before the approval of improvement plans and issuance of building permits by the City of Ceres Building Division where roadway improvements may cause impacts on traffic. The traffic control plan shall be implemented throughout construction.	LTS
3.9. Hydrology and Water Quality			
3.9-1 Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects.	PS	**3.9-1a: Implement Mitigation Measure 3.6-3a (Prepare and Implement a Grading and Erosion Control Plan).**	LTS
		3.9-1b: Implement Mitigation Measure 3.8-2 (Prepare and Implement a Soil and Groundwater Sampling and Remediation Plan and Acquire Appropriate Regulatory Approvals).	LTS
		3.9-1c: Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices. Prior to the start of earth-moving activities, each project applicant for a project within the Specific Plan Area shall obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific stormwater pollution prevention plan (SWPPP) at the time the Notice of Intent to discharge is filed. The project applicant shall also prepare and submit erosion and sediment control and engineering plans and specifications for pollution prevention and control to the City of Ceres Engineering Division. The SWPPP shall identify and specify: ▸ the use of an effective combination of robust erosion and sediment control BMPs and construction techniques accepted by the City at the time of construction, that would reduce the potential for runoff and the release, mobilization, and exposure	LTS

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		of pollutants, including legacy sources of mercury from construction sites. These may include, but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences; ▸ the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities; ▸ the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation; ▸ the means of waste disposal; ▸ spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills; ▸ personnel training requirements and procedures that would be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and ▸ the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. ▸ Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below. - Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include, but are not limited to, silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation. - Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration. - Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		damage along roadways and facility infrastructure. A copy of the approved SWPPP shall be maintained and available at all times on the construction site.	
3.9-2 Potential Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff.	PS	**3.9-2: Prepare and Submit A Final Drainage Plan and Implement Requirements.** Before the approval of grading plans and building permits, project applicants for projects proposed within the Specific Plan Area shall prepare and submit final drainage plans to the City of Ceres Engineering Division. The drainage plan shall demonstrate that off-site upstream runoff would be appropriately conveyed through the Specific Plan Area, and that Specific Plan-related on-site runoff would be appropriately contained in detention basins or managed through other improvements (e.g., source controls) to reduce flooding and hydromodfication impacts. The plan shall include, but not be limited to, the following items: ▸ a map dividing the site into discrete drainage management areas to show in each how runoff will be managed using site design measures, source controls, treatment controls, and hydromodification measures as defined by the current MS4 permit. ▸ site design measures, source controls, treatment controls, and hydromodification measures must be selected, sized, and situated in accordance with the guidance provided in the current MS4 permit and the City's Storm Water Design Standards Manual for New Development and Redevelopment; ▸ an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods consist with the City of Ceres Public Works Department Engineering Improvement Standards, that accurately evaluates potential changes to runoff, including increased surface runoff; ▸ runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase; ▸ a description of the proposed maintenance program for the on-site drainage system; ▸ identification of specifications for installing drainage systems consist with the City of Ceres Public Works Department Engineering Improvement Standards; ▸ a description of on-site features designed to treat Specific Plan Area or additional areawide development stormwater and maintain stormwater quality before it is discharged; and	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		▸ stormwater management BMPs that are designed to limit hydromodification. These may include, but are not limited to, the use of Low Impact Development (LID) techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; and impervious surfaces disconnection); Per Chapter 13.18 of the City of Ceres Municipal Code, a legally binding operation and maintenance agreement is required for maintenance of the installed post-construction design measures. The agreement shall be recorded with the deed by the County Clerk making it transferrable to the new owner; or, when there are multiple property owners responsible for the maintenance of the control measures, the agreement shall consist of a legally binding covenant between the City and the homeowners' association or maintenance district. The owner or association responsible for the maintenance of the control measures may be required by the City to submit an annual self-certification that the stormwater control measures are effective and are being maintained in accordance with the submitted and approved operation and maintenance plan.	
3.9-3 Long-Term Operational Water Quality and Hydrology Effects from Urban Runoff.	PS	**3.6-3: Develop and Implement a Best Management Practice and Water Quality Maintenance Plan.** Before approval of the final subdivision map for projects proposed within the Specific Plan, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by the project applicant. Drafts of the plan shall be submitted to the City of Ceres Engineering Division for review and approval concurrently with development of the final subdivision maps. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. The plan shall include the following elements described below. ▸ A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features, which shall include final water quality basin sizing and design configuration. ▸ Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Ceres and including details regarding the size, geometry, and functional timing of storage and release pursuant to the City of Ceres Public Works Department Engineering Improvement Standards. ▸ Source control programs to control water quality pollutants, which may include but are not limited to recycling, street sweeping, storm drain cleaning, household	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas. ▸ A pond management component for the proposed detention basin that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding. ▸ LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to: - surface swales; - replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement); - impervious surfaces disconnection; and - trees planted to intercept stormwater.	
3.9-4 Depletion of Groundwater Supplies and Interference with Groundwater Recharge.	PS	**3.9-4a: Implement Mitigation Measure 3.9-2 (Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans).**	LTS
		3.9-4b: Implement Mitigation Measure 3.9-3: (Develop and Implement a Best Management Practice and Water Quality Maintenance Plan).	
3.10. Land Use and Planning			
3.10-1 Inconsistency with Stanislaus County General Plan and Zoning.	LTS	None required	LTS
3.10-2 Inconsistency with Ceres 2035 General Plan.	LTS	None required	LTS
3.10-3 Potential Inconsistency with the RTP.	LTS	None required	LTS
3.11. Noise and Vibration			
3.11-1 Potential for Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise.	S	**3.11-1: Reduce Construction Noise.** ▸ Where feasible, construction traffic shall avoid routes directly adjacent to noise-sensitive land uses, including Roeding Road between Moore Road and Faith Home Road and More Road between Whitmore Avenue and Roeding Road. ▸ The project applicant(s) and contractor(s) of all project phases shall implement the following measures to minimize noise impacts for all on- and off-site construction within 500 feet of any noise-sensitive land use. ▸ Limit noise-generating construction operations to the hours of 7 a.m.-8 p.m. (daytime).	SU

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		▸ Locate fixed/stationary equipment (e.g., generators, compressors) as far as possible from noise-sensitive receptors. Shroud or shield all impact tools, and muffle or shield all in-take and exhaust ports on powered construction equipment. ▸ Store and maintain equipment as far as possible from noise-sensitive receptors. ▸ Properly maintain and equip all construction equipment with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment-engine shrouds shall be closed during equipment operation. ▸ Shut down all motorized construction equipment when not in use to prevent excessive idling noise. ▸ Construct acoustic barriers (e.g., plywood, sound attenuation blankets) to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and construction equipment.	
3.11-2 Increase in Traffic Noise Levels at Existing Noise-Sensitive Receptors.	LTS	None required	LTS
3.11-3 Increase in Traffic Noise Levels at Proposed Noise-Sensitive Receptors.	S	**3.11-3: Reduce Transportation Noise Exposure Consistent with the Ceres 2035 General Plan.** The project applicant(s) and contractor(s) for proposed residential development along Whitmore Avenue that could be exposed to transportation noise levels in excess of City noise policies shall incorporate one or both of the following strategies to ensure noise exposure levels that are consistent with the Ceres 2035 General Plan: ▸ Provide site planning and design strategies demonstrated to achieve acceptable or conditionally acceptable exterior noise exposure policies. This can include placing distance between outdoor gathering spaces and Whitmore Avenue, placement of buildings between Whitmore Avenue and outdoor gathering spaces associated with proposed residential uses, or other approaches that are demonstrated to achieve acceptable or conditionally acceptable exterior noise exposure policies in the Ceres 2035 General Plan. ▸ Construct sound walls along the affected roadways, between the Specific Plan Area and the roadways with noise levels above 65 dB L_{dn}. After all practical site planning and design strategies are exhausted, the City may allow construction of sound walls along the south side of Whitmore Avenue, if needed, to achieve acceptable or conditionally acceptable exterior noise exposure policies in the Ceres 2035 General Plan. Soundwalls should be high enough to cut the line of sight between the roadway and outdoor gathering areas.	SU

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.11-4 Long-Term Exposure of On-site Sensitive Receptors to On- and Off-site Non-transportation Noise Sources.	PS	**3.11-4: Reduce Stationary Noise Source Exposure.** ▸ Noise generating mechanical equipment shall be shielded or located at a distance that would reduce noise levels at any existing or planned noise-sensitive outdoor activity areas to acceptable levels, as directed by the Ceres 2035 General Plan. ▸ Residential air conditioning units shall be located a minimum of 10 feet from adjacent residential dwellings, including outdoor activity areas, or shall be shielded or designed to reduce operational noise levels at adjacent dwellings. Shielding may include the use of fences or partial equipment enclosures. To provide effectiveness, fences or barriers shall be continuous or solid, with no gaps, and shall block the line of sight to windows of neighboring dwellings. ▸ Include site planning and design strategies, such as orientation of homes toward Cesar Chavez Junior High School with outdoor gathering areas placed behind proposed homes in order to reduce noise exposure, consistent with the Ceres 2035 General Plan noise policies.	LTS for mechanical equipment noise SU for agricultural noise
3.11-5 Potential Exposure of On- and Off-site Sensitive Receptors to Groundborne Noise and Vibration.	PS	**3.11-5: Implement Measures to Reduce Impacts Associated with Groundborne Noise and Vibration.** The project applicant(s) and contractor(s) of all development phases under the Specific Plan shall implement the following measures to reduce impacts associated with groundborne noise and vibration: ▸ Vibration-generating construction operations shall occur greater than 100 feet from occupied vibration-sensitive receptors (e.g., residences, schools) or as far as feasible from sensitive receptors. ▸ All construction equipment and equipment staging areas shall be located as far as possible from nearby vibration-sensitive land uses.	SU
3.12. Population and Housing			
3.12-1 Induce Population Growth.	LTS	None required	LTS
3.12-2 Potential Displacement of On-site Residential Structures	LTS	None required	LTS
3.13. Public Services & Utilities, Including Recreation and Energy			
3.13-1 Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services.	LTS	**3.13-1: Demonstrate Payment of Public Facilities Fee and Annexation into a Community Facilities District.** Prior to the issuance of any building permit, the project applicants for projects proposed under the Specific Plan shall pay to the City the fees adopted by Chapter 16.08 of the City of Ceres Municipal Code. The fee shall be determined by the fee	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		schedule in effect on the date the building permit application is submitted and deemed complete by City staff. Per Chapter 13.46 of the City of Ceres Municipal Code, projects applicants for projects proposed under the Specific Plan shall be required, before the approval of final maps, to participate in the establishment of a community facilities district for the purpose of imposing a residential service operations fee, or if such district has been previously established, to annex the proposed residential project to the existing district. The community facilities district shall be established, or properties shall be annexed to an existing district, pursuant to the provisions of California Government Code Sections 53318, et seq. The precise amount of the annual residential services operations fee to be levied against those properties included within the district shall be determined at the time of the initial formation of the district and in accordance with the statutes and laws applicable to the levying of such fees.	
3.13-2 Increased Demand for Law Enforcement Facilities, Services, and Equipment.	LTS	**3.13-2: Implement Mitigation Measure 3.13-1 (Demonstrate Payment of Public Facilities Fee and Annexation into a Community Facilities District).**	
3.13-3 Increased Demand for Public School Facilities and Services.	LTS	None required	LTS
3.13-4 Increased Demand for Parks and Recreation Facilities.	LTS	None required	LTS
3.13-5 Increased Demand for Water Supplies.	LTS	None required	LTS
3.13-6 Increased Demand for Water Supply Conveyance Facilities.	LTS	**3.13-6: Prepare and Submit A Water Supply Conveyance Improvement Plan in Compliance with Applicable Standards and Construct Water Supply Conveyance Infrastructure Prior to Occupancy.** Projects applicants for projects proposed under the Specific Plan shall prepare a detailed water conveyance infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure, in conjunction with other site-specific improvement plans. Proposed on-site water facilities shall be designed and sized to provide adequate service to the project site for the amount of development identified in the tentative subdivision map, based on City of Ceres Improvement Standards. A final water conveyance infrastructure improvement plan shall be approved by the City of Ceres Engineering Division before approval of the final subdivision map and issuance of building permits from the City of Ceres Planning and Building Division. All required infrastructure shall be in place prior to occupancy of development anticipated under the proposed project.	LTS

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3.13-7 Increased Demand for Wastewater Collection and Conveyance Facilities.	LTS	**3.13-7: Prepare and Submit A Wastewater Conveyance Improvement Plan in Compliance with Applicable Standards and Construct Wastewater Conveyance Infrastructure Prior to Occupancy.** Project applicants for projects proposed under the Specific Plan shall prepare a detailed wastewater infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure in conjunction with other site-specific improvement plans. Proposed on-site wastewater facilities shall be designed and sized to provide adequate service to the project site for the amount of development identified in the tentative subdivision map based on the City's Sewer System Management Plan and the City's Improvement Standards. A final wastewater infrastructure improvement plan shall be approved by the City of Ceres Engineering Division before approval of the final subdivision map by the City Council. All required infrastructure shall be in place prior to occupancy of development anticipated under the proposed project.	LTS
3.13-8 Increased Demand for the City of Ceres Wastewater Treatment Plant Facilities.	LTS	None required	LTS
3.13-9 Increased Generation of Solid Waste and Compliance with Solid Waste Regulations	LTS	None required	LTS
3.13-10 Consumption of Energy.	LTS	None required	LTS
3.13-11 New or Expanded Electrical and Natural Gas Utilities.	LTS	**3.13-11: Collaborate with Utility Providers to Prepare Utility Service Plans for Electrical and Natural Gas Services and Submit Written Verification to the City that Adequate Infrastructure is Available before Approval of a Final Subdivision Map.** The project applicant(s) shall prepare a utility service plan that identifies the electrical and natural gas infrastructure sizing and locations to serve proposed development. The project applicant(s) shall submit to the City written verification that TID has adequate electrical infrastructure and PG&E has adequate natural gas supplies and infrastructure available for the amount of proposed development before issuance of building permits.	LTS
3.14. Transportation			
3.14-1 Conflict with an Applicable Transportation Plan, Ordinance, Policy, or Congestion Management Program.	PS	**3.14-1a: Widen Whitmore Avenue to Four Lanes.** If this has not occurred as a part of a separate project, the Specific Plan applicant shall cause the segment of Whitmore Avenue from Della Drive to Cesar Chavez Junior High School to be widened to 4 lanes before 44 percent of the dwelling units are occupied within the Specific Plan Area, or as directed by the City of Ceres. If this improvement is pursued under a different project, future projects under the	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Specific Plan shall contribute a fair share to the widening of Whitmore Avenue. **3.14-1b: Improvements for Full Buildout of the Specific Plan Area.** Specific Plan traffic volumes have been compared to MUTCD peak-hour warrants, and the results are noted in Table 12 of Appendix F. As indicated the same locations that satisfy warrants under existing conditions do so with the implementation of the Specific Plan. However, as noted previously, signalization is not necessary the preferred action at each location. Alternatives for improving the LOS at study intersections have been evaluated and a preferred plan has been developed that will improve the LOS. Implementation of the following improvements is recommended to provide acceptable, LOS D or better operations: ▸ The Specific Plan applicant shall cause the construction of a barrier at the Whitmore Avenue / Moore Road intersection to prohibit northbound left turns when directed by the City of Ceres. ▸ The Specific Plan applicant shall cause the construction of a barrier at the Whitmore Avenue / Lunar Drive intersection to prohibit northbound and southbound left turns and cross traffic when directed by the City of Ceres. ▸ The Specific Plan applicant shall cause the construction of a signalized intersection with separate left turn lanes at the Whitmore Avenue / Boothe Road intersection before 10 percent of the Specific Plan's dwelling units are occupied or when directed by the City of Ceres.	
		3.14-1c: Improvements at Mitchell Road / Whitmore Avenue Intersection. The City's impact fee program includes funds for improving Mitchell Road to a 6-lane facility. This improvement will result in LOS D or better conditions. Implementation of the following improvements is recommended to provide acceptable, LOS D or better operations: ▸ The Specific Plan applicants shall contribute their fair share towards the cost of constructing an additional through- lane in each direction on Mitchell Road by paying adopted traffic impact mitigation fees.	
3.14-2 Hazards Due To a Design Feature.	LTS	None required.	LTS
3.14-3 Inadequate Emergency Access.	LTS	None required.	LTS
3.14-4 Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities, or Otherwise Decrease the Performance or Safety of Such Facilities.	PS	**3.14-4a: Construct Pedestrian Facility.** Implementation of the following improvement is recommended to provide adequate pedestrian facilities: ▸ The Specific Plan applicant shall cause an all-weather pedestrian facility to be constructed on the south side of the segment of Whitmore Avenue from Della	LTS

NI = No Impact CC = Cumulatively Considerable LTS = Less than Significant PS = Potentially Significant S = Significant SU = Significant and Unavoidable

Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Drive to Cesar Chavez Junior High School before 44 percent of the dwelling units are occupied within the Specific Plan Area, or as directed by the City of Ceres.	
		3.14-4b: Construct Transit Facility. The City PFF program includes constructing the bus-pull outs at the Whitmore Avenue/ Boothe Road intersection. Implementation of the following improvements is recommended to provide adequate transit facilities: ▸ The Specific Plan applicant shall cause a bus pull-out to be constructed at the Whitmore Avenue / Boothe Road intersection.	
5. Other CEQA Considerations			
Cumulative Impacts	CC	**5-1: Implement Roadway Improvements** The project applicant(s) shall implement the following roadway improvements: ▸ Contribute on a cumulative fair-share basis to the signalization for the Roeding Road / Moore Road intersection when directed by the City of Ceres. ▸ Construct a signalized intersection with separate northbound left turn lane at the Whitmore Avenue / Boothe Road intersection before 10 percent of Specific Plan's dwelling units are occupied, when Boothe Road is extended south from Whitmore Avenue, or when directed by the City of Ceres. ▸ Construct an "overlap" phase for the southbound right-turn lane at the Whitmore Avenue / Mitchell Road intersection when directed by the City of Ceres. ▸ Construct a barrier at the Whitmore Avenue / Moore Road intersection to prohibit northbound left turns after construction of the Eastgate Boulevard extension when directed by the City of Ceres. ▸ Construct a barrier at the Whitmore Avenue / Lunar Drive intersection to prohibit northbound and southbound left turns after construction of the Whitmore Avenue / Boothe Road intersection when directed by the City of Ceres. ▸ Contribute their fair share the cost of constructing a dual northbound left-turn lane at the Mitchell Road / Whitmore Avenue intersection. ▸ Contribute their fair share the cost of widening the Mitchell Road to 6 lanes.	Less than CC for Faith Home Road/ Whitmore Avenue and SU for Mitchell Road/Whitmore Avenue and for Roeding Road/ Moore Road

NI = No Impact CC = Cumulatively Considerable LTS = Less than Significant PS = Potentially Significant S = Significant SU = Significant and Unavoidable

Table ES-2. Cumulative Impact Summary

Impact	Significance before MM	MMs	Significance after MM
Aesthetics	CC	No additional feasible mitigation is available.	SU
Agricultural Resources	CC	No additional feasible mitigation is available.	SU
Air Quality	LTCC	No mitigation is required	LTCC
Biological Resources	LTCC	No mitigation is required	LTCC
Cultural Resources	CC	Mitigation Measures 3.5-1, 3.5-2a, and 3.5-2b	LTCC
Geology, Soils, Minerals, and Paleontological Resources	CC	Mitigation Measures 3.6-1, 3.6-3a, 3.6-3b, 3.6-4, and 3.6-5	LTCC
Greenhouse Gas Emissions	CC	No additional feasible mitigation is available.	SU
Hazards and Hazardous Materials	No significant cumulative impact	No mitigation is required	No significant cumulative impact
Hydrology and Water Quality	CC	Mitigation Measures 3.9-4a and 3.9-4b	LTCC
Land Use and Planning	No significant cumulative impact	No mitigation is required	No significant cumulative impact
Noise	CC	No additional feasible mitigation is available.	SU
Population and Housing	LTCC	No mitigation is required	LTCC
Public Services and Utilities, Including Recreation and Energy	LTCC	No mitigation is required	LTCC

CC = Cumulative Considerable
LTCC = Less than Cumulative Considerable
SU = Significant and Unavoidable

ES.6 ALTERNATIVES TO THE PROJECT

The CEQA Guidelines (Section 15126.6) require that an EIR describe a range of reasonable alternatives to the proposed project that could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. Below is a summary of the alternatives to the proposed project considered in Chapter 4, "Alternatives."

ES.6.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE – EXISTING LAND USE

CEQA Guidelines Section 15126.6(e)(2) states that a discussion of the "No Project" alternative must consider "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans." This alternative would be consistent with existing site, or "baseline" conditions.

ES.6.2 ALTERNATIVE 2: REVISED SITE PLAN ALTERNATIVE TO REDUCE TRANSPORTATION, NOISE, AND GREENHOUSE GAS EMISSIONS IMPACTS

Alternative 3 is intended to reduce potential impacts related to transportation, noise, and greenhouse gas emissions. Alternative 3 includes a buffer from Whitmore Avenue that is sufficient to achieve 65 decibels (dB) at

the front façade of homes to be consistent with guidance in the Ceres 2035 General Plan. This would require a buffer of approximately 107 feet from the centerline of Whitmore Avenue. This alternative would also increase the amount of open space along a relatively higher-volume roadway compared to the proposed project (7.8 rather than 5.2 acres).

This alternative would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (vehicle miles traveled, or "VMT") compared to the proposed project, along with decreasing the rate of transportation-related greenhouse gas (GHG) emissions. Also, as density increases, typically energy demand per unit would decrease. So, with a greater proportion of this alternative for medium- and high-density residential development, GHG emissions associated with energy generation and use would be decreased compared to the proposed project.

ES.6.3 ALTERNATIVE 3: REVISED SITE PLAN ALTERNATIVE TO PROTECT EXISTING TREES

The analysis in Section 3.1, "Aesthetics," and Section 3.4, "Biological Resources," conservatively assumed that all existing vegetation, including mature trees at existing residential properties, could be removed as a result of the project and that all existing habitat functions would be lost. This is a conservative assumption since it is possible that future site planning and design efforts could avoid the loss of these trees and since the Specific Plan would allow, but does not require development.

Alternative 4 is intended to reduce the potential that the two large valley oak (*Quercus lobata*) trees present within the fenced back yard of the residence just west of the junior high school would be lost. For this alternative, the low-density residential development planned for this area would instead remain in open space. Alternative 4 would have the same yield as the proposed project.

ES.7 AREAS OF CONTROVERSY

The CEQA Guidelines (Section 15123) require that the summary of an EIR identify areas of controversy known to the lead agency, including issues raised by agencies and the public. The following topics of interest were identified during circulation of the NOP. Each topic of interest that relates to a potential adverse physical environmental impact of the project is addressed in this EIR.

- Tribal cultural resources, Native American consultation, and cultural resources mitigation
- Water supply, impacts to nearby wells and the water table
- Traffic and circulation
- Water quality standards and permitting requirements
- Noise
- Native flora and fauna
- Airport compatibility
- Agricultural resources, Williamson Act contracts, and agricultural compatibility
- Public services
- Existing irrigation pipelines in the vicinity
- Air pollutant emissions, health impacts, and Air District Rules and Regulations

- On-site connectivity and access
- Land use compatibility with light industrial and regional commercial designated properties

ES.8 PUBLIC REVIEW OF THE DRAFT EIR

The Draft EIR is distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as to all parties requesting a copy of the Draft EIR, in accordance with Public Resources Code Section 21092(b)(3).

The Draft EIR will be noticed and available for a 45-day public review period. Copies of the EIR are available through the City of Ceres Planning Division. Detailed information related to the EIR is available online at the City's Website: http://www.ci.ceres.ca.us/202/Whitmore-Ranch-Specific-Plan.

Comments on the Draft EIR are invited in writing or via email to:

Mr. Tom Westbrook
Director of Community Development
2220 Magnolia Street,
Ceres, CA, 95307
Fax: (209) 538-5780
tom.westbrook@ci.ceres.ca.us

Comments should be focused on the adequacy and completeness of the EIR, or should address questions about the environmental consequences of project implementation. "Adequacy" is defined as the thoroughness of the EIR in addressing significant adverse physical environmental effects, identifying mitigation measures for those impacts, and supplying enough information for public officials to make decisions about the merits of the project.

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged.

Upon completion of the public review period, written responses to comments will be prepared and made available for review by the commenting agencies at least 10 days before the public hearings before the City, at which the certification of the final EIR will be considered by the Planning Commission who will provide a recommendation to the City Council who will consider final adoption. The comments and responses will be included as part of the record for consideration by the City.

1 INTRODUCTION

1.1 PURPOSE AND SCOPE

1.1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This Environmental Impact Report (EIR) evaluates the impacts of the *Whitmore Ranch Specific Plan* (Specific Plan), also referred to in this EIR as "the proposed project." This EIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code Section 21000 *et seq*.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 *et seq*.).

The lead agency is the public agency with primary responsibility over a project. In accordance with CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The City of Ceres (the City), as the lead agency, has prepared this EIR to evaluate the environmental impacts of implementation of the proposed project.

The CEQA Guidelines charge public agencies with the responsibility of avoiding or minimizing environmental damage that could result from implementation of a project, where feasible. As part of this responsibility, public agencies are required to balance various public objectives, including economic, environmental, and social issues.

The purpose of an EIR is neither to recommend approval nor denial of a project. An EIR is an informational document used in the planning and decision-making process by the lead agency and responsible and trustee agencies. An EIR describes the significant environmental impacts of a project, identifies potentially feasible measures to mitigate significant impacts, and describes potentially feasible alternatives to the project that can reduce or avoid significant environmental effects. CEQA requires decision-makers to balance the benefits of a project against its unavoidable environmental effects in deciding whether to carry out a project.

If significant environmental effects are identified, the lead agency must adopt findings indicating whether feasible mitigation measures or alternatives exist that can avoid or reduce those effects. If the environmental impacts are identified as significant and unavoidable, the lead agency may still approve the project if it determines that social, economic, legal, technological, or other factors override the unavoidable impacts. The lead agency would then be required to prepare a "statement of overriding considerations" that discusses the specific reasons for approving the project despite the existence of significant and unavoidable impacts.

In making its decision about the proposed project, the City considers the information in this EIR, comments received on the EIR, and responses to those comments, along with other available information and technical analysis. The City Council must certify the final EIR before adopting the Specific Plan.

1.1.2 FUTURE ENVIRONMENTAL REVIEW AND INTENDED USES OF THIS EIR

One of the City's goals in preparing the Specific Plan and EIR is to minimize the amount of new information that would be required to approve future projects that are consistent with the Specific Plan. Accordingly, the Specific Plan and this EIR anticipate the effects of subsequent projects proposed within the Specific Plan Area, as well as off-site infrastructure required to serve future development within the Specific Plan Area. Future projects that are consistent with the Specific Plan would either require no further environmental analysis or only focused,

supplemental environmental analysis pursuant to CEQA and the CEQA Guidelines. The City will examine development projects proposed under the Specific Plan to determine whether or not additional CEQA analysis will be necessary.

Future site-specific project approvals may be streamlined pursuant to the rules for tiering set forth in Section 15152 of the *CEQA Guidelines:* "[T]iering is a process by which agencies can adopt programs, plans, policies, or ordinances with EIRs focusing on 'the big picture,' and can then use streamlined CEQA review for individual projects that are consistent with such…[first-tier decisions] and are…consistent with local agencies' governing general plans and zoning" (*Koster v. County of San Joaquin* [1996] 47 Cal.App.4th 29, 36).

CEQA Guidelines Section 15152 further provides that, where a first-tier EIR has "adequately addressed" the subject of cumulative impacts, such impacts need not be revisited in second- and third-tier documents. Furthermore, second- and third-tier documents may limit the examination of impacts to those that "were not examined as significant effects" in the prior EIR or "[a]re susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." In general, significant environmental effects have been "adequately addressed" if the lead agency determines that:

- They have been mitigated or avoided as a result of the prior environmental impact report and findings adopted in connection with that prior environmental impact report; or

- They have been examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

The City anticipates that this EIR will be used for the tiering of later project-specific reviews. In examining the appropriate approach to providing CEQA analysis for subsequent project approvals, the City will assess, among other things, whether the significant environmental impacts identified in this EIR have been adequately addressed. Therefore, new or additional analyses performed for subsequent site-specific actions would focus on impacts that cannot be "avoided or mitigated" through design guidelines and development standards adopted as a part of the Specific Plan or mitigation measures identified in this EIR.

Future environmental review can also be streamlined pursuant to Public Resources Code Section 21083.3 and the *CEQA Guidelines,* Section 15183. The provisions of the Public Resources Code are similar, but not identical to the previously described tiering provisions. Public Resources Code Section 21083.3 limits the scope of necessary environmental review for site-specific approvals following the preparation of an EIR for a zoning action, community plan, or General Plan (including the Specific Plan). For later site-specific approvals, CEQA review is only required for impacts that are "peculiar to the parcel or to the project" and have not been previously disclosed, except where "substantial new information" shows that previously identified impacts would be more significant than previously assumed. Notably, impacts are considered not to be "peculiar to the parcel or to the project" if they can be substantially mitigated pursuant to previously adopted, uniformly applied development policies or standards.

The design guidelines and development standards of the Specific Plan that would reduce impacts, as described in this EIR, would generally be considered uniformly applied development standards for future projects entitled under the Specific Plan. This EIR demonstrates how these policies would substantially mitigate the effects of future projects (*CEQA Guidelines,* Section 15183[f]).

1.2 PROCESS

1.2.1 SCOPING AND NOTICE OF PREPARATION

Pursuant to Section 15082 of the CEQA Guidelines, the City of Ceres prepared a CEQA notice of preparation (NOP) and provided copies directly by mail and through the Governor's Office of Planning and Research (State Clearinghouse) to CEQA responsible and natural resource trustee agencies, local municipalities, interested persons, organizations, agencies, and landowners. The NOP was circulated for a 30-day public review and comment period. The NOP is contained in Appendix A of this Draft EIR. In response, the City received comments on the scope and content of the EIR as summarized below. The comment letters are provided in Appendix A of this Draft EIR.

Based on the NOP responses and review, the lead agency has determined that there could be significant environmental impacts involving the following resource areas and they require further analysis in the EIR:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, Minerals, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services and Utilities, including Energy and Recreation
- Transportation

1.2.2 INPUT FROM NOTICE OF PREPARATION

According to Section 15123 of the *CEQA Guidelines*, an EIR is required to identify possible "areas of controversy" known to the lead agency, including issues raised by agencies and the public. The following topics of interest were identified during circulation of the NOP. Each topic of interest that relates to a potential adverse physical environmental impact of the project is addressed in this EIR.

- Tribal cultural resources, Native American consultation, and cultural resources mitigation
- Water supply, impacts to nearby wells and the water table
- Traffic and circulation
- Water quality standards and permitting requirements
- Noise
- Native flora and fauna
- Airport compatibility
- Agricultural resources, Williamson Act contracts, and agricultural compatibility
- Public services
- Existing irrigation pipelines in the vicinity
- Air pollutant emissions, health impacts, and Air District Rules and Regulations
- On-site connectivity and access
- Land use compatibility with light industrial and regional commercial designated properties

1.2.3 DRAFT EIR

Upon completion of the Draft EIR, the City of Ceres files a Notice of Completion (NOC) with the Governor's Office of Planning and Research to begin the public review period (Public Resources Code Section 21161). This Draft EIR is distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as to all parties requesting a copy of the Draft EIR, in accordance with Public Resources Code Section 21092(b)(3).

Copies of the EIR are available through the City of Ceres Planning Division. Detailed information related to the EIR is available online at the City's Website: http://www.ci.ceres.ca.us/202/Whitmore-Ranch-Specific-Plan.

Comments on the Draft EIR are invited in writing or via email to:

Mr. Tom Westbrook
Director of Community Development
2220 Magnolia Street,
Ceres, CA, 95307
Fax: (209) 538-5780
tom.westbrook@ci.ceres.ca.us

Comments should be focused on the adequacy and completeness of the EIR, or should address questions about the environmental consequences of project implementation. "Adequacy" is defined as the thoroughness of the EIR in addressing significant adverse physical environmental effects, identifying mitigation measures for those impacts, and supplying enough information for public officials to make decisions about the merits of the project.

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to comments will be prepared and made available for review by the commenting agencies at least 10 days before the public hearings before the City, at which the certification of the final EIR will be considered. The comments and responses will be included as part of the record for consideration by the City.

1.2.4 FINAL EIR

After the close of the public review period, a Response to Comments document will be prepared, containing the comments received during the public review period, responses to those comments, and other information the City determines to be relevant. This document will be made available for review before the City considers certification of the Final EIR. The Response to Comments document and the Draft EIR, along with an "Errata" chapter to summarize any revisions to the Draft EIR, together will comprise the Final EIR.

1.3 ORGANIZATION AND CONTENT OF THIS DRAFT EIR

As required by CEQA, the EIR describes existing conditions and evaluates the potential environmental effects of the proposed project and a reasonable range of alternatives, including the No Project Alternative. It addresses the proposed project's direct, reasonably foreseeable indirect, and cumulative effects. The EIR identifies feasible mitigation measures, if available, to reduce potentially significant impacts.

This Draft EIR is organized into the following main sections:

- **Executive Summary.** This section includes a summary of the proposed project and alternatives addressed in the Draft EIR, as well as a summary of the project's environmental impacts, required mitigation measures, and level of significance after mitigation.
- **Chapter 1, "Introduction."** This chapter provides an introduction and overview describing the project background, agency roles and responsibilities, and organization of the EIR.
- **Chapter 2, "Project Description."** This chapter includes a detailed description of the proposed project, including its location. It also describes the intended uses of the Draft EIR, potential responsible agencies, and the needed permits and approvals.
- **Chapter 3, "Environmental Impact Analysis."** This chapter analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The following specific environmental topics are addressed in Chapter 3:
  - **3.1 Aesthetics—**The EIR evaluates existing visual conditions and the potential impacts on scenic vistas, scenic resources, and visual character that may result from possible future development.
  - **3.2 Agricultural Resources**—The EIR describes existing agricultural resources and evaluates potential impacts from conflicts with existing zoning, and from conversion to urban uses of lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.
  - **3.3 Air Quality**—The EIR discusses the regional and local air quality setting and quantifies project-related air pollutant emissions. Emissions of criteria pollutants are compared with the significance thresholds developed by the San Joaquin Valley Air Pollution Control District. The impact analysis also evaluates potential exposure of sensitive receptors to substantial pollutant concentrations.
  - **3.4 Biological Resources**—The EIR defines the biological resources in the vicinity of the Specific Plan Area and surrounding habitats and evaluates potential effects on wetlands, other sensitive natural communities (e.g., riparian habitat), and special-status species (e.g., raptors and other migratory birds). This section also addresses the relationship between the proposed project and any adopted habitat conservation plan.
  - **3.5 Cultural Resources**—The EIR describes existing cultural resources and evaluates potential impacts on those resources, including the potential to affect undiscovered resources during future excavation and grading. The EIR also documents consultation with Native American tribes to assess potential impacts on tribal cultural resources.
  - **3.6 Geology, Soils, Minerals, and Paleontological Resources**—The EIR describes the geological setting and potential environmental effects on geological, soil, mineral, and paleontological (fossil) resources. This section outlines design measures and best management practices to minimize impacts on people or structures from seismic activity. The EIR also identifies any potential impacts from loss of mineral resources and on undiscovered fossils.

- **3.7 Greenhouse Gas Emissions—**The EIR presents the current state of climate change science and greenhouse gas (GHG) emissions sources in California; summarizes applicable regulations; and describes project-generated GHG emissions and their cumulative contribution to global climate change impacts.

- **3.8 Hazards and Hazardous Materials**—The EIR identifies potential impacts from the transport, use, or disposal of hazardous materials; risk of upset or accident conditions from releases of hazardous materials; impairment of an adopted emergency response or evacuation plan; and exposure to wildland fires.

- **3.9 Hydrology and Water Quality**—The EIR evaluates hydrologic and water quality conditions and potential future short-term, construction-related effects on water quality from stormwater runoff, as well as longer-term effects on stormwater drainage and maintenance effects on water quality (e.g., fertilizers). This section also evaluates potential impacts on groundwater supply and on surface water hydrology from the addition of impervious surfaces associated with possible future development, along with flood risk.

- **3.10 Land Use and Planning**—The EIR describes existing land uses and evaluates the potential for conflicts with existing, adopted land use and natural resource plans or regulations (such as the adopted *City of Ceres 2035 General Plan* and *Stanislaus County General Plan*. This section also addresses consistency with the Stanislaus Council of Governments (StanCOG) Regional Transportation Plan (RTP).

- **3.11 Noise and Vibration**—The EIR describes existing noise and vibration conditions and the potential impacts of future development. Noise levels from traffic, as well as future uses are estimated and are compared with existing ambient noise levels and applicable noise standards and policies.

- **3.12 Population and Housing**—This section documents the existing population, housing, and employment conditions in the city of Ceres and Stanislaus County. Potential impacts related to population and housing resulting from implementation of the Specific Plan are described.

- **3.13 Public Services and Utilities, including Recreation and Energy**—The EIR analyzes existing public services and potential increases in demand, and evaluates whether those demands would require new facilities (e.g., schools, fire protection, and law enforcement) that could result in environmental impacts. The EIR describes current electricity and natural gas utility providers and evaluates whether the project would affect local or regional energy supplies, peak energy demand, energy resources, transportation energy use, and compliance with energy standards. The EIR describes existing utility systems and evaluates impacts related to the need for new utilities, such as for water supply, stormwater drainage, wastewater treatment, and solid waste disposal.

- **3.14 Transportation**—The EIR evaluates existing traffic conditions and potential traffic impacts related to a conflict with one or more applicable transportation plans, ordinances, or policies; hazards due to a design feature or incompatible use; inadequate emergency access; or conflicts with adopted plans, policies, or programs regarding public transit, bicycle, or pedestrian facilities.

- **Chapter 4, "Alternatives."** This chapter compares the impacts of the proposed project with alternatives that could address potentially significant effects and identifies the environmentally superior alternative.

- **Chapter 5, "Other CEQA Considerations."** This chapter provides a summary of significant environmental impacts; significant and unavoidable impacts; growth-inducing effects; and cumulative impacts.

- **Chapter 6, "References."** This chapter contains the list of references used in preparing the Draft EIR.
- **Chapter 7, "Preparers."** This chapter contains a list of preparers of the EIR.
- **Appendices:** The appendices include notices and other procedural documents pertinent to the Draft EIR, as well as technical material prepared to support the analysis.

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2 PROJECT DESCRIPTION

2.1 INTRODUCTION

The Whitmore Ranch Specific Plan (Specific Plan) proposes a mix of residential uses, public schools, and parks and open space on approximately 94 acres adjacent to, and south and east of, the City of Ceres. This chapter presents a description of the proposed Specific Plan, including the project location, the existing characteristics of the Specific Plan Area; project objectives; and the elements of the proposed project, including allowable land uses, public utilities and infrastructure, and roadway improvements. The applicant is Alvernaz Enterprises, LLC and Two Forty Nine, Inc.

2.2 REGIONAL LOCATION

The Specific Plan Area (also called "the project site") is located in unincorporated Stanislaus County adjacent to the city of Ceres (Exhibit 2-1; Exhibit 2-2).

2.3 PROJECT SITE AND VICINITY

The Specific Plan Area encompasses approximately 94 acres that is bounded by Whitmore Avenue on the north, Moore Road on the west, and the east side of La Rosa Elementary School on the east. The southern limit of the Specific Plan Area is approximately 1,300 feet south of Whitmore Avenue. Please refer to Exhibit 2-3.

The Specific Plan Area includes acreage that lies entirely within the City of Ceres Primary Sphere of Influence, and within the City of Ceres' Planning Area. The Ceres 2035 General Plan Land Use Diagram is shown in Exhibit 2-4.

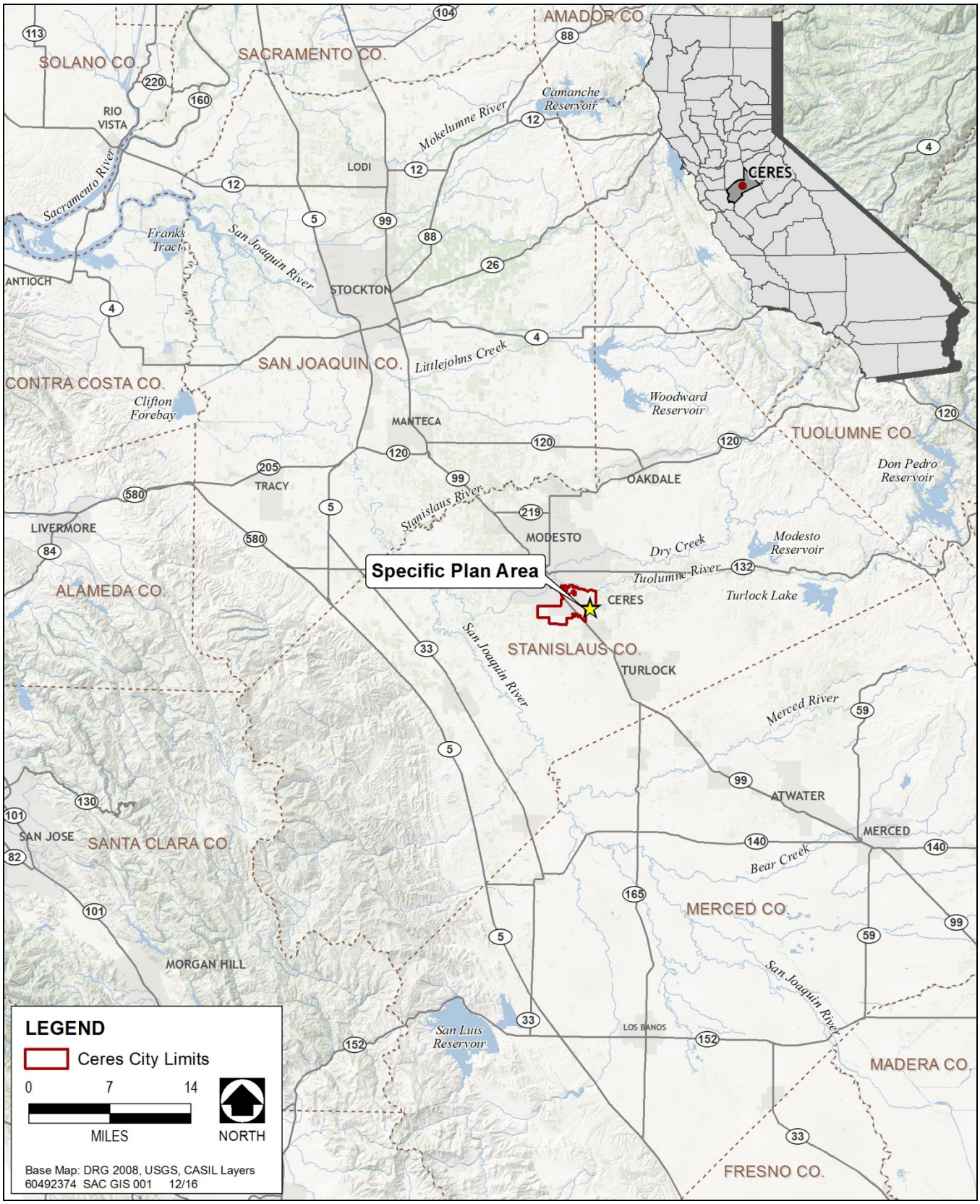
2.3.1 EXISTING ON-SITE LAND USES

The Specific Plan Area currently accommodates agricultural uses, housing, and schools. The site has almond orchards in the southwest and northeast corners and alfalfa, oats, and rye hay in the central portion. Some portions are fallow or not currently under production. Ceres Unified School District operates two schools within the Specific Plan Area: Ceres Chavez Junior High School and La Rosa Elementary School. There are existing single-family homes within the Specific Plan Area on lots of between approximately ½ acre and 2 acres in land area.

2.3.2 EXISTING SURROUNDING LAND USES

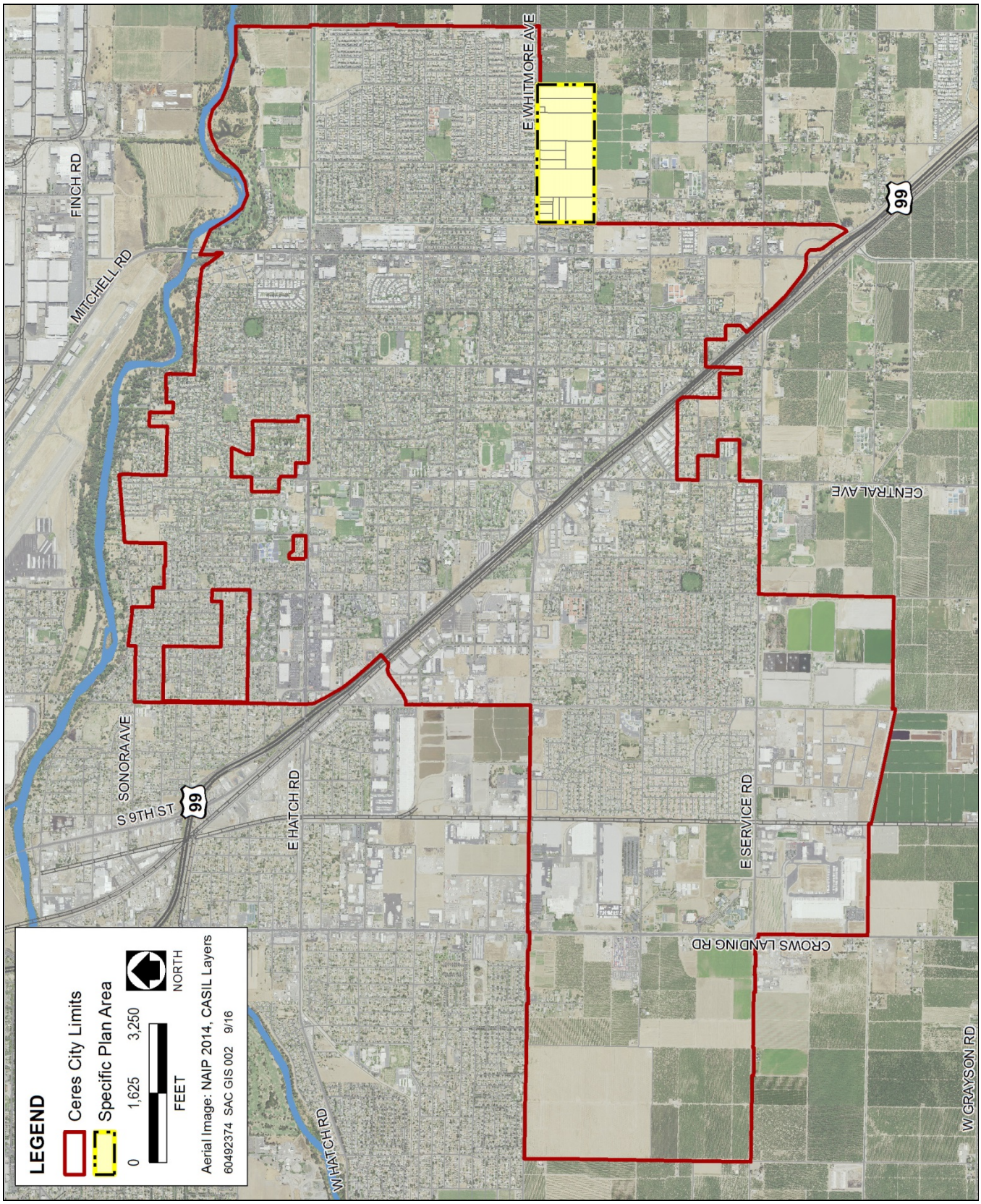
There are existing single-family residences north of the Specific Plan Area, north of Whitmore Avenue, in an area that is in the existing City limits. The area west of Moore Road, just west of the Specific Plan Area, is developed with both multi-family residences and commercial uses that are within the existing City limits.

Areas south and east of the Specific Plan Area consist largely of agricultural production, including commercial almond orchards and open field crops (mainly alfalfa), as well as farm structures, and single-family homes. There is also an existing labeling systems manufacturing facility approximately 1,000 feet south of the Specific Plan Area.



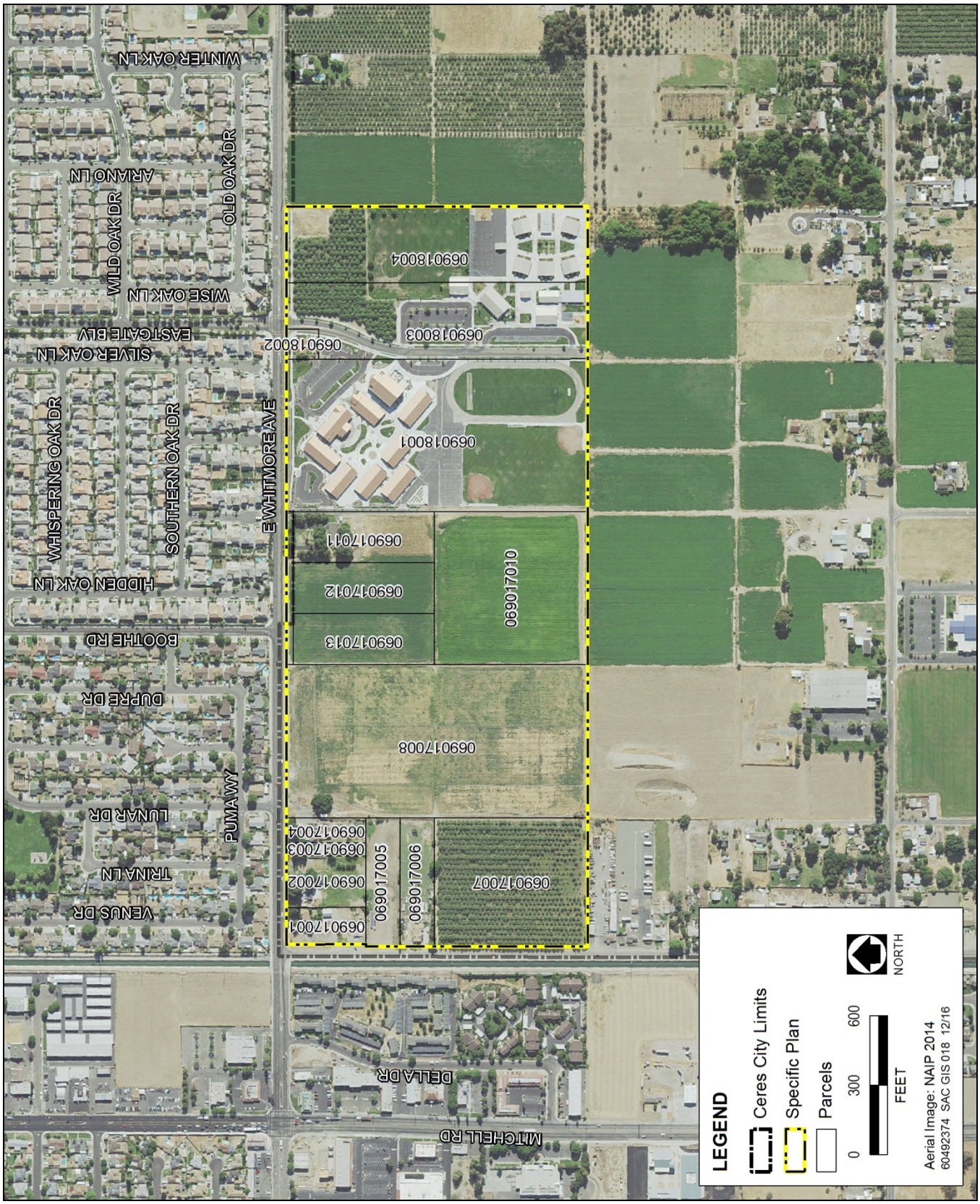
Source: Stanislaus County 2014

Exhibit 2-1 Vicinity Map



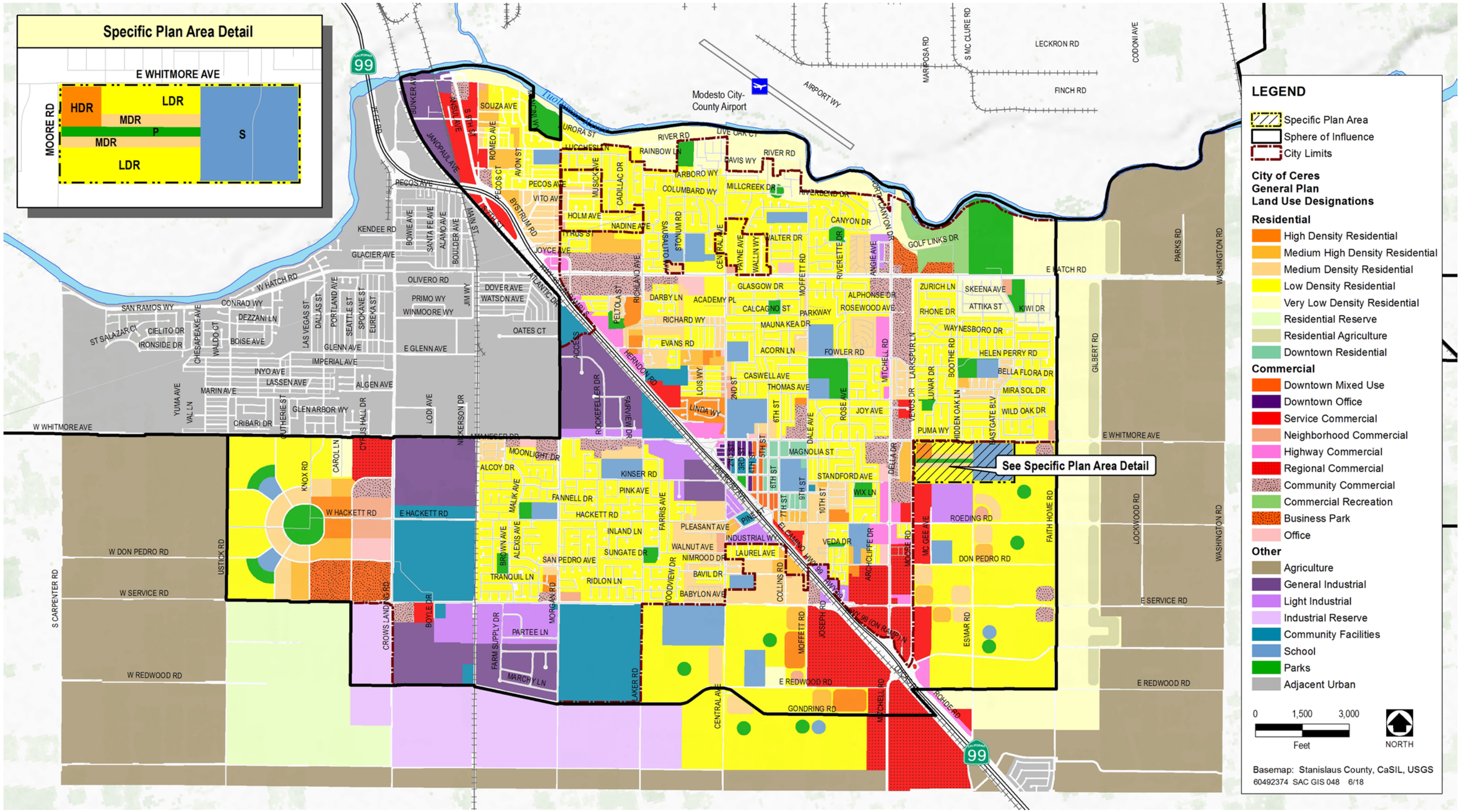
Source: City of Ceres 2016

Exhibit 2-2 Location of Specific Plan Area



Source: City of Ceres 2016

Exhibit 2-3 Specific Plan Area Parcels



Source: City of Ceres 2018, adapted by AECOM 2018

Exhibit 2-4 City of Ceres 2035 General Plan Land Use

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2.4 PROJECT OBJECTIVES

Under State law, Specific Plans must be consistent with the relevant jurisdiction's general plan. As such, the Whitmore Ranch Specific Plan will be consistent with, and implement, the Ceres 2035 General Plan. This EIR includes reference to relevant Ceres 2035 General Plan goals, policies, standards, and implementation programs that will guide the City's review of this Specific Plan and other entitlements required to fully implement the Specific Plan.

Key objectives for the proposed project are:

- Promote a distinct, identifiable neighborhood that integrates a variety of housing types;
- Encourage walking, bicycling, and transit use by Specific Plan Area residents, and provide bicycle and pedestrian connectivity throughout the Specific Plan Area and to adjacent bicycle and pedestrian facilities;
- Provide safe bicycle and pedestrian connections to and from the two schools within the Specific Plan Area;
- Ensure appropriate access and connectivity between the Specific Plan Area and existing developed areas, as well as areas planned for future development;
- Incorporate best practices and conservation measures into the design and provision of sewer, water, storm drainage, parks and open space, and other public improvements necessary to serve future development of the Specific Plan Area; and
- Develop a Specific Plan that would facilitate annexation of the existing Cesar Chavez Junior High School and La Rosa Elementary School.

2.5 DESCRIPTION OF THE PROPOSED SPECIFIC PLAN

2.5.1 PERMITS AND OTHER APPROVALS

Implementation of the Specific Plan will require approval by the Ceres City Council. The City will also be required to certify the EIR. Because the Specific Plan was included as part of the Ceres 2035 General Plan, a General Plan Amendment is not required to implement the proposed project. However, the City will need to approve pre-zoning for the Specific Plan Area based on Specific Plan land use designations in order to support annexation application/s to the Stanislaus Local Agency Formation Commission (LAFCO).

Implementation of the Specific Plan will also require a variety of other City approvals that could include, but are not necessarily limited to the approval of development plans, subdivision map/s, grading permit/s, encroachment permits, and building permits (with appropriate permit conditions).

Other permitting agencies with permitting approval or review authority over portions of the Specific Plan and projects developed under the Specific Plan may include, but is not necessarily limited to the agencies identified below.

Regional and Local Agencies

- San Joaquin Valley Air Pollution Control District (SJVAPCD) authority to construct (for devices that emit air pollutants) and review for applicability of projects with the Indirect Source Review Rule (Rule 9510).
- Turlock Irrigation District (TID): approval of application for electrical service.
- Pacific Gas & Electric (PG&E): approval of application for gas service.
- LAFCO: approval of annexation/s and other service area boundary changes.

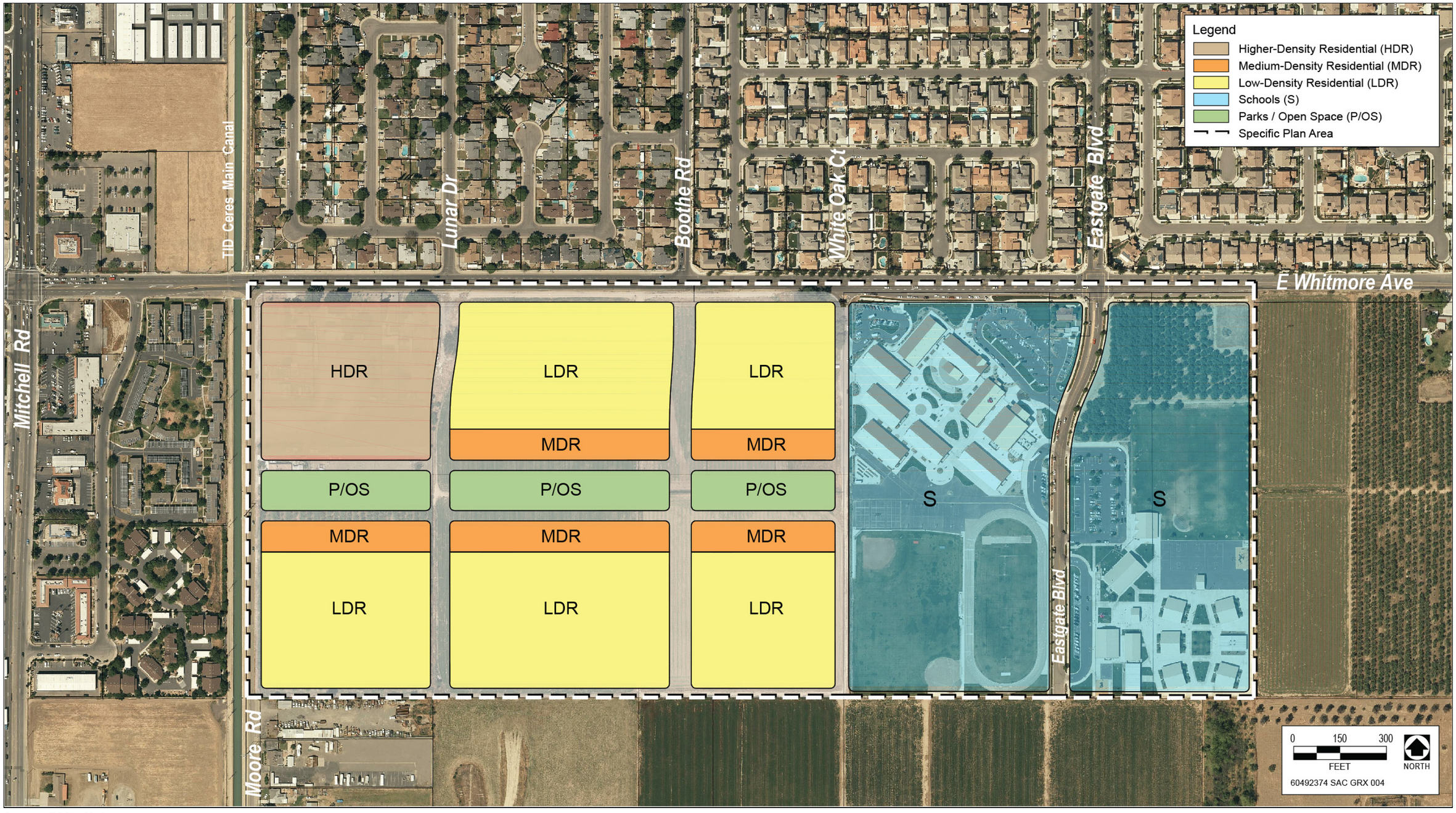
State Agencies

- Central Valley Regional Water Quality Control Board (RWQCB) (Region 5): National Pollutant Discharge Elimination System (NPDES) construction stormwater permit (notice of intent to proceed under general construction permit), discharge permit for stormwater, and potentially other approvals for future development projects within the Specific Plan Area.

2.5.2 SPECIFIC PLAN LAND USES

The Ceres 2035 General Plan Land Use Diagram, shown in Exhibit 2-4, includes a mix of residential land use designations for the Specific Plan Area, along with the School designation for the eastern portion of the area. The Specific Plan will provide for a range of densities and housing types, parkland and other open space, existing schools, and supporting infrastructure on approximately 94 acres of land. Future development would be compared to the development standards and design guidelines included in the Specific Plan.

The proposed Specific Plan Land Use Diagram, Exhibit 2-5, identifies Specific Plan land use designations. Table 2-1 summarizes land use acreages and the assumed number of dwelling units. As shown, the Specific Plan provides approximately 28 acres for Low-Density Residential, 6.6 acres for Medium-Density Residential, and 6.4 acres for High-Density Residential. Approximately 36 acres has the School land use designation and approximately 5.2 acres is designated Parks/Open Space. Streets and associated public rights-of-way would require approximately 12.2 acres of land area.



Source: AECOM 2016

Exhibit 2-5 Proposed Specific Plan Land Use Designations

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Table 2-1. Proposed Specific Plan Land Uses

Land Use	Acres	Allowable Uses	Dwelling Units
Low-Density Residential (LDR)	28	Single-family homes and home-based businesses	196
Medium-Density Residential (MDR)	6.6	Single-family homes using a variety of designs, multi-family housing, and home-based businesses	85
High-Density Residential (HDR)	6.4	Attached and small-lot single-family homes, multi-family, and complementary open space and public facilities	160
Parks / Open Space	5.2	Trails, parkspace, stormwater management facilities, and other types of open space	
School	36	Existing and proposed public schools, associated recreational facilities, and associated public uses	
Streets and Rights-of-Way	12.2		
Total	**94.4**		**441**

Notes: The acreages for each use type may vary from that shown in the table above as roadways are aligned, lots are configured, and other site-specific elements are refined as a part of future proposed development within the Specific Plan Area.

2.5.3 DEVELOPMENT POTENTIAL

The Specific Plan, once fully developed, could provide opportunities for as many as 441 new dwelling units. This total number of dwelling units and the number of units shown for each land use designation in Table 2-1 is an *assumption* used for the purposes of analysis.

Exhibit 2-6 provides a conceptual site plan. Exhibit 2-6 is intended only to illustrate one possible development scheme for the Specific Plan Area. Other design approaches would be consistent with the Specific Plan.

RESIDENTIAL

The Specific Plan provides housing opportunities in three residential land use designations, including:

- Low-Density Residential, approximately 28 acres, with an average lot size of 5,000 square feet;
- Medium-Density Residential, approximately 6.6 acres, with an average lot size lot size of 3,000 square feet; and
- High-Density Residential, approximately 6.4 acres, with an average density of 24 dwelling units per acre (du/ac).

The development assumptions presented in Table 2-1 are for the purpose of analysis only. While these assumptions would be expected to represent the top end of actual yield realized within the Specific Plan Area after it is fully developed, actual densities may be somewhat lower than these assumptions.

PARKS/OPEN SPACE

The proposed Specific Plan includes approximately 5.2 acres of public open space located in the center of the Specific Plan Area. The City anticipates that this open space would provide passive recreational opportunities and stormwater management features, as well as a high-quality, east-west bicycle and pedestrian connection across the Specific Plan Area. On-site open space is intended to meet the City's parkspace requirement of four acres per thousand residents.

SCHOOLS

Approximately 32 acres of the Specific Plan Area is occupied by Cesar Chavez Junior High School and La Rosa Elementary School. These schools will continue to operate at this location. Approximately 3.5 acres of undeveloped land in the northeastern portion of the Specific Plan Area is owned by the Ceres Unified School District. Within this area also is an existing home site of approximately 0.4 acres. The total land area with the School designation is approximately 36 acres.

2.5.4 PUBLIC UTILITIES AND INFRASTRUCTURE

Infrastructure to support the Specific Plan will include drainage, sewer, water, and dry utilities, as summarized below.

DRAINAGE

Storm drains will be incorporated in streets, parks, and open spaces throughout the Specific Plan Area. The City anticipates that the open space would provide passive drainage, as well. Water quality issues would be addressed prior to entering the downstream system. Design and construction of the drainage system would be reviewed and conditioned, as necessary, to meet applicable City standards. The Specific Plan will include details on planned drainage improvements.

WATER

Water supply for the Specific Plan Area will be provided by the City of Ceres and extended from existing adjacent facilities. Water conveyance facilities will be constructed within Specific Plan Area and will be required to meet applicable City standards. The Specific Plan includes details on planned backbone water supply improvements.

SEWER

Sewer collection and treatment would be provided to the Specific Plan Area by the City of Ceres. The size and location of on-site facilities has been developed as a part of the Specific Plan process, consistent with City standards. Existing adjacent facilities will be extended to serve development within the Specific Plan Area. The Specific Plan includes details on planned backbone sewer collection improvements. Construction of an off-site sewer line would be needed to support the development of the Specific Plan. This line will extend to the south in Moore Road to Roeding Road and west in Roeding Road to Mitchell Road.



Source: AECOM 2016

Exhibit 2-6 Conceptual Site Plan (Illustrative Only)

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DRY UTILITIES

Dry utilities, including electricity and natural gas, will be required to serve the Specific Plan. Pacific Gas & Electric (PG&E) supplies natural gas within the vicinity of the Specific Plan Area and TID provides electricity.

Electricity

TID is responsible for upgrading existing electrical infrastructure or constructing new infrastructure to meet the demands of individual projects anticipated under the Specific Plan. Electrical infrastructure may include extension of existing distribution lines; upgrades to substations; and construction of new distribution lines, substations, and transformers. Applicant(s) for future projects within the Specific Plan Area will be required to coordinate with, and meet the requirements of TID.

Natural Gas

Natural gas service for the Specific Plan Area is provided by PG&E. PG&E has no existing natural gas facilities within the Specific Plan Area. One PG&E buried natural gas pipeline lies along Whitmore Avenue with small pipelines that connect to the existing schools.

PG&E is responsible for upgrading existing natural gas distribution systems or constructing new distribution systems to meet the demands of individual projects anticipated under the Specific Plan. PG&E may extend existing natural gas infrastructure using undergrounded pipelines, upgrade natural gas regulator stations, and construct new natural gas regulator stations to serve individual development projects proposed in the future within the Specific Plan Area. Applicant(s) for future projects within the Specific Plan Area will be required to coordinate with, and meet the requirements of PG&E.

2.5.5 TRANSPORTATION

The Specific Plan transportation network will provide access and mobility for pedestrians, bicyclists, and motorists, along with future opportunities for planned transit extensions. Currently, Eastgate Boulevard is the only road in the Specific Plan Area. However, planned improvements would include pedestrian and bicycle facilities along Whitmore Avenue and Moore Road, as well as through the central open space feature of the Specific Plan Area. Specific Plan improvements along Whitmore Avenue will be coordinated with a Safe Routes to School project planned south of Whitmore Avenue between Moore Road and the existing schools.

The Specific Plan provides for multi-modal extensions of Lunar Drive and Boothe Road through the Specific Plan Area, as well as a new facility along the southern boundary of the Specific Plan Area (Stanford Avenue). To provide good connectivity and access, several additional internal pedestrian, bicycle, and vehicular facilities would also be installed within the Specific Plan Area, consistent with City design standards. The Specific Plan also includes improvements to circulation that will benefit the Ceres Chavez Junior High School and La Rosa Elementary School.

Details on circulation planning are provided in the draft Specific Plan.

2.6 INTENDED USES OF THIS EIR

The Specific Plan EIR is prepared in accordance with the requirements of CEQA (California Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (CCR Section 15000 et seq.). The City of Ceres, as lead agency for the proposed project under CEQA, has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. In addition to the City's approval and certification of the EIR, additional approvals and entitlements would be required to carry out the Specific Plan, including, but not limited to the approvals listed previously.

Under CEQA, a trustee agency is an agency that has jurisdiction by law over natural resources that are held in trust for the people of the state of California. Under CEQA, a responsible agency is any agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (California Public Resources Code Section 21069). Responsible agencies are encouraged to actively participate in the CEQA process, review the CEQA documentation of the lead agency, and use the document when making decisions on the project. Several agencies other than the City have involvement in certain approvals that would be required for Specific Plan implementation, including those listed previously.

3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.0 APPROACH TO THE ENVIRONMENTAL ANALYSIS

The California Environmental Quality Act Guidelines (CEQA Guidelines) require the environmental analysis for an EIR to include an evaluation of impacts associated with a proposed project and to identify mitigation for any potentially significant impacts. CEQA Guidelines Section 15126.2(a) states:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

3.0.1 SECTION FORMAT AND CONTENTS

The environmental setting, impacts, and required mitigation measures for the proposed project are organized by issue area, corresponding to topics in the CEQA Environmental Checklist (CEQA Guidelines Appendix G, as amended). Each section follows the same format:

- The "**Environmental Setting**" subsection provides an overview of the existing physical environmental conditions (i.e., the environmental baseline) for each issue area at the time this analysis was prepared. The environmental baseline at the time of the release of the NOP (January 2017) is the context against which potential project impacts are evaluated.

- The "**Regulatory Framework**" subsection identifies the federal, State, regional, and local plans, policies, laws, regulations, and ordinances that are relevant to each issue area. This subsection describes required permits and other approvals necessary to implement the proposed project.

- The "**Environmental Impacts and Mitigation Measures**" subsection presents the following information:

  - The **"Methodology"** subsection describes the methods, process, procedures, and assumptions used to formulate and conduct the impact analysis.

  - The **"Thresholds of Significance"** subsection identifies the criteria established by the lead agency to define at what level an impact would be considered significant. Criteria may be defined by a lead agency based on examples found in CEQA or the CEQA Guidelines, scientific and factual data relative to the

lead agency jurisdiction, views of the public in the affected area, the policy/regulatory environment of affected jurisdictions, or other factors.

- If applicable, the **"Issues Not Discussed Further"** subsection identifies issues for which the proposed project would not affect the physical environment. An explanation is provided of how the determination of "no impact" was reached. These issues are not discussed further in the impact analysis that follows.

- The **"Impact Analysis"** subsection first presents a summary of the environmental impact conclusions. The impact analysis then presents an assessment of the potential direct and indirect impacts of the proposed project and specifies why impacts are found to be "significant and unavoidable," "significant," "potentially significant," or "less than significant" (see Section 3.0.2 Terminology Used in the EIR) or why there is no environmental impact.

If there is found to be a potentially significant impact, mitigation measures are provided, where available and feasible. The measures are numbered to correspond with the impacts they mitigate. In accordance with Public Resources Code Section 21081.6(b), mitigation measures must be fully enforceable through permit conditions, agreements, other legally binding instruments, or by incorporating the measures into the project design. Section 15370 of the CEQA Guidelines defines mitigation as:

- avoiding the impact altogether by not taking a certain action or parts of an action;
- minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- reducing or eliminating the impact over time by preservation and maintenance operation during the life of the action; or
- compensating for the impacts by replacing or providing substitute resources or environments.

Where no feasible mitigation is available to reduce impacts to a less-than-significant level, the impacts are identified as significant and unavoidable. (The analysis of cumulative impacts is presented in Chapter 5, along with the analysis of growth-inducing impacts.)

3.0.2 TERMINOLOGY USED IN THIS EIR

This EIR uses the following terminology to denote the significance of environmental impacts of the proposed project:

- ***No impact*** would occur if the proposed project would not have any direct or indirect effects on the environment. It means that no change from existing conditions would result. This impact level does not require mitigation.
- A ***less-than-significant impact*** is one that is not a substantial and adverse change in the physical environment. This impact level does not require mitigation, even if feasible mitigation measures are available.
- A ***significant impact*** is defined by Public Resources Code Section 21068 as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project."

Mitigation measures or alternatives to the proposed project must be identified, where applicable and feasible, in an attempt to avoid, minimize, or reduce the magnitude of significant impacts.

- A ***potentially significant impact*** is one that, if it were to occur, would be considered a significant impact as described above; however, the occurrence of the impact cannot be immediately determined with certainty. For CEQA purposes, a potentially significant impact is treated (i.e., mitigated) as if it were a significant impact.

- A ***significant and unavoidable impact*** is a substantial or potentially substantial adverse effect on the environment that cannot be reduced to a less-than-significant level even with implementation of feasible mitigation. A project with significant and unavoidable impacts could proceed, but the lead agency would be required to required (i) to conclude in findings that there are no feasible means of substantially lessening or avoiding the significant impact in accordance with CEQA Guidelines Section 15091(a)(3) and (ii) to prepare a statement of overriding considerations, in accordance with CEQA Guidelines Section 15093, explaining why the CEQA lead agency has chosen to proceed with the project in spite of the potential for significant impacts.

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3.1 AESTHETICS

Aesthetic or visual resources are the natural and human-built features of the landscape that contribute to the public's appreciation and enjoyment of the aesthetic environment. This section describes the aesthetic resources within the project site and surrounding areas and provides a qualitative evaluation of the project's potential impacts on the area's visual character, scenic vistas, and scenic resources, as well as potential impacts from light and glare.

3.1.1 ENVIRONMENTAL SETTING

VISUAL CHARACTER OF THE VICINITY

The areas on the north side of Whitmore Avenue are developed with single-family residences approximately 75 feet north of the Specific Plan Area. The area west of Moore Road is developed with both multi-family residences and commercial uses that are within the existing City limits, approximately 110 feet west of the Specific Pan Area.

Areas south and east of the Specific Plan Area are largely in agricultural production and include commercial almond orchards and open field crops (mainly alfalfa), as well as farm structures, and single-family homes. There is also an existing labeling systems manufacturing facility approximately 1,000 feet south of the Specific Plan Area.

To the west, low-lying foothills gradually rise towards the northern portion of the Diablo Mountain Range. To the south and east, the area is predominately agricultural, consisting of fallow land, orchards, and the cultivation of other agricultural products common to the San Joaquin Valley. Rural residences are located interspersed throughout the area. In many places, views are dominated by agricultural lands and open space.

VISUAL CHARACTER OF THE SPECIFIC PLAN AREA

The Specific Plan Area currently accommodates agricultural uses, housing, and schools. The site has almond orchards in the southwest and northeast corners and alfalfa, oats, and rye hay in the central portion. Some portions are fallow or not currently under production. Ceres Unified School District operates two schools within the Specific Plan Area: Ceres Chavez Junior High School and La Rosa Elementary School. There are existing single-family homes within the Specific Plan Area on lots of between approximately ½ acre and 2 acres in land area. The views on and around the project site are of single-family homes to the north and west and agricultural land with rural residences to the east and south (Exhibit 3.1-1).

STATE-DESIGNATED SCENIC HIGHWAYS

There are no State-designated scenic highways in or within view of the Specific Plan Area. Interstate 5 (I-5), which is located approximately 16 miles west of the Specific Plan Area, is a State Scenic Highway in Stanislaus County (Caltrans 2016). It is not close to the Specific Plan Area and travelers on this road have no view of the Specific Plan Area.

LIGHT

Light can produce an impact at night or during the daytime. Nighttime lighting can affect human health, primarily through the disruption of circadian biological rhythms or sleep. Either nighttime or daytime lighting can produce glare, or direct exposure to bright lights, which can cause safety hazards.

Off-site light sources contribute to existing nighttime lighting in the vicinity. Nighttime lighting sources within the Specific Plan Area include roadways (vehicles and street lighting), as well as porch lights and other low-level lights on residences and farm buildings. Roadways on and adjacent to the Specific Plan Area are a source of glare as well, from automobile headlights at night and reflections from glass and metal surfaces during the day.

VIEWER GROUPS AND VIEWER SENSITIVITY

Travelers along roadways in the vicinity of the Specific Plan Area (i.e., Whitmore Ave, Mitchell Road, Faith Home Road) represent one important viewer group. Travelers would likely be residents of the city, employees working in Ceres, or visitors engaged in business or recreational travel. Since there are no parks or trails nearby, recreational pedestrians would be unlikely. Residents surrounding the Specific Plan Area on all sides would also have views of the project site.

Residents have a relatively higher concern and awareness of visual change taking place near to where they live. People engaged in recreational pursuits, such as sight-seeing, fishing, boating, hiking, or bicycling (unlikely in this case) would be anticipated to have a heightened awareness of their surroundings and would be sensitive to changes in the visual environment. In general, people engaged in work-related activities tend to focus on their immediate visual environment, rather than distant views.

3.1.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no federal policies, regulations, or laws associated with aesthetics that are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Scenic Highway Program

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of land adjacent to highways. There are no State-designated scenic highways in or within view of the Specific Plan Area.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Ceres 2035 General Plan

The Ceres 2035 General Plan does not specify does not identify aesthetic or visual resources specifically, except to state that residents value Ceres' small-town qualities and agricultural setting.

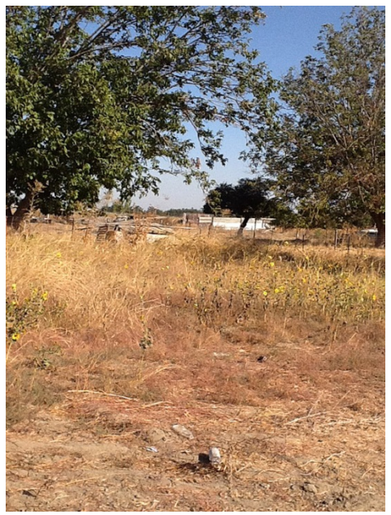


View North of Specific Plan Area



View West of Specific Plan Area





View South of Specific Plan Area



View East of Specific Plan Area



Visual Characteristics of the Specific Plan Area

Exhibit 3.1-1 Views of the Specific Plan Area

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The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to aesthetics are applicable to the proposed Specific Plan.

Land Use and Community Design

- **Policy 2.D.3 Sensitivity to Context**. Encourage design in new development that enhances and blends with the established fabric of the natural, social, and built environment, while allowing for innovative and unique architectural styles and projects that meet the community's needs.

- **Policy 2.E.2 Conceal Unsightly Uses**. Enhance the visual quality of major corridors by requiring new and expanding development to conceal unsightly uses and equipment, (i.e., screening of rooftop equipment and outdoor storage, and undergrounding of utilities).

- **Policy 2.F.5 Pedestrian-Oriented Streetscape**. Require streetscapes and buildings to encourage pedestrian activity and comfort.

- **Policy 2.F.6 Integrated Neighborhoods**. Require new residential developments to be physically and socially integrated with the existing community.

- **Policy 2.F.7 Street Trees**. Support a robust system of street trees in order to increase shade, minimize runoff, and create a comfortable and visually attractive environment.

- **Policy 2.L.2 Design Review**. Require an efficient design review process, as appropriate, that focuses on achieving form and function for new, reuse and reinvestment projects to promote creativity, sustainability, health, and design quality.

- **Policy 2.L.5 Single Family Residential Design**. Ensure architecture and landscaping in single-family residential projects contribute to a neighborhood identity with visual interest and variety. Encourage the following characteristics in single family residential development:

    - architectural variety between residences to contribute to neighborhood identity. discourage monotonous developments with repetitive residential design;
    - development oriented to the street;
    - reduced priority given to garages and parking;
    - attractive architectural features such as front porches, articulated facades, formers, trim and moldings, and high-quality building materials; and
    - size, scale, proportion, color, placement, and detailing of architectural features that complement the overall massing and scale of the building.

- **Policy 2.L.6 Multi-Family Residential Design**. Ensure attractive architecture and design of multi-family buildings provide a variety of high-quality housing options with convenient facilities to foster a high quality of life. Encourage the following characteristics [among others] in multi-family developments:

    - building mass broken into small units;
    - attractive landscaping, including larger trees; and

- size, scale, proportion, color, placement, and detailing of architectural features that complement the overall massing and scale of the building.

Transportation and Circulation

- **Policy 3.F.8 Pedestrian Facility Design**. Provide safe, continuous and pleasant pedestrian paths of travel, including sidewalk width appropriate for the land use context of the street, enhanced street crossings, landscape and/or parking buffers, and pedestrian scale lighting throughout the city.

Agriculture and Natural Resources

- **Policy 4.D.4 Native and Drought Tolerant Plants**. Utilize native and drought-tolerant plants in landscaping for public buildings and parks. Encourage the use of native and drought-tolerant plant species on private property, and prohibit the use of invasive species.

- **Policy 4.E.5 Energy Efficient Lighting**. Establish standards to improve energy efficiency related to outdoor lighting by limiting unnecessary fixtures and utilizing low-energy fixtures.

- **Policy 4.F.8 Graded and Disturbed Areas**. Require that new development provides landscaping and re-vegetation of graded or disturbed areas with drought-tolerant native or non-invasive plants.

Public Facilities and Services

- **Policy 6.C.11 Park Design**. Consider the following factors [among others] in the design of new and upgraded parks and recreational facilities:

  - landscaping complementary to the surrounding environment;
  - cultural sensitivity;
  - use of green technology in the construction and everyday use of facilities (i.e. solar panels, rainwater harvesting, rain gardens and bioswales, etc.);
  - tree canopy/shade; and
  - lighting.

- **Policy 6.C.16 Park Siting and Design**. Ensure that parks and recreation facilities are sited and designed to minimize negative impacts on surrounding residential neighborhoods (i.e., parking, lighting and glare, excessive noise).

- **Policy 6.C.21 Bicycle and Pedestrian Connections to Parks and Recreational Facilities**. Establish new and maintain existing bicycle and pedestrian network connections between parks and recreational facilities to improve health outcomes and access to diverse programming in City park and recreational facilities. Ensure connections are well-lit, maintained, and marked with signage.

- **Policy 6.F.3 Low Impact Developm**ent. Promote the use of low impact development (LID) strategies in new development and redevelopment projects, including but not limited to the use of canopy trees and shrubs, vegetated swales, and permeable paving.

- **Policy 6.G.4 Screening of Waste, Composting, and Recycling Containers**. Require screening of waste, composting and recycling containers in commercial, industrial, and multi-family residential areas from public rights-of-way.

- **Policy 6.H.2 Undergrounding of Utilities**. Require the undergrounding of utilities for all new development.

3.1.3 Environmental Impacts and Mitigation Measures

Methodology

Although some aspects of a visual feature can be measured, classified, and analyzed with some degree of reliability and validity, any aesthetic analysis is nevertheless subjective. Each viewer has perceptions formed by individual influences, such as cultural background, training, familiarity with local culture and geography, and personal values.

This evaluation of visual resources characterizes visual features, assesses their quality in relation to the visual character of the surrounding area, and identifies their importance of changing views to the individuals viewing them.

The methodology described above was used as guidance in evaluating whether impacts of the Specific Plan would significantly impact visual resources and as a basis for formulating mitigation measures.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the CEQA Guidelines, as amended. The proposed project would have a significant impact related to aesthetics if it would:

- have a substantial adverse effect on a scenic vista or substantially degrade the existing visual character or quality of the site and its surroundings;

- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway; or

- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Issues Not Discussed Further

- **Substantial Damage to Scenic Resources within a Designated State Scenic Highway**—The proposed project would not affect scenic resources, rock outcroppings, or historic buildings within a State scenic highway. The closest State designated scenic highway is I-5, approximately 16 miles west of the Specific Plan Area, and the Specific Plan Area is not visible from the scenic highway segment. Therefore, no impact would occur, and this issue is not evaluated further in this document.

IMPACT ANALYSIS

IMPACT 3.1-1 Degrade the existing visual character of the project site or impact scenic vistas. *The Specific Plan Area does not have resources identified by Ceres policy documents as being important visual resources. Development of the Specific Plan Area would be consistent with existing, adjacent development. This impact is considered* ***less than significant****.*

A scenic vista is a public viewpoint that provides expansive views of highly valued scenery or landscapes. No scenic vistas or important visual resources have been identified in or near the project site. As previously stated, the views on and around the project site are of housing to the north and west and agricultural land with rural residences to the east and south. The site accommodates agricultural uses, housing, and schools. This visual character is not unique within the region. There are no distinctive landscape features, such as mountains, rivers, or rock outcroppings. In addition, the Specific Plan Area is partially developed.

Viewers of the project site are generally motorists and residents. Although residents have a relatively high level of sensitivity to visual changes in their surroundings, development of the Specific Plan Area would occur in a way that is consistent with existing development to the north and west. In addition, there is a wall between the residential development to the north and the Specific Plan Area which would block views from that direction.

The Specific Plan includes design guidelines to address visual character. The main goals of these guidelines are to facilitate the development of a high-quality aesthetic environment for the residents of Whitmore Ranch and the surroundings. The Specific Plan includes guidance on setbacks, rear loaded garage access, street layout, landscaping, site furniture, entry features and monuments, signage, fences and walls, and other aspects that influence aesthetic design.

In addition, the land use diagram was developed in consideration of aesthetic impacts. Roads or open space serve as a buffer and transition to adjacent development, such as the agricultural and future commercial and industrial uses south of Stanford Avenue. Homes front onto parkspace. Sidewalks along Specific Plan Area roadways are typically separated with landscaping and parking and shaded with street trees, to enhance the aesthetic and pedestrian quality of neighborhood streets. Roads are aligned to keep automobile headlights from shining into homes. This impact would be **less than significant**.

Mitigation Measure

No mitigation measures would be required.

IMPACT 3.1-2 Increase in Nighttime and Daytime Lighting, Glare, and Skyglow Effects. *Implementation of the Specific Plan would result in increased nighttime lighting and could include construction of buildings with reflective surfaces that inadvertently cast light and glare toward motorists on adjacent roadways. Development would increase the amount of daytime and nighttime light and glare and would introduce a new source of nighttime lighting in an existing partially developed area. This impact is considered* ***less than significant****.*

The Specific Plan Area is located in a partially developed area where roadways (vehicles and street lighting), porch lights, and other low-level lights on buildings are the major sources of lights. Roadways in and around the area are a source of nighttime lighting, as well as glare from automobile headlights at night and reflections from

metal surfaces (such as automobiles, fences, or decorations) during the day. Development of the site would add night lighting in a partially developed area.

Lighting would be used along roads, in recreational open space areas, in parking areas, and in association with other structures and facilities. Lighting installed along roadways related to the Specific Plan could create light spillage beyond public rights-of-way. These potential sources of light would substantially increase ambient night lighting in the Specific Plan Area. It is possible that the proposed Specific Plan could result in construction of buildings with reflective surfaces that could cast glare toward motorists on local roadways. Additional vehicles in the vicinity of the Specific Plan Area would increase the amount of vehicular lighting. However, walls to the north of the Specific Plan Area would block light in that direction.

The Specific Plan states that:

- Lighting should be the appropriate size and height for the activities for which they are designed and utilize fixtures that minimize light pollution, glare, and visibility from adjacent areas.

With implementation of these guidelines, the increase in lighting and potential for lighting effects represents a **less-than-significant** impact.

Mitigation Measure

No mitigation measures would be required.

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3.2 AGRICULTURAL RESOURCES

This section addresses agricultural resources within the Specific Plan Area and surrounding areas. It describes Stanislaus County's agricultural uses; identifies the extent of agricultural land on-site and within Stanislaus County, including Important Farmland and Grazing Land; and describes the factors contributing to the conversion of irrigated agricultural land to non-irrigated uses. This section also determines the significance and quality of agricultural land within the Specific Plan Area and evaluates potential impacts related to agricultural resources related to the implementation of the Specific Plan.

3.2.1 ENVIRONMENTAL SETTING

Agriculture is a major economic activity throughout Stanislaus County, which is the state's sixth largest agricultural county in terms of the total value of agricultural production. Stanislaus County produces over 120 different crops, including over 30 types of fruit and nuts; over 50 types of vegetables; over 20 types of field crops; and nursery stock, livestock, poultry, dairy, and apiary products (Stanislaus County Agricultural Commissioner 2015).

The total gross valuation for all agricultural commodities produced in Stanislaus County in 2015 was approximately $3.9 billion. This value represents a decrease of approximately 12 percent from the all-time high value in 2014 of $4.4 billion. The decrease in valuation is primarily attributed to a reduction in yields for many commodities because of a sustained drought and a drop in the values of milk, walnuts, almond meats, silage, cattle and calves, and turkeys (Stanislaus County Agricultural Commissioner 2015).

In 2015, almonds had the highest crop value ($1.3 billion) and represent almost a third of Stanislaus County's production value. Milk production is the number two commodity at $648 million, followed by cattle and calves ($350 million), chickens ($304 million), and walnuts ($172 million) (Stanislaus County Agricultural Commissioner 2015).

STANISLAUS COUNTY FARMLAND CONVERSION

The California Department of Conservation's Important Farmland classifications—Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance—identify the land's suitability for agricultural production by considering physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. (See "Regulatory Framework" below, for detailed descriptions of Important Farmland classifications.)

Table 3.2-1 summarizes acreages of agricultural land in Stanislaus County between 2006 and 2016 and shows the net change in acreage over the 10-year period. The Department of Conservation estimated that Stanislaus County included 837,116 acres of agricultural land in 2006, of which 395,680 acres were identified as Important Farmland and 441,436 acres were identified as Grazing Land (DOC 2008a). Overall, the total acreage of Important Farmland increased by approximately 7.5 percent over the 10-year period between 2006 and 2016, while the total acreage of agricultural land decreased by 0.9 percent (Table 3.2-1). A similar trend continued between 2008 and 2016, with the percent of Important Farmland increasing while the overall amount of agricultural land decreasing (Table 3.2-1).

Table 3.2-1. Summary of Agricultural Land Conversion in Stanislaus County

Agricultural Land Category	Acres				Net Change (2006-2016)		Net Change (2008-2016)		Net Change (2010-2016)	
	2006	2008	2010	2016	Acres	Percent	Acres	Percent	Acres	Percent
Prime Farmland	256,605	256,165	253,434	249,967	-6,638	-2.6	-6,198	-2.4	-3,467	-1.4
Farmland of Statewide Importance	29,925	31,448	31,475	33,172	3,247	10.9	1,724	5.5	1,697	5.4
Unique Farmland	75,444	81,368	87,524	116,210	40,766	54.0	34,842	42.8	28,686	32.8
Farmland of Local Importance	33,706	31,159	31,366	26,029	-7,677	-22.8	-5,130	-16.5	-5,337	-17.0
Important Farmland Subtotal	**395,680**	**400,140**	**403,799**	**425,378**	**29,698**	**7.5**	**25,238**	**6.3**	**21,579**	**5.3**
Grazing Land	441,436	434,136	429,545	404,405	-37,031	-8.4	-29,731	-6.8	-25,140	-5.9
Agricultural Land Total	**837,116**	**834,276**	**833,344**	**829,783**	**-7,333**	**-0.9**	**-4,493**	**-0.5**	**-3,561**	**-0.4**

Source: DOC 2008a, 2012a, 2016a

The Department of Conservation field reports for Stanislaus County identify the factors contributing to changes in agricultural land uses. Between 2004 and 2008, most of the conversion of irrigated Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) was to urban land uses (DOC 2006, 2008b, 2012b). By 2010, the biggest decrease in irrigated farmland resulted from formerly irrigated Farmland of Local Importance and Grazing Land that was left land idle for three or more update cycles or from the conversion of irrigated uses to cultivation of non-irrigated grain crops (DOC 2012a). The amount of Important Farmland that increased over the 10-year period was mainly from conversions to new orchards, vineyards, and field crops and expansions of potted plant nurseries (DOC 2006b, 2008b, 2012b).

According to the Department of Conservation's most recent 2016 Field Report, the majority of irrigated Important Farmland that had a status change was converted to Farmland of Local Importance and Grazing Land by leaving formerly irrigated land idle for three or more update cycles or from the conversion of irrigated uses to the cultivation of non-irrigated grain crops. Additional Important Farmland was converted to Urban and Built-Up Land for construction of new homes and commercial buildings throughout the county and development of the Scatec Westside Solar Ranch west of Interstate 5 near the unincorporated community of Crows Landing, a new warehouse was built for Restoration Hardware in the city of Patterson, and a cold storage facility for Hilmar cheese in the City of Turlock. Conversion of Important Farmland to Other Land resulted from land that was left idle for three or more update cycles, and the construction of rural residences and agricultural processing (DOC 2016b). Conversely, Important Farmland increased, mainly from the conversion of Grazing Land and Other Land to new orchards and vineyards along the eastern foothills and expansion of a potted plant nursery near Ceres (DOC 2016b).

WILLIAMSON ACT

Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes. Stanislaus County had approximately 683,619 acres of land under Williamson Act contracts in 2013 (the most recent year for which data is available) (DOC 2015a:35).

The nonrenewal process is the most common mechanism for termination of Williamson Act contract lands. In Stanislaus County as of 2013, approximately 35,281 acres were in some stage of the 10-year nonrenewal process, approximately 65 additional acres of land under Williamson Act contracts entered the nonrenewal process through nonrenewal initiations, and the amount of contract land terminated through nonrenewal expirations (i.e., contracts expirations that occurred in 2013)was approximately 582 acres (DOC 2015a). In the City's Planning Area, there are 2,963 acres under Williamson Act contracts (Dyett and Bhatia 2016:74).

None of the Specific Plan Area is under a Williamson Act contract. One parcel under a Williamson Act contract, characterized as Prime Farmland, is located south of East Whitmore Avenue and west of Faith Home Road, approximately 0.3 mile east of the Specific Plan Area (Exhibit 3.2-1).

EXISTING AGRICULTURAL USES

City of Ceres

Table 3.2-2 summarizes the acreages of the Department of Conservation's FMMP land use categories within the City's Planning Area.[1] As shown in Table 3.2-2, the City's Planning Area included 6,790.7 acres of agricultural land (47.3 percent of the Planning Area), of which 6,673 acres were identified as Important Farmland and 117.7 acres were identified as Grazing Land. The majority of the areas identified as Important Farmland are located outside of the City limits. Urban and Built-Up Land and Other Land comprised approximately 52.7 percent of the Planning Area.

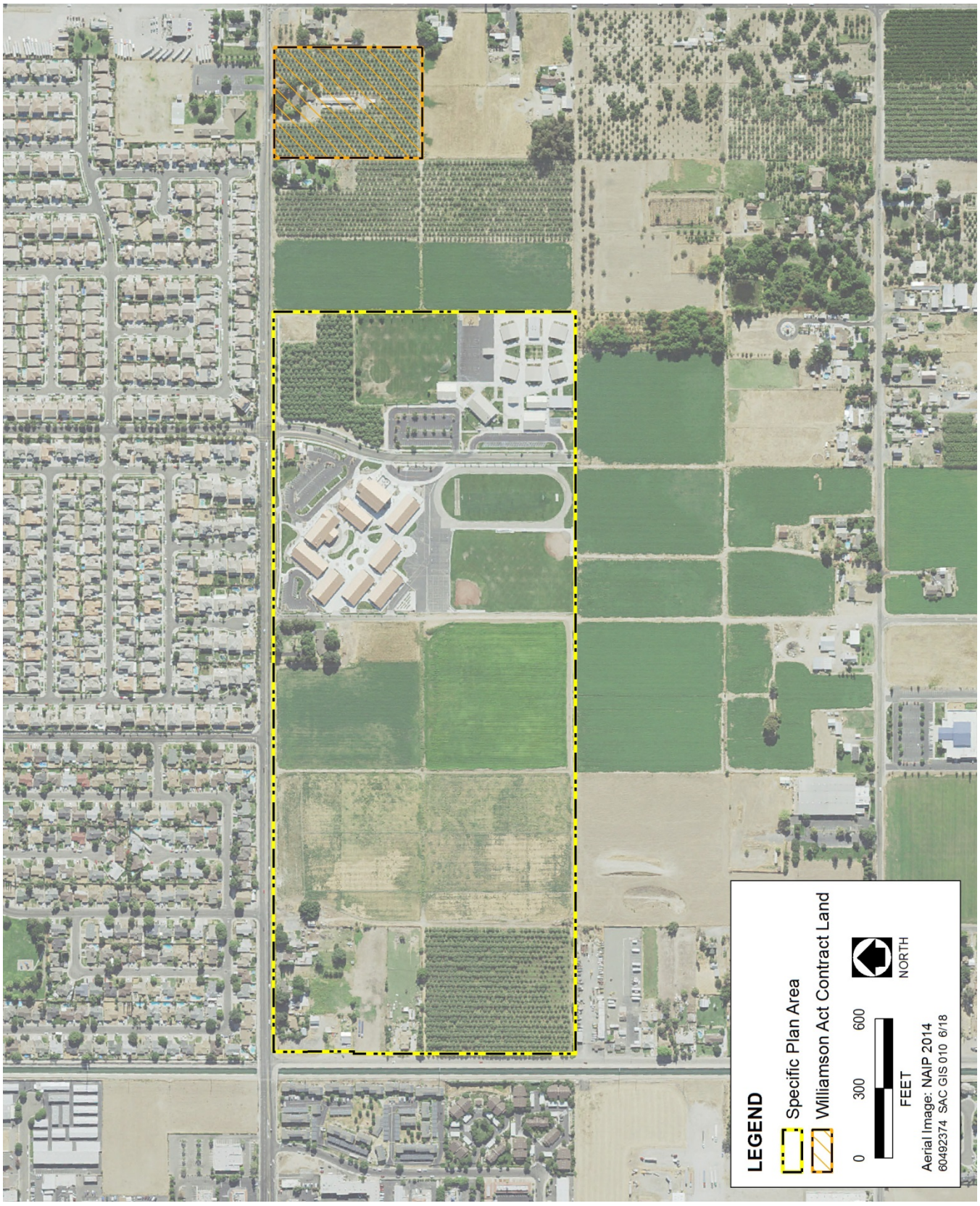
Table 3.2-2 further shows the acreages of within the incorporated City limits, the vast majority of land is urbanized, although the area covered by the West Landing Specific Plan in the western portion of the Planning Area is Prime Farmland and Unique Farmland. Outside of the city limits but within the Planning Area, most of the land is undeveloped and categorized as Prime Farmland with pockets of Farmland of Statewide Importance and Unique Farmland (Dyett and Bhatia 2016).

Table 3.2-2. Summary of the California Department of Conservation Land Use Categories in the City of Ceres Planning Area

Agricultural Land Category	Planning Area Total		Incorporated		Unincorporated	
	Acres	Percent	Acres	Percent	Acres	Percent
Prime Farmland	6,462.6	45.0	618.6	10.3	5,844.0	69.8
Farmland of Statewide Importance	88.1	0.6	0.6	0.0	87.5	1.0
Unique Farmland	122.3	0.9	76.7	1.3	45.6	0.5
Important Farmland Subtotal	**6,673**	**46.5**	**695.9**	**11.6**	**5,977.1**	**71.3**
Grazing Land	117.7	0.8	39.4	0.7	78.3	0.9
Agricultural Land Subtotal	**6,790.7**	**47.3**	**735.3**	**12.3**	**6,055.4**	**72.2**
Urban and Built-Up Land	6,495.9	45.2	4,994.2	83.4	1,501.8	17.9
Other Land	1,070.6	7.5	259.8	4.3	810.7	9.9
Total	**14,357.2**	**100.0**	**5,989.3**	**100.0**	**8,367.9**	**100.0**

Source: Dyett and Bhatia 2016:77

[1] City of Ceres Planning Area consists of the area within the city limits, the area within its sphere of influence, and areas within the adjacent unincorporated areas where the City anticipates annexation in the future.



Source: DOC 2016

Exhibit 3.2-1 Williamson Act Contract Land

Specific Plan Area

The Specific Plan Area has almond orchards in the southwest and northeast corners and alfalfa, oats, and rye hay in the central portion of the Specific Plan Area. Some portions are fallow or not currently under production. Areas south and east of the Specific Plan Area consist largely of agricultural production, including commercial almond orchards and open field crops.

According to the Stanislaus County Important Farmland map, published by the California Division of Land Resource Protection (DOC 2016c), approximately 56.6 acres of land within the Specific Plan Area is designated as Prime Farmland. Of this acreage, approximately 51.7 acres of Prime Farmland is generally located west of the La Rosa Elementary School and the Ceres Chavez Junior High School and in the southwest corner of the Specific Plan Area. The remaining 4.9 acres of Prime Farmland is located in the northeast corner of the Specific Plan Area. Additional land designated as Prime Farmland is located south and east of the Specific Plan Area (Exhibit 3.2-2). Active agricultural land uses on and adjacent to the Specific Plan Area coincide with this farmland designation.

Approximately 37.8 acres of land within the Specific Plan Area is designated as Urban and Built-Up Land, and the residential uses in the northwestern corner of the Specific Plan Area, La Rosa Elementary School, and the Ceres Chavez Junior High School and correspond to this designation.

Agricultural Zoning

The Specific Plan Area and surrounding properties to the south and east are currently in unincorporated Stanislaus County. Approximately 78 acres of the Specific Plan Area and parcels east and south of the Specific Plan Area are zoned by the County for General Agriculture with a 10-acre minimum lot size (A-2-10). The A-2 zoning designation is intended to support and enhance agriculture as the predominant land use in the unincorporated areas of the county; to protect open space lands; and to ensure that all land uses are compatible with agriculture and open space, including natural resources management, outdoor recreation, and enjoyment of scenic beauty.

3.2.2 REGULATORY FRAMEWORK

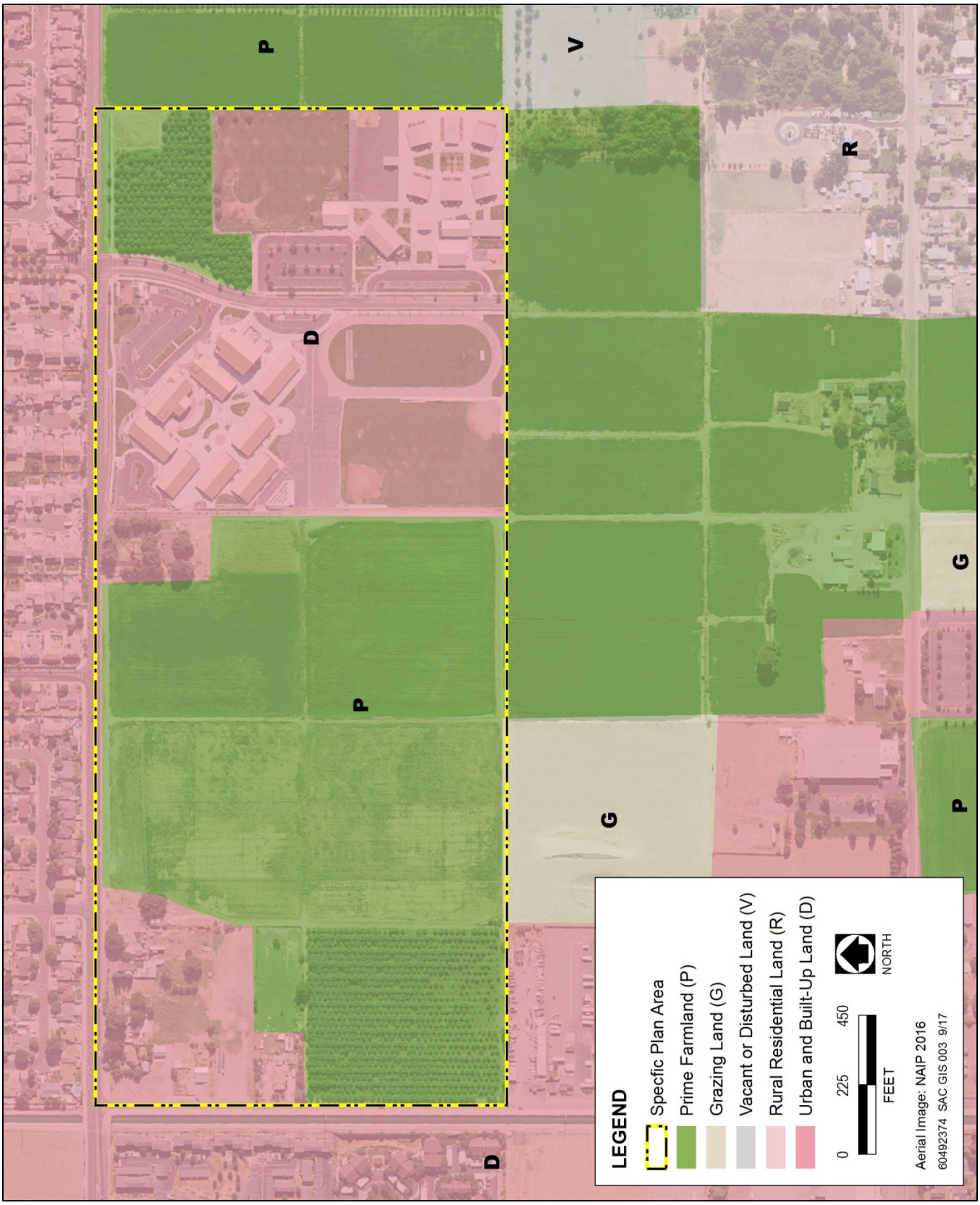
FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulation, or laws pertaining to agricultural resources are applicable to this project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Important Farmland Inventory System and Farmland Mitigation and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (now called the Natural Resources Conservation Service, under the U.S. Department of Agriculture). The intent was to produce agricultural resource maps, based on soil quality and land use across the nation. The Department of Conservation sponsors the FMMP and also is responsible for establishing agricultural easements, in accordance with California Public Resources Code Sections 10250–10255.



Source: DOC 2016c

Exhibit 3.2-2 Important Farmland

The Department of Conservation FMMP maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. The following list provides a comprehensive description of all the categories mapped by the Department of Conservation (DOC 2015b):

- **Prime Farmland**—Land that has 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.
- **Farmland of Statewide Importance**—Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.
- **Unique Farmland**—Land of lesser quality soils used for the production of the state's leading agricultural cash crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California.
- **Farmland of Local Importance**—Land that is of importance to the local agricultural economy, as defined by each county's local advisory committee and adopted by its board of supervisors. The Stanislaus County Board of Supervisors has defined Farmland of Local Importance to consist of farmlands growing dryland pasture, dryland small grains, and irrigated pasture.
- **Grazing Land**—Land with existing vegetation that is suitable for grazing.
- **Urban and Built-Up Lands**—Land that is used for residential, industrial, commercial, institutional, and public utility structures and for other developed purposes.
- **Other Lands**—Land that does not meet the criteria of any of the previously described categories and generally includes low-density rural developments, vegetative and riparian areas not suitable for livestock grazing, confined-animal agriculture facilities, strip mines, borrow pits, and vacant and nonagricultural land surrounded on all sides by urban development. In Stanislaus County, Other Land is further divided into five subcategories: Rural Residential Land, Semi-Agricultural and Rural Commercial, Vacant and Disturbed Land, Defined Animal Agriculture, Nonagricultural and Natural Vegetation.

Important Farmland is classified by the Department of Conservation as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Under CEQA, the designations for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are defined as "agricultural land" or "farmland" (Public Resources Code Sections 21060.1 and 21095, and CEQA Guidelines Appendix G).

Williamson Act

The California Land Conservation Act of 1965 (the Williamson Act) is one of the State's primary agricultural conservation tools. Under this law, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes. Williamson Act contracts are required to be a minimum initial term of 10 years, and are automatically extended each year for an additional year, unless either party (landowner or the contracting city or county) notifies the other of the intent not to renew the contract. In return, the landowner is guaranteed a relatively stable tax rate, based on the value of the land for agricultural/open space use, rather the potential value of the land for development.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Stanislaus County Local Agency Formation Commission

The Stanislaus County Local Agency Formation Commission (LAFCO), which is charged with approving changes in jurisdictional limits and public service areas, also reviews proposals in relation to their impact to agricultural lands.

Policy 22 – Agricultural Preservation Policy

Stanislaus LAFCO considers the Agricultural Preservation Policy as an evaluation standard for review of those proposals that could reasonably be expected to induce, facilitate, or lead to the conversion of agricultural land. In addition, according to Government Code Section 56668, among the factors to be considered by LAFCO in reviewing organizational and boundary changes is, "the effect of the proposal on maintaining the physical and economic integrity of agricultural lands" (LAFCO 2015).

Consistent with the legislative intent of LAFCO, the goals of this policy are as follows:

- Guide development away from agricultural lands where possible and encourage efficient development of existing vacant lands and infill properties within an agency's boundaries prior to conversion of additional agricultural lands.
- Fully consider the impacts a proposal will have on existing agricultural lands.
- Minimize the conversion of agricultural land to other uses.
- Promote preservation of agricultural lands for continued agricultural uses while balancing the need for planned, orderly development and the efficient provision of services.

A. Plan for Agricultural Preservation Requirement

Upon application for a sphere of influence expansion or annexation to a city or special district ("agency") providing one or more urban services (i.e., potable water, sewer services) that includes agricultural lands, a Plan for Agricultural Preservation must be provided with the application to LAFCO. The purpose of a Plan for Agricultural Preservation is to assist the Commission in determining how a proposal meets the stated goals of this Policy.

The Plan for Agricultural Preservation shall include: a detailed analysis of direct and indirect impacts to agricultural resources on the site and surrounding area, including a detailed description of the agricultural resources affected and information regarding Williamson Act Lands; a vacant land inventory and absorption study evaluating lands within the existing boundaries of the jurisdiction that could be developed for the same or similar uses; existing and proposed densities (persons per acre); relevant County and City General Plan policies and specific plans; consistency with regional planning efforts (e.g., the San Joaquin Valley Blueprint and the Sustainable Communities Strategy); and an analysis of mitigation measures that could offset impacts to agricultural resources. The Plan for Agricultural Preservation should be consistent with documentation prepared by the Lead Agency in accordance with the California Environmental Quality Act (CEQA). The Plan for Agricultural Preservation shall specify the method or strategy proposed to minimize the loss of agricultural lands.

Stanislaus LAFCO encourages the use of one or more of the following strategies:

1. Removal of agricultural lands from the existing sphere of influence in order to offset, in whole or in part, a proposed sphere of influence expansion or redirection.

2. An adopted policy or condition requiring agricultural mitigation at a ratio of at least 1:1. This can be achieved by acquisition and dedication of agricultural land, development rights and/or conservation easements to permanently protect agricultural land, or payment of in-lieu fees to an established, qualified, mitigation program to fully fund the acquisition and maintenance of such agricultural land, development rights or easements, consistent with Section B-2 of this Policy.

Stanislaus County Right-to-Farm Ordinance

As stated in City General Plan Policy4.A.6, the City supports Stanislaus County's Right-to-Farm Ordinance (Section 9.32.050, "Right-to-Farm Notice," in Chapter 9.32, "Agricultural Land Policies," of the Stanislaus County Municipal Code). The County's Right-to-Farm Ordinance ensures that agricultural operations that are operated in a manner consistent with proper and accepted customs and standards are allowed to continue. This Ordinance also requires that notification be provided to residents of property on or near agricultural land to prepare residents to accept inconveniences or discomforts that can be associated with agricultural operations, including but not limited to noise, odors, flies, fumes, dust, the operation of machinery of any kind during any 24-hour period (including aircraft), the storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to agricultural resources are applicable to the proposed Specific Plan.

Land Use and Community Character

- **Policy 2.A.3 Compact Footprint**. Promote compact development patterns, mixed land uses, and higher-development intensities and limit "leap frog" development to conserve agricultural land, reduce vehicle trips, and improve air quality.

- **Policy 2.A.4 Urban/Agriculture Compatibility**. Minimize conflict between urban and agricultural uses.

- **Policy 2.I.2 Area-wide Plans**. Use area-wide plans (i.e., master plans or specific plans) to comprehensively plan for new neighborhood developments. Each residential area-wide plan should at minimum address the following [among others]:

    - Provisions for minimizing conflicts between new development and adjacent agricultural uses.

Agricultural and Natural Resources

- **Policy 4.A.1 Land Use Pattern**. Prioritize infill development, allowing development on agricultural lands only where contiguous to existing urban development and when it advances the city's overall growth and development objectives. Encourage compact development that concentrates development in urbanized areas

in order to limit the conversion of agricultural land and minimize the potential for land use conflicts along the urban/agricultural interface.

- **Policy 4.A.2 Urban Expansion in Agricultural Areas**. Ensure that development and the expansion of infrastructure in urban areas do not encourage the expansion of urban uses into areas designated for Agriculture on the Land Use Diagram, or otherwise reduce the viability of agricultural operations on lands designated for Agriculture.

- **Policy 4.A.3 Continued Production**. Support continued agricultural production on properties within the Planning Area until development is proposed.

- **Policy 4.A.5 Land Use Compatibility**. Ensure that new development adjacent to agricultural uses is compatible with the continuation of the agricultural uses by minimizing conflicts through appropriate design criteria, such as site layout, landscaping, and buffers to provide adequate separation between habitable structures and active farmland.

- **Policy 4.A.6 Right to Farm**. Continue to support the County's Right-to-Farm ordinance.

3.2.3 Environmental Impacts and Mitigation Measures

Methodology

The evaluation of the potential impacts of the proposed Specific Plan on agricultural resources was based on a review of field conditions, aerial photographs, and policy guidance from Stanislaus LAFCO and the *City of Ceres 2035 General Plan* (City of Ceres 2018).

The Important Farmland Map for Stanislaus County, produced by the Department of Conservation Division of Land Resource Protection (DOC 2014d), and Williamson Act Contract Map (DOC 2009, 2016) for Stanislaus County was used to evaluate the agricultural significance of the lands in the Specific Plan Area. Geographic information systems (GIS) data were used to determine the potential acreage of designated farmland affected by implementation of the proposed Specific Plan. Appendix G of the CEQA Guidelines focuses the analysis on conversion of agricultural land on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; therefore, any conversion of these lands would be considered a significant impact under CEQA.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, an impact on agricultural resources is considered significant if the proposed project would:

- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use;

- conflict with existing zoning for agricultural use or a Williamson Act contract;

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

- result in the loss of forestland or conversion of forestland to nonforest use; or
- involve other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use.

ISSUES NOT CONSIDERED FURTHER IN THIS EIR

- **Conflict with Existing Zoning for Agricultural Use**—The Specific Plan Area is zoned for General Agriculture with a 10-acre minimum lot size (A-2-10). The A-2 zoning designation is intended to support and enhance agriculture as the predominant land use in the unincorporated areas of the county, to protect open space lands, and to ensure that all land uses are compatible with agriculture and open space. Implementation of the Specific Plan would change the zoning designation to Planned Community (P-C), which would permit development of the proposed Specific Plan. With approval of the proposed Specific Plan, annexation of the Specific Plan Area into the City of Ceres, and associated zoning changes, the proposed Specific Plan would not conflict with zoning for agricultural use (see Section 3.10, "Land Use and Planning," for further discussion). Therefore, this issue is not evaluated further in this EIR.
- **Conflict with Existing Williamson Act Contract**— No lands are under Williamson Act contract in the Specific Plan Area. Therefore, implementing the proposed Specific Plan would not conflict with an existing Williamson Act contract. This issue is not evaluated further in this EIR.
- **Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production**—The Specific Plan Area is not zoned as forestland, timberland, or a Timberland Production Zone. Thus, the proposed Specific Plan would not conflict with existing zoning for, or cause rezoning of, forestry resources and this issue is not evaluated further in this EIR.
- **Result in the Loss of Forest Land or Conversion of Forest Land to Non-Forest Use**—The Specific Plan Area does not contain timberland as defined by Public Resources Code Section 4526 or contain 10 percent native tree cover that would be classified as forestland under Public Resources Code Section 12220(g). Thus, the proposed Specific Plan would not result in conversion of forest land to non-forest use. Therefore, this issue is not evaluated further in this EIR.

IMPACTS AND MITIGATION MEASURES

IMPACT 3.2-1 **Loss of Important Farmland and Conversion of Agricultural Land to Nonagricultural Urban Uses.** *Implementation of the Specific Plan would result in the permanent conversion agricultural land, including Important Farmland, to urban uses. This impact is considered* ***significant****.*

Implementation of the Specific Plan would permanently convert agricultural land, including Important Farmland, to nonagricultural uses. The existing agricultural uses in the Specific Plan Area include almond orchards in the southwest and northeast corners and cultivation of alfalfa, oats, and rye hay in the central portion of the Specific Plan Area.

The City's 2035 General Plan includes goals and policies to ensure orderly growth, to prevent the premature conversion of agricultural land, and to promote the preservation and productivity of agricultural land surrounding Ceres and the viability of Stanislaus County's agriculture (Policies 4.A.1 and 4.A.2 of the City's 2035 General

Plan). Policies 4.A.3 and 4.A.5 encourage continued agricultural production on properties within the Urban Growth Area until they are needed for urban development.[2] The General Plan does not include policies or implementation programs that specify mitigation requirements for the conversion of agricultural land to nonagricultural uses.

As discussed above, the Stanislaus County LAFCO, which is charged with approving changes in jurisdictional limits and public service areas, also reviews proposals in relation to their impact to agricultural lands. According to Government Code Section 56668, among the factors to be considered by LAFCO in reviewing organizational and boundary changes is, "the effect of the proposal on maintaining the physical and economic integrity of agricultural lands" (LAFCO 2015). Policy 22 of the LAFCO Policies and Procedures is intended to guide development away from agricultural lands where possible and encourage efficient development of existing vacant lands and infill properties; fully consider the impacts a proposal will have on existing agricultural lands; minimize the conversion of agricultural land to other uses; and promote preservation of agricultural lands for continued agricultural uses while balancing the need for planned, orderly development and the efficient provision of services. Policy 22 describes strategies for the conservation of agricultural land consistent with LAFCO policies and requires preparation of a Plan for Agricultural Preservation to assist the Commission in determining how a proposal meets the stated goals of Policy 22.

Based on analysis of the Stanislaus County Important Farmland map (DOC 2016c), approximately 51.7 acres of Prime Farmland on the Specific Plan Area would be directly and permanently converted to nonagricultural, residential uses and parks/open space. In 2016, approximately 249,967 acres of Prime Farmland existed in Stanislaus County of which 6,463 acres of Prime Farmland were located in the City's Planning Area (Tables 3.2-1 and 3.2-2). A conversion of approximately 51.7 acres of Prime Farmland would account for approximately less than one percent of the total Prime Farmland in Stanislaus County as a whole, as well as less than one percent of total Prime Farmland in the City's Planning Area. However, Appendix G of the CEQA Guidelines considers the conversion of Prime Farmland a significant impact under CEQA. Therefore, the impact associated with direct conversion of Prime Farmland in the Specific Plan Area is considered **significant**.

Mitigation Measure

Mitigation Measure 3.2-1: Mitigate Loss of Important Farmland.

Prior to the approval of improvement plans, building permits, or recordation of the final map, project applicants for projects in the Specific Plan Area shall offset the loss of Prime Farmland. This shall be done through the acquisition of conservation easements in Stanislaus County at a 1:1 ratio (i.e., 1 acre on which easements are acquired to 1 acre of Prime Farmland removed from agricultural use) that provide in-kind or similar resource value protection; or payment of in-lieu fees to an established, qualified, mitigation program to fully fund the acquisition and maintenance of agricultural land or easements; or compliance with the City's Plan for Agricultural Preservation, as adopted by Stanislaus LAFCO in accordance with LAFCO Policy 22.

[2] The Urban Growth Area is divided into two phases: Phase 1 encompasses all land envisioned for development through 2015 and Phase 2 designates a Residential Reserve and an Industrial Reserve for areas intended for future planning and development after 2015. The Specific Plan Area is located within Phase 1 of the Urban Growth Area.

Significance after Mitigation

Mitigation Measure 3.2-1 would require 1:1 conservation of Prime Farmland. However, no new farmland would be made available and a net loss of Important Farmland would occur. There is no additional feasible mitigation available that would reduce impacts associated with the permanent conversion of agricultural land, including Prime Farmland, to a less-than-significant level. This impact would remain **significant and unavoidable**.

IMPACT 3.2-2 Conflict with Existing On-Site and Off-Site Agricultural Operations. *Implementation of the Specific Plan would locate residential land uses adjacent to existing on-site and off-site agricultural lands, resulting in potential conflicts with adjacent agricultural operations. This impact is considered* ***potentially significant****.*

Agricultural-urban interfaces have the potential for conflicts between agricultural practices and adjacent urban land uses. Health risks and nuisances potentially created by agricultural operations in the project area include, but are not limited to, exposure to pesticide and herbicide applications, exposure to dust (from soil preparation), exposure to noise (from machinery and trucks), and odors. Conversely, urban development could generate air pollution that could be harmful to crops, in certain instances and could result in vandalism, and the introduction of domestic animals that may disturb certain agricultural activities.

City 2035 General Plan Policies 2.A.4 and 2.I.2 requires new development to minimize conflicts with adjacent agricultural uses. Further, City 2035 General Plan Policy 4.A.6 states the City will continue to support the County's right-to-farm ordinance.

As described above, the Specific Plan Area has almond orchards in the southwest and northeast corners and alfalfa, oats, and rye hay in the central portion of the Specific Plan Area. Under existing conditions, on-site agricultural uses are surrounded by residential and school uses. Residential land uses would be developed in phases in the Specific Plan Area and agricultural production could potentially continue within the Specific Plan Area until these lands are ready to be developed, resulting in potential conflicts when the development edge is adjacent to ongoing agricultural operations on undeveloped portions of the Specific Plan Area. These conflicts would be resolved as the Specific Plan Area is developed.

Areas south of the Specific Plan Area consist largely of agricultural production, including open field crops. The Specific Plan would develop residential uses adjacent to existing off-site agricultural lands along the center portion of the southern border of the Specific Plan Area in unincorporated Stanislaus County, resulting in potential conflicts with adjacent off-site ongoing agricultural operations. Under existing conditions, agricultural lands on-site are adjacent to residential uses to the north and west and school uses to the east. After development of the Specific Plan Area, the only potential conflicts would exist along the southern boundary, and would only exist between agricultural uses and residential uses.

Instead of backing up directly to adjacent existing agricultural uses south of the Specific Plan Area, residential uses in the southeastern and southwestern portion of the Specific Plan Area, along the southern border of the Specific Plan Area would be set back from the off-site agricultural operations by Stanford Avenue. The Specific Plan allows for a range of lotting patterns and design approaches that would satisfy its development standards and design guidelines. If future development includes lots that back onto Stanford Avenue, they would incorporate landscaped buffers and have a relatively deeper rear yard – deeper than the minimum provided by the applicable development standards, if needed (Specific Plan Section 4.4.3, Residential Neighborhood Guidelines).

While the County's buffer guidelines would not be applicable once the Specific Plan Area is annexed to the City, it should be noted that the distance between existing off-site agricultural uses are less than the County's recommended buffer of 150 feet between active agricultural land and new non-agricultural uses. However, areas south of the Specific Plan Area are located in the City's SOI and within Phase 1 of the City's Urban Growth Area, which indicates that these areas have been planned for urban development. Potential conflicts with adjacent off-site agricultural uses along the southern border of the Specific Plan Area could potentially occur until these lands are developed with urban land uses, depending on crop types and agricultural practices. Lands south of the Specific Plan Area in are designated Service Commercial, Light Industrial, and Low-Density Residential in the City's 2035 General Plan.

Although a buffer zone would be established between the edge of development in the southwestern and southeastern portions of the Specific Plan Area and adjacent on-site and off-site agricultural land, conflicts could still occur between agricultural and urban land uses, depending on crop types and agricultural practices. This impact is considered **potentially significant**.

Mitigation Measure

> Mitigation Measure 3.2-2: Provide the County's Right-to-Farm Notice to Prospective Residents Adjacent to Active Agricultural Uses.
>
> Project applicant(s) for residential uses within the Specific Plan Area shall provide Stanislaus County's Right-to-Farm Notice (Section 9.32.050, in Chapter 9.32 of the Stanislaus County Municipal Code) to all prospective homebuyers within 150 feet of the southern Specific Plan Area boundary. The Right-to-Farm Notice shall be included in all residential deeds at the time of sale. The Right-to-Farm Notice shall contain, and be substantially in the form of the following (Section 9.32.050[F]):
>
> "The County of Stanislaus recognizes and supports the right to farm agricultural lands in a manner consistent with accepted customs and standards. Residents of property on or near agricultural land should be prepared to accept the inconveniences or discomforts associated with agricultural operations, including but not limited to noise, odors, flies, fumes, dust, the operation of machinery of any kind during any 24-hour period (including aircraft), the storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. Stanislaus County has determined that inconveniences or discomforts associated with such agricultural operations shall not be considered to be a nuisance if such operations are consistent with accepted customs and standards. Stanislaus County has established a grievance committee to assist in the resolution of any disputes which might arise between residents of this County regarding agricultural operations. If you have any questions concerning this policy or the grievance committee, please contact the Stanislaus County Department of Planning and Community Development."

Significance after Mitigation

Implementation of Mitigation Measure 3.2-2 would require project applicants to provide a Right-to Farm Notice to notify prospective residents of potential land use conflicts associated with agricultural activities adjacent to the Specific Plan Area. Although this would substantially lessen potential conflicts, it would not reduce the impact to a less-than-significant level. Other than precluding development adjacent to agricultural lands, no other feasible mitigation is available to eliminate potential urban/agricultural interface land use conflicts. It is not feasible to

preclude development in this location, since it has been long planned for development, along with areas south of the Specific Plan Area that could potentially accommodate agricultural areas until they are annexed to, and developed within the City of Ceres. This impact would remain **significant and unavoidable**.

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3.3 AIR QUALITY

This section describes existing local and regional air quality conditions, summarizes applicable regulations, and addresses potential air quality impacts attributable to implementation of the Specific Plan. Existing air quality conditions were obtained from various sources including the San Joaquin Valley Air Pollution Control District (SJVAPCD), California Air Resources Board (ARB), and other studies evaluating air quality and sources of emissions in the vicinity of the Specific Plan Area.

3.3.1 ENVIRONMENTAL SETTING

The Whitmore Ranch Specific Plan (Specific Plan) Area is located adjacent to the City of Ceres within the San Joaquin Valley Air Basin (SJVAB). The SJVAB includes all of Fresno, Kings, Madera, Merced, San Joaquin, and Tulare counties, and the valley portion of Kern County.

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Air quality is influenced by such factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

TOPOGRAPHY, METEOROLOGY, AND CLIMATE

San Joaquin Valley Air Basin

The SJVAB, which occupies the southern half of the Central Valley, is approximately 250 miles long and, on average, 35 miles wide. The SJVAB is a well-defined climatic region with distinct topographic features on three sides. The Coast Ranges, which have an average elevation of 3,000 feet, are located on the western boundary of the SJVAB. The San Emigdio Mountains, which are part of the Coast Ranges, and the Tehachapi Mountains, which are part of the Sierra Nevada, are both located on the south side of the SJVAB. The Sierra Nevada forms the eastern border of the SJVAB. The northernmost portion of the SJVAB is San Joaquin County. There is no topographic feature delineating the northern edge of the basin. The SJVAB can be considered a "bowl," open only to the north.

Much of the terrain associated with the SJVAB is flat, with a downward gradient to the northwest. Air flows into the SJVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin River Delta from the San Francisco Bay area. The mountains that form the boundary for much of the SJVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. As a result, the SJVAB is highly susceptible to pollutant accumulation over time.

The inland Mediterranean climate type of the SJVAB is characterized by hot, dry summers and cool, rainy winters. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell. During summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface as a result of the northwesterly flow produces a band of cold water off the California coast. The local meteorology of the area is represented by measurements recorded at the Modesto City-

County Airport weather station (Station 045738) (Western Regional Climate Center 2017). The monthly average temperatures recorded at this station range between 1906 and 2016 from 37.6 degrees Fahrenheit (°F) in January to 94.3 °F in July. The annual average temperature for this station is 74.6 °F. December, January, and February typically are the coldest months in this area. Annual rainfall mostly occurs between November and April, with an average of approximately 12.21 inches a year.

The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. Precipitation and fog tend to reduce or limit some pollutant concentrations. For instance, clouds and fog block sunlight, which is required to fuel photochemical reactions that form ozone. Because carbon monoxide (CO) is partially water-soluble, precipitation and fog also tend to reduce concentrations in the atmosphere. In addition, respirable particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) can be washed from the atmosphere through wet deposition processes (*e.g.*, rain). However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions resulting in the accumulation of pollutant concentrations (*e.g.*, CO and PM_{10}).

Summer is considered the peak ozone season in the SJVAB. This season is characterized by poor air movement in the mornings and longer daylight hours, which provide a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X), which form ozone. During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the San Joaquin Valley and flows in a south-southeasterly direction through the San Joaquin Valley, through Tehachapi Pass and into the Southeast Desert Air Basin.

EXISTING AIR QUALITY—CRITERIA AIR POLLUTANTS

Concentrations of criteria air pollutant emissions are used as indicators of ambient air quality conditions. These pollutants can harm human and environmental health, and, as a result, an assessment of criteria air pollutant emissions is a focus of air quality analysis and reporting. A brief description of each criteria air pollutant is provided below.

Ozone

Ozone (O_3) is the principal component of smog and is formed in the atmosphere through a series of reactions involving ROG and NO_X in the presence of sunlight. ROG and NO_X are called precursors of O_3. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide (NO), nitrogen dioxide (NO_2), and others. O_3 is a principal cause of lung and eye irritation in the urban environment. Significant O_3 concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in O_3 formation.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are most susceptible to O_3 effects. Short-term exposure (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological (molecular/cellular) changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high O_3 levels.

Carbon Monoxide

CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. Effects include earlier onset of chest pain with exercise and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Nitrogen Oxides

NO_X emissions are primarily generated from the combustion of fuels. Nitrogen oxides include nitric oxide (NO) and NO_2. NO_2 is formed when O_3 reacts with NO in the atmosphere and is listed as a criteria pollutant because NO_2 is the more toxic than NO. NO_2 is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. NO_2 is a principal contributor to O_3 and smog generation and can provoke lung irritation and lung damage.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children, is associated with long-term exposure to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. SO_2 in the atmosphere contributes to the formation of acid rain.

In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not

been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. The United States Environmental Protection Agency (EPA) began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death.

Particulate Matter

Particulate matter is a complex mixture of extremely small particles and liquid droplets. Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulate matter include windblown dust and ocean spray. The size of particulate matter is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects and even death.

Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. The size of particles is directly linked to the potential for causing health problems. Small particles less than 10 microns in diameter (10 µm), or PM_{10} can get deep into lungs and the bloodstream. Since particles are smaller, (respirable particulate matter with an aerodynamic diameter of 2.5 microns or less) $PM_{2.5}$ will travel further into the lungs. Exposure to such particles can affect both the lungs and heart. Numerous scientific studies have linked part particle pollution exposure to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. EPA groups particulate matter into two categories, which are described below.

Particulate Matter Less than 10 Microns

Particulate matter with a diameter size equal to or less than 10 microns is referred to as PM_{10}. PM_{10} includes both fine and coarse dust particles. Fine particles are known as $PM_{2.5}$. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM_{10} is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

Fine Particulate Matter Less than 2.5 Microns

Fine particulates, such as those found in smoke and haze, are $PM_{2.5}$. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases, such as SO_2 and nitrogen oxides, in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.

Monitoring Station Data and Attainment Status Area Designations

Concentrations of criteria air pollutants are measured at two monitoring stations in Stanislaus County. The Modesto – 14th Street monitoring station, located at 814 14th Street, Modesto, California, 95354 is closest to the project site. Table 3.3-1 summarizes the air quality data from the most recent three years monitored at the Modesto – 14th Street monitoring station, with the exception of NO_2 which is from the next closest monitoring station of Turlock – South Minaret Street located at 900 South Minaret Street, Turlock, California, 95380.

Table 3.3-1. Ambient Air Quality Summary – Modesto – 14th Street Air Monitoring Station

Pollutant Standards	2013	2014	2015
Nitrogen Dioxide (NO_2)[1]			
Maximum concentration (1-hour, ppb)	54.0	55.0	42.0
Number of days state standard exceeded	0	0	0
Annual average (ppm)	11	10	9
Ozone (O_3)			
Maximum concentration (1-hour/8-hour average, ppm)	0.088/0.082	0.103/0.090	0.111/0.093
Number of days state standard exceeded (1-hour)	0	1	5
Number of days 8-hour standard exceeded (National/California)	2/13	12/24	16/23
Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$) (National/California)	83.2/83.2	58.2/58.2	44.0/46.4
Number of days national standard exceeded (estimated/measured)	37.6/37	17/17	*/4
Annual average concentration ($\mu g/m^3$) (National/California)	14.3/14.4	11.3/11.4	*/*
Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$) (National/California)	73.0/98.8	122.5/127.7	85.6/90.3
Number of days national standard exceeded (estimated/measured)	0/0	0/0	0/0
Number of days state standard exceeded (estimated/measured)	57.7/18	37.6/37	31.1/31
Annual average ($\mu g/m^3$) (National/California)	30.4/31.0	29.1/30.0	27.0/30.0

Notes: $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; ppm = parts per million

* Insufficient data to determine the value.

[1] Data from next closest monitoring station: Turlock – South Minaret Street

Source: ARB 2017b.

Both the California Air Resources Board (ARB) and the Environmental Protection Agency (EPA) use monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and initiate planning efforts for improvement. Three basic designations are used to describe air quality: "nonattainment," "attainment," and "unclassified." The unclassified designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the

nonattainment designation, called "nonattainment-transitional." The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment.[1]

As shown in Table 3.3-1, ambient air concentration of NO_2 has not exceeded the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) in the past 3 years. The 8-hour O_3 NAAQS/CAAQS concentration was exceeded in 2013, 2014, and 2015, while 1-hour O_3 CAAQS concentration was only exceeded in 2014 and 2015. The concentration of $PM_{2.5}$ exceeded the 24-hour NAAQS each year and the PM_{10} concentration exceeded the CAAQS for each year, but not the NAAQS in the past 3 years.

REGIONAL EMISSION SOURCES

Sources of criteria air pollutant emissions in Stanislaus County include stationary, area, and mobile sources. According to Stanislaus County's emissions inventory, mobile sources are the largest contributor to the estimated annual average air pollutant levels of NO_X, accounting for approximately 85 percent of the total emissions. Mobile sources also account for approximately 25 percent of the total ROG emissions for the County. Areawide sources account for approximately 88 percent and 70 percent of the County's total PM_{10} and $PM_{2.5}$ emissions, respectively. With respect to ozone levels shown in Table 3.3-2, which are dependent on ROG and NO_X levels in the atmosphere, the SJVAB is considered a NO_X-limited area (SJVAPCD 2013, p. 2-8). In other words, NO_X is the limiting factor (or precursor) in ozone production. Therefore, limiting the NO_X emissions shown in Table 3.3-2 (mostly mobile sources) will typically have a greater effect of reducing regional ozone levels in SJVAB.

Table 3.3-2. Summary of 2012 Estimated Emissions Inventory for Stanislaus County

Source Type/Category	Estimated Annual Average Emissions (Tons per Day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Stationary Sources				
Fuel Combustion	0.18	2.81	0.32	0.32
Waste Disposal	3.34	-	0	0
Cleaning and Surface Coating	3.15	-	0.04	0.03
Petroleum Production and Marketing	0.91	0.00	0.00	0.00
Industrial Processes	1.26	0.61	1.13	0.48
Subtotal (Stationary Sources)	**8.84**	**3.45**	**1.53**	**0.85**
Areawide Sources				
Solvent Evaporation	5.64	-	-	-
Miscellaneous Processes	15.52	1.13	23.73	4.65
Subtotal (Areawide Sources)	**21.16**	**1.13**	**23.73**	**4.65**
Mobile Sources				
On-Road Motor Vehicles	6.28	16.94	1.09	0.64
Other Mobile Sources	3.67	9.52	0.57	0.53
Subtotal (Mobile Sources)	**9.95**	**26.46**	**1.66**	**1.17**
Grand Total for Stanislaus County	**39.94**	**31.04**	**26.92**	**6.67**

Notes: "-" = less than 0.1 Ton per day. 2012 data was the most recently available data at the time of writing.
Totals may not appear to add exactly due to rounding
Source: ARB 2013

[1] The current State and national attainment designations for the SJVAB are shown in Table 3.3-3 for each criteria air pollutant.

EXISTING AIR QUALITY—TOXIC AIR CONTAMINANTS

Concentrations of toxic air contaminants (TACs), or in federal terminology, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health.[2]

According to the California Almanac of Emissions and Air Quality (ARB 2009), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being particulate matter exhaust from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data (i.e., monitored concentrations) are available for diesel PM because a standardized method for measuring diesel PM has not been established. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses ARB's emissions inventory PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene (ARB 2009). However, diesel PM poses the greatest health risk among these 10 TACs.

ARB estimated that approximately 531 tons of diesel PM are generated in Stanislaus County per year (ARB 2009). A majority of these health risks from diesel PM can be attributed to the heavy-duty diesel truck traffic passing through Stanislaus County along Interstate 5 (I-5) and State Route 99 (SR 99).

Based on receptor modeling techniques, ARB estimated the diesel PM health risk in the SJVAB in 2000 to be 390 excess cancer cases per million people compared with the statewide average of 540 cancer risks in a million. This represents a decrease in diesel PM health risks in the SJVAB by 41 percent between 1990 and 2000. Overall, ambient levels of most TACs (including diesel PM), except for para-dichlorobenzene and formaldehyde, have decreased since 1990 (ARB 2009).

Existing TAC sources in Specific Plan Area include mobile sources, stationary sources, and areawide sources, which all cumulatively contribute to the existing TAC concentrations and the associated health risk. Mobile sources are dispersed along roadways. SR 99 and I-5 both handle heavy-duty diesel trucks with emissions that can expose residents and other adjacent sensitive receptors to TAC emissions. Stationary sources that would generate TACs are permitted by SJVAPCD.

Areawide TAC sources are dependent on consumer behavior, which makes tracking data difficult to gather. However, ARB has developed TAC emissions inventories that provide a baseline level of TAC emissions and how those emissions compare with the region. Table 3.3-3 presents the TAC emissions occurring within Stanislaus County compared with the overall TAC emissions occurring within the SJVAB.

[2] 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 low concentrations.

Table 3.3-3. TAC Emissions in Stanislaus County and SJVAB

Toxic Air Contaminant	Stanislaus County Emissions (tons/year)	SJVAB Emissions (tons/year)	Percent of Stanislaus County Contribution
Acetaldehyde	155	1,603	9.7%
Benzene	137	1,680	8.1%
1,3-Butadiene	42	515	8.2%
Carbon Tetrachloride	0	0	0.0%
Chromium (Hexavalent)	<0.01	<1	0.0%
para-DiChlorobenzene	21	156	13.7%
Formaldehyde	334	4,065	8.2%
Methylene Chloride	58	423	13.8%
Perchloroethylene	89	617	14.5%
Diesel PM	531	6,073	8.7%

Notes: TAC = toxic air contaminants; SVAB = Sacramento Valley Air Basin; PM = particulate matter.
Source: ARB 2009.

EXISTING AIR QUALITY—ODORS

Odors are generally 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).

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while 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; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Sources of odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

SENSITIVE RECEPTORS

Some members of the population are especially sensitive to air pollutant emissions. These include children, the elderly, people with preexisting respiratory or cardiovascular illness, and those who engage in frequent exercise. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, day-care centers, and other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even with relatively short exposure periods. Noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution since exposure periods are relatively short and intermittent.

3.3.2 REGULATORY FRAMEWORK

Air quality is regulated at the federal level by EPA, at the State level by ARB, and at the local level by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent.

Air quality regulations focus on criteria pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. These are known as criteria pollutants because they are the most prevalent air pollutants known to be deleterious to human health, and extensive health-effects criteria documents are available. The regulatory approach for criteria air pollutants is described in the material that follows.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress in 1990.

The CAA required EPA to establish NAAQS. As shown in Table 3.3-4 EPA has established primary and secondary NAAQS for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The primary standards protect the public health, while the secondary standards protect the public welfare. This table also shows the SJVAB attainment status for each standard. The project region is currently designated as attainment or unclassified for the State and federal CO, NO_2, and SO_2 standards. With respect to the California-specific ambient air quality standards (*i.e.*, visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride), the project region is designated as attainment or unclassified. The SJVAB is designated as nonattainment for the State and federal ozone and $PM_{2.5}$ standards and the State PM_{10} standard. Thus, the main pollutants of concern within SJVAB are ozone precursors, PM_{10}, and $PM_{2.5}$. See Table 3.3-4 for the attainment status for each pollutant and standard.

The CAA requires each state to prepare an air quality control plan, referred to as a state implementation plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing the SIPs will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary sources of air pollution in the air basin.

Table 3.3-4. Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards[1]		
		Standards[2,3]	San Joaquin Valley Attainment Status[4]	Primary[3, 5]	Secondary[3, 6]	San Joaquin Valley Attainment Status[7]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	N (Severe)	–	–	–
	8-hour	0.070 ppm (137 µg/m^3)	N	0.070 ppm (137 µg/m^3)	Same as Primary Standard	N (Extreme)
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	A/U	35 ppm (40 mg/m^3)	–	A/U
	8-hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	–	0.053 ppm (100 µg/m^3)	Same as Primary Standard	A/U
	1-hour	0.18 ppm (339 µg/m^3)	A	0.100 ppm (188 µg/m^3)	–	–
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm	–	A/U
	3-hour	–	–	–	0.5 ppm (1300 µg/m^3)	A/U
	1-hour	0.25 ppm (655 µg/m^3)	A	.075 ppm (196 µg/m^3)	–	–
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N	-	Same as Primary Standard	A
	24-hour	50 µg/m^3		150 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	N	12.0 µg/m^3	15 µg/m^3	N
	24-hour	–	–	35 µg/m^3	Same as Primary Standard	
Lead	30-day Average	1.5 µg/m^3	A	–	–	–
	Calendar Quarter	–	–	1.5 µg/m^3	Same as Primary Standard	No designation
	Rolling 3-Month Average	–	–	0.15 µg/m^3	Same as Primary Standard	No designation
Sulfates	24-hour	25 µg/m^3	A	No National Standards		
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	U			
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	A			
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U			

Notes for Table 3.3-4.

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million.

[1] National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency (EPA) for further clarification and current federal policies.

[2] California standards for ozone, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards (CAAQS) are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Concentration expressed first in units in which it was issued (*i.e.*, ppm or µg/m^3). Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Unclassified (U): A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A): A pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N): A pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area.

Nonattainment/Transitional (NT): A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for that pollutant.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Nonattainment (N): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment (A): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassifiable (U): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

Sources: ARB 2016a, SJVAPCD 2012a

Federal Programs for Hazardous Air Pollutants

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may differ for major sources than for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources. The emissions standards were promulgated in two phases. In the first phase (1992–2000), EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum achievable control technology (MACT). For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), EPA is required to promulgate health risk-based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA also required EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Clean Air Act, H&S § 39600 *et seq*.

ARB is responsible for coordination and oversight of State and local air pollution control programs in California and for implementation of the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish California ambient air quality standards (CAAQS) (Table 3.3-4). The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources and provides districts with the authority to regulate indirect sources.

Other ARB responsibilities include overseeing compliance with California and federal laws by local air districts, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

The California CAA requires that each area exceeding the CAAQS for ozone, CO, SO_2, and NO_2 must develop a plan aimed at achieving those standards. The California Health and Safety Code Section 40914, requires air districts to design a plan that achieves an annual reduction in district-wide emissions of 5 percent or more, averaged every consecutive three-year period. To satisfy this requirement, the local air districts have to develop and implement air pollution reduction measures, which are described in their Air Quality Management Plans (AQMPs), and outline strategies for achieving the CAAQS for any criteria pollutants for which the region is classified as nonattainment.

ARB and local air pollution control districts are currently developing plans for meeting new NAAQS for ozone and $PM_{2.5}$. California's adopted 2007 State Strategy for California's SIP for federal $PM_{2.5}$ and 8-Hour Ozone Standards was submitted to EPA as a revision to the SIP in November 2007 (ARB 2008). In July 2011, ARB approved revisions that updated the ARB rulemaking calendar, made adjustments to transportation conformity budgets, and revised reasonable further progress tables and associated reductions for contingency purposes (ARB 2012). These actions affect the State's actions and ability to attain the 2008 8-hour ozone and 2006 $PM_{2.5}$ standards.

As shown in Table 3.3-4 the SJVAB is in nonattainment for the State standards for O_3, PM_{10}, and $PM_{2.5}$.

California Exhaust Emission Standards and Test Procedures

ARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies. During the past decade, federal and State agencies have imposed numerous requirements on the production and sale of gasoline in California. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90 percent reduction in NO_X emissions, 72% reduction of nonmethane hydrocarbon emissions, and 90 percent reduction of PM emissions, in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-based exhaust standards for NO_X and PM starting in 2011 that are more than 90 percent lower than previous levels, putting emissions from

off-road engines virtually on par with those from on-road heavy-duty diesel engines. ARB has also adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. Tier 4 emission standards requires engine manufacturers to meet after-treatment-based exhaust standards for NO_X and PM starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

Tanner Air Toxics Act, Chapter 1047, Statutes of 1983 and Air Toxics Hot Spots Information and Assessment Act, Chapter 1252, Statutes of 1987

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). Assembly Bill 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a TAC. The Air Toxics Hot Spots Information and Assessment Act requires that TAC emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by ARB, and if directed to do so by the local air district, a health risk assessment (HRA) must be prepared to determine the potential health impacts of such emissions.

Airborne Toxic Control Measure for Emissions of Perchloroethylene from Dry Cleaning Operations

In 1991, the ARB identified Perchloroethylene as a TAC under California's Toxic Air Contaminant Identification and Control Program (Health and Safety Code section 39650 et. seq.). The Board adopted the Airborne Toxic Control Measure for Emissions of Perchloroethylene from Dry Cleaning Operations (Dry Cleaning ATCM) and the Environmental Training Program for Perchloroethylene Dry Cleaning Operations in 1993. In 2007, the State of California adoption amendments to the Dry Cleaning ATCM, which requires for Perchloroethylene manufacturers and distributors to phase out the use of Perchloroethylene dry cleaning machines and related equipment by January 1, 2023. Additionally, new Perchloroethylene dry cleaning machines are prohibited from being installed anywhere in the state beginning January 1, 2008.

Diesel Risk Reduction Plan

In 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 85 percent decrease in statewide diesel health risk in 2020 relative to the year 2000 diesel risk (ARB 2000). ARB recently adopted a 2016 Mobile Source Strategy, consistent with the 2000 diesel risk reduction plan, which discusses strategies to further decrease health risk from transportation emissions (ARB 2016c).

Air Quality and Land Use Handbook: A Community Health Perspective

ARB published the *Air Quality and Land Use Handbook: A Community Health Perspective*, which provides guidance concerning land use compatibility with TAC sources (ARB 2005). Although it is not a law or adopted policy, the handbook offers advisory recommendations for the siting of sensitive receptors near uses associated

with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities.

Since the 2005 publication of the Handbook, ARB also published a Technical Advisory as a supplement to the Handbook to provide information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways in order to protect public health (ARB 2017c). This Technical Advisory demonstrates that reduced exposure to traffic-related pollution can also be achieved while pursuing infill development that independently provides public health benefits, such as reduce vehicle miles travelled and increased physical activity. Strategies identified to reduce air pollution exposure near roadways in the Technical Advisory include those to reduce traffic emissions, such as incorporation of roundabouts for speed reduction, traffic signal management, and speed limit reductions on high-speed roadways (those greater than 55 miles per hour); strategies that reduce the concentrations of traffic pollution, such as urban design to promote air flow, solid barriers to pollution, and vegetation to reduce pollutant concentrations; and strategies that remove pollution from indoor air such as through high efficiency filtration. This Technical Advisory does not negate the ARB Handbook, but offers multiple variables for consideration when planning development and proximity of receptors.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Joaquin Valley Air Pollution Control District

The SJVAPCD seeks to improve air quality conditions in the SJVAB and Stanislaus County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the SJVAPCD includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The SJVAPCD also inspects stationary sources; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements other programs and regulations required by the CAA, CAAA, and the CCAA.

In March of 2015, the SJVAPCD updated their previously adopted *Guide for Assessing and Mitigating Air Quality Impact* (2015 GAMAQI) (SJVAPCD 2015). The 2015 GAMAQI provides uniform procedures for addressing air quality in environmental documents. The thresholds of significance identified in the 2015 GAMAQI were used to evaluate the proposed project's air quality impacts.

Air Quality Plans

The SJVAPCD prepares and submits Air Quality Attainment Plans (AQAPs) in compliance with the requirements set forth in the CCAA. The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of the assessment, the attainment plans must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. As a nonattainment area, the region is also required to submit rate-of-progress milestone evaluations in accordance with the CAAA. These milestone reports include compliance demonstrations that the requirements have been met for the nonattainment area. The air quality attainment plans and reports present comprehensive strategies to reduce ROG, NO_X, and PM_{10} emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; implementation of a new and modified indirect source review program; adoption of local air quality plans; and stationary-, mobile-, and indirect-source control measures. Table 3.3-5 summaries SJVAPCD's most current AQAPs.

Table 3.3-5. Summary of SJVAPCD Air Quality Plans

Pollutant	Plan Title	Date	Status
Ozone(O_3)	SJVAB 8-Hour O_3Plan (2015 EPA Standard)	Pending	Public workshops in progress.
	SJVAB 8-Hour O_3Plan (2008 EPA standard).	June 2016	Adopted by SJVAPCD June 2016.
	San Joaquin Valley's 2013 Plan to attain the revoked federal 1-Hour O_3 standard.	November 2013	Submitted to EPA in December 2013.[1]
	Draft Staff Report, 8-hour O_3 Reasonably Available Control Technology – State Implementation Plan (RACT SIP) Analysis.	April 2006	Adopted by SJVAPCD in August 2006.
	2007 San Joaquin Valley 8-hour O_3 Plan.	March 2012	Approved by ARB in June 2007. Approved by EPA in March 2012.
Carbon Monoxide (CO)	2004 Revision to the California State Implementation Plan for CO Updated Maintenance Plan for Ten Federal Planning Areas.	July 2004	Adopted by ARB July 2004.
Respirable and Fine Particulate Matter (PM_{10} and $PM_{2.5}$)	2007 PM_{10} Maintenance Plan and Request for Redesignation.	September 2007	Approved by EPA in November 2008.
	2012 $PM_{2.5}$ Plan to attain the federal 24-hour $PM_{2.5}$ standard.	January 2013	Submitted to EPA in November 2014.[2]
	2015 Plan for the 1997 $PM_{2.5}$ Standard.	April 2015	Approved by SJVAPCD in April 2015 and submitted to EPA.
	2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard	September 2016	Adopted by SJVAPCD in September 2016.
	2017 $PM_{2.5}$ Plan for 1997, 2006, and 2012 $PM_{2.5}$ Standards	Pending	Public workshops in progress.

Note:

[1] Effective June 15, 2005, EPA revoked in full the national 1-hour O_3 ambient air quality standard, including associated designations and classifications. The 2013 Plan for the Revoked 1-Hour O_3 Standard was approved by the SJVAPCD's Governing Board on September 19, 2013. The plan demonstrates that the air basin will attain the revoked 1-hour O_3 standard by 2017.

[2] SJVAPCD submitted a Supplemental Document for the 2012 $PM_{2.5}$ Plan demonstrating that attainment of the 2006 $PM_{2.5}$ standard by 2015 is not practical. The document requested a reclassification of the SJVAB to serious nonattainment.

Source: SJVAPCD 2016; SJVAPCD 2017a; SJVAPCD 2017b; ARB 2011b; ARB 2016b

Rules and Regulations

Certain projects may be subject to SJVAPCD rules and regulations in effect at the time of construction. SJVAPCD rules that may be relevant to implementation of the Specific Plan include, but are not limited to the following:

- Rule 2201: New and Modified Stationary Source Review
- Rule 2280: Portable Equipment Registration
- Rule 3135: Dust Control Plan Fee
- Rule 4002: National Emission Standards for Hazardous Air Pollutants
- Rule 4101: Visible Emissions
- Rule 4102: Nuisance
- Rule 4601: Architectural Coatings
- Rule 4641: Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations
- Regulation VIII: Fugitive PM_{10} Prohibitions includes the following rules:
  - Rule 8021: Construction, demolition, excavation, and extraction; and other earthmoving activities;
  - Rule 8041: Trackout/Carryout of dirt and other materials onto paved public roads;

- Rule 8051: Open Areas;
- Rule 8061: Construction and use of paved and unpaved roads; and
- Rule 8071: Use of unpaved vehicle and/or equipment traffic areas.

As applicable, future development within the Specific Plan Area may be required to comply with SJVAPCD's Rule 9510 Indirect Source Review (ISR), as well. This rule applies to discretionary approvals proposing to construct at least 50 residential units, 9,000 square feet of educational space, 20,000 square feet of recreational space, or similar amounts (9,000 square feet) of other uses. Applicants subject to this rule are required to submit an Air Impact Assessment (AIA) application. The AIA application includes a detailed project description, on-site emission reduction checklist, monitoring and reporting schedule, and an AIA. The AIA provides estimates of construction and operational NO_X and PM_{10} emissions associated with the project, without and with mitigation for each applicable pollutant. The AIA also quantifies the off-site fee, a fee paid by the applicant to the District for any emission reductions required by the rule that are not achieved through on-site emission reduction measures. The off-site fee would be needed to mitigate impacts, if applicable. General mitigation requirements include the following:

- Exhaust emissions for construction equipment greater than 50 horsepower used or associated with the development project shall be reduced by 20 percent of the total NO_X and by 45 percent of the total PM_{10} emissions from the statewide average, as estimated by ARB.

- An applicant may reduce construction emissions on-site by using less polluting construction equipment, which can be achieved by using add-on controls, cleaner fuels, or newer lower emitting equipment.

- Applicants are required to reduce by 33.3 percent, the project's operational baseline NO_X emissions over a period of 10 years, as quantified in the approved AIA.

- Applicants shall reduce 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years as quantified in the approved AIA.

- The requirements listed above can be met through any combination of on-site emission reduction measures or off-site fees.

Regional and Local Programs for Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce ARB control measures. Under SJVAPCD Regulations II and VII, all sources that possess the potential to emit TACs are required to obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The SJVAPCD limits emissions and public exposure to TACs through a number of programs. The SJVAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Sources that require a permit are analyzed by the SJVAPCD (*e.g.*, health risk assessment) based on their potential to emit toxics. If it is determined that the project would emit toxics in excess of SJVAPCD's threshold of significance for TACs, as identified below, sources have to implement the best available control technology for TACs (T-BACT) in order to reduce emissions. If a source cannot reduce the risk below the threshold of

significance even after T-BACT has been implemented, the SJVAPCD will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology when retrofitting with respect to TACs. It is important to note that SJVAPCD's air quality permitting process applies to stationary sources. Properties exposed to elevated levels of non-stationary type sources of TACs and the non-stationary type sources themselves (*e.g.*, on-road vehicles) are not subject to air quality permits. Further, due to feasibility and practicality reasons, mobile sources (cars, trucks, etc.) are not required to implement T-BACT, even if they do have the potential to expose adjacent properties to elevated levels of TACs. Rather, emissions controls on such sources (*e.g.*, vehicles) are subject to regulations implemented on the State and federal level.

Odors

SJVAPCD has identified some common types of facilities that have been known to produce odors: wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in federal or state air quality regulations. While there is no specific rule or regulations against odors, SJVAPCD has developed Rule 4102 (Nuisance) prohibiting the discharge of air contaminants or other materials that may cause injury, detriment, nuisance, or annoyance to the public.

Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odor. SJVAPCD recommends that when either of these situations occur that an evaluation of odor emissions is conducted considering factors such as the nature of the odor source, frequency of odor generation, intensity of odor, distance of odor source to sensitive receptors, wind direction, and sensitivity of receptors.

Stanislaus County General Plan

The Specific Plan is proposed for development in the City of Ceres. However, this EIR presents some Stanislaus County policies for background that would apply to the cumulative context of this Specific Plan. The following goal, policies, and implementation measures from Chapter 3, Conservation/Open Space Element of the County of Stanislaus General Plan relate to air quality:

Goal Six – Improve Air Quality.

- **Policy Eighteen** – The County will promote effective communication, cooperation and coordination among agencies involved in developing and operating local and regional air quality programs.

    - **Implementation Measure 1** – Refer discretionary projects under CEQA review to the San Joaquin Valley Air Pollution Control District (SJVAPCD), neighboring jurisdictions and other affected agencies for review and comment.

    - **Implementation Measure 2** – Work with other agencies in the San Joaquin Valley to establish coordinated air quality programs and implementation measures.

- **Policy Nineteen** – The County will strive to accurately determine and fairly mitigate the local and regional air quality impacts of proposed projects.

- **Implementation Measure 1** – Require all development proposals, where appropriate, to include reasonable air quality mitigation measures.

- **Implementation Measure 2** – Minimize case-by-case analysis of air quality impacts through the use of standard criteria for determining significant environmental effects, a uniform method of calculating project emissions, and standard mitigation methods to reduce air quality impacts.

- **Policy Twenty** – The County shall strive to reduce motor vehicle emissions by reducing vehicle trips and vehicle miles traveled and increasing average vehicle ridership.

  - **Implementation Measure 1** – Through strategies identified in the Circulation Element, ensure that circulation systems are designed and maintained to minimize traffic congestion and vehicle emissions.

  - **Implementation Measure 2** – Support a broad range of transportation modes, including public transit, bicycling and pedestrian travel, through the strategies identified in the Circulation Element.

  - **Implementation Measure 3 –** Help achieve a jobs/housing balance by working with appropriate organizations to attract employers to Stanislaus County.

- **Policy Twenty-One** – The County will support efforts to increase public awareness of air quality problems and solutions.

  - **Implementation Measure 1** – Support and participate in the air quality education programs of the SJVAPCD to the greatest extent possible.

  - **Implementation Measure 2** – Support education programs that increase public awareness of techniques to reduce particulate matter emissions.

  - **Implementation Measure 3 –** Work with the local building industry, utilities, and the SJVAPCD to educate developers and builders on the benefits of energy-efficient designs and the use of low-emission equipment for new residential and commercial construction.

City of Ceres 2035 General Plan

- The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to air quality are applicable to the proposed Specific Plan.

Transportation and Circulation

- **Policy 3.F.1 Non-Motorized Transportation System**. Develop a comprehensive non-motorized transportation system that provides a network of connections between the city's major employment, recreational, educational, and housing areas via existing and planned bikeways and pedestrian facilities, and consider the different needs of recreational bicyclists and commuter bicyclists.

- **3.F.3 New Development**. Require developers to finance and install pedestrian pathways, bikeways, and multi-purpose paths within new development, as appropriate.

Agriculture and Natural Resources

- **Policy 4.G.1 Air Quality Goals**. Cooperate with the San Joaquin Valley Air Pollution District and other agencies in the San Joaquin Valley Air Basin to meet regional air quality goals and achieve a consistent and effective approach to regional air quality planning and management. Coordinate with other jurisdictions and other regional agencies in the San Joaquin Valley to establish parallel air quality programs and implementation measures.

- **Policy 4.G.3 Air Quality Analysis**. Require major new development projects (those exceeding the San Joaquin Valley Air Pollution District's small project analysis level) to submit an air quality analysis for review and approval, with mitigation measures to be required as determined by the City.

- **Policy 4.G.4 Proposed Projects**. Solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality, and submit development proposals to the San Joaquin Valley Air Pollution District for review and comment pursuant to CEQA prior to consideration by the City.

- **Policy 4.G.5 Reduce VMT**. Emphasize transit-oriented, walkable, compact development patterns to reduce total vehicle miles traveled.

- **Policy 4.G.6 Roadway Dust**. Reduce the generation of fugitive dust to the greatest extent feasible by requiring lower speed limits and/or paving on unpaved roads, the removal of heavy silt loadings from roadways, and the paving and planting of shoulders and medians.

- **Policy 4.G.9 Cumulative Impacts**. Address impacts of new development projects that may individually have insignificant impacts on air quality, but which together with other projects in the Planning Area may be cumulative significant by requiring mitigation at the plan level for areawide plan development.

- **Policy 4.G.13 Thresholds of Significance**. Use the San Joaquin Valley Air Pollution District's thresholds of significance for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents.

- **Policy 4.G.14 Construction Mitigation**. Require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction. Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to:

    - site watering or application of dust suppressants;
    - phasing or extension of grading operations;
    - covering of stockpiles;
    - suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
    - revegetation of graded areas.

3.3.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Significance criteria are based on Appendix G of the CEQA Guidelines and guidance from the SJVAPCD. The proposed project would have a significant impact on Air Quality if implementation of the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate 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 nonattainment under an applicable NAAQS or CAAQS, including releasing emissions that exceed quantitative thresholds for ozone precursors (see Chapter 5 of this EIR for a discussion of cumulative impacts;
- Expose sensitive receptors to substantial pollutant concentrations, or
- Create objectionable odors affecting a substantial number or people.

As stated in Appendix G, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. Pursuant to the SJVAPCD-recommended thresholds for evaluating project-related air quality impacts, implementation of the proposed Specific Plan would be significant if it would:

- generate construction-related criteria air pollutant or precursor emissions that exceed the SJVAPCD-recommended thresholds as stated in Table 3.3-6;
- generate long-term criteria air pollutant or precursor emissions from operations that exceed the SJVAPCD-recommended thresholds as stated in Table 3.3-6;

Table 3.3-6. Thresholds of Significance for Criteria Pollutants

Pollutant/Precursor	Construction Emissions Emissions (tpy)	Operational Emissions Emissions (tpy)
CO	100	100
NO_X	10	10
ROG	10	10
SO_X	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Notes: tpy = tons per year; CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = reactive organic gases; SO_X = sulfur oxides; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns.
Source: SJVAPCD 2015

- expose the maximally exposed individual (MEI) to TAC emissions that exceed an incremental increase in cancer risk of more than 20 in one million and/or a concentration of non-carcinogenic TAC emissions that would result in a Hazard Index equal to 1 or greater; or

- generate odorous emissions with the potential to frequently expose members of the public to objectionable odors.

Since there is considerable overlap between the above mentioned threshold questions, this section has been reorganized to improve clarity and readability into four impact statements addressing:

- Short-term, construction-related emissions
- Long-term, operational emissions
- Exposure of sensitive receptors to substantial pollutant concentrations; and
- Exposure to objectionable odors.

For cumulative impacts, SJVPACD states that if a project would be significant on the project-level (i.e., exceed any of the thresholds listed above), it would also be considered significant on a cumulative level (SJVAPCD 2015 p. 66). Please see Chapter 5 of this EIR, "Other CEQA Considerations," which addresses cumulative impacts in detail.

ANALYSIS METHODOLOGY

The analysis of the project's potential impacts follows the guidance and methodologies recommended in SJVAPCD's 2015 GAMAQI. Under CEQA, the significance criteria established by the applicable air quality management or air pollution control district may be used to assess the impacts of a project on air quality. SJVAPCD has established thresholds of significance for regional air pollutant emissions for construction activities and project operation.

Construction emissions were modeled using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1, which is the most current version of the SJVAPCD-recommended model for estimating construction and operational emissions from land use development projects. CalEEMod includes default assumptions for construction parameters such as construction equipment, haul trucks, and worker trips, which were used to model the proposed Specific Plan's construction-related emission in the absence of project-specific information. It should be noted that CalEEMod default assumptions are typically conservative to avoid underestimating emissions when project-specific information is unknown. The proposed Specific Plan's construction-related emissions are compared with the applicable SJVAPCD thresholds of significance to determine significance.

For plan-level construction emissions, SJVAPCD does not prescribe specific methods for emission modeling; however, some air districts, such as the Sacramento Metropolitan Air Quality Management District (SMAQMD), recommend an assumption that 25 percent of the total land uses could be constructed in a single year when project-specific information is unknown (SMAQMD 2015). To ensure conservative results, this analysis assumes that 25 percent of the land uses would be constructed in the earliest possible construction year (2018). This provides a conservative estimate of the proposed project's construction-related emissions because emission factors for construction equipment and vehicles decrease over time due to turnover in vehicle and equipment fleets, advancements in emission technology, and increasingly stringent emissions standards. Therefore, the earliest possible buildout year would use the maximum emission factors and result in conservative estimates.

Operational emission following construction of the proposed Specific Plan's land uses would be generated by area-, energy-, and mobile-sources. Operational emissions for the project were also estimated using CalEEMod, which accounted for estimated mobile emissions generated by trips to and from residential and educational uses as well as energy, water, waste, and area emissions. Other air quality impacts (i.e., local emissions of CO, odors, and operation-related TACs) were assessed in accordance with methodologies recommended by SJVAPCD or other applicable air districts.

For the purposes of this analysis, construction was assumed to begin at the end of 2017 and conclude in 2024. Additional modeling assumptions and calculations are detailed in Appendix B. Aside from assumptions noted in the model, CalEEMod defaults were used for all inputs. The resulting air pollutant emissions were then compared to the threshold criteria published by SJVAPCD.

IMPACT ANALYSIS

IMPACT 3.3-1 **Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors.** *Annual emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$ during construction of the proposed project would not exceed SJVAPCD's thresholds of significance. Thus, construction emissions of criteria air pollutants and precursors would not violate an ambient air quality standard or contribute substantially to an existing or predicted air quality violation. The construction-related impacts are considered* ***less than significant****.*

Construction-related emissions are temporary and short-term in duration. Despite the finite period of construction related emissions for any particular project, these emissions have the potential to represent a significant air quality impact. The timing of buildout of the Specific Plan is dependent on economic, demographic, and other factors, which cannot be predicted at the time of this analysis. Construction activities would generate temporary emissions of ROG and NO_X, CO, PM_{10}, and $PM_{2.5}$. ROG, NO_X, and CO emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive particulate matter dust emissions are associated primarily with site preparation and travel on unpaved roads and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles. Construction emissions would vary from day-to-day depending on the types of construction activities, number and types of construction equipment required, and vehicle trips (i.e., material delivery, haul truck, and/or construction worker).

Construction-related emissions were modeled using CalEEMod. CalEEMod is designed to model construction (and operational) emissions for development projects and allows for the input of project-specific information. As described above, the exact construction schedule for the proposed Specific Plan cannot be determined at the time of this analysis. This analysis assumes construction would begin at the end of 2017 and would be complete by 2024. Because at the time of this analysis, project-specific construction information is not available, default assumptions contained in CalEEMod such as construction equipment, worker trips, hours of operation, and acres disturbed per day, among others were used to model construction emissions. Default assumptions contained in CalEEMod are typically conservative to avoid underestimating emissions when project-specific information is unknown. The estimated emissions associated with most intensive year of construction are presented in Table 3.3-7. Additionally, since the SJVAPCD does not prescribe specific methods for emission modeling; the neighboring SMAQMD, recommend assumption that 25 percent of the total land uses could be constructed in a single year when project-specific information is unknown was also applied to this project as part of this analysis. Maximum annual emissions were also calculated for when 25 percent of total land uses are modeled in a single year

assuming 260 days of construction (5-days a week), constructed in the earliest possible construction year (2018). Additional details are provided in Appendix B.

Table 3.3-7. Construction-Related Emissions

	Criteria Pollutant Emissions (tons per year)					
	CO	NO_X	ROG	SO_X	PM_{10}[1]	$PM_{2.5}$[1]
Estimated Specific Plan Emissions	5.45	6.86	5.79	0.02	1.38	0.74
Estimated Specific Plan Emissions – 25% Constructed in One Year	3.10	4.07	1.90	<0.01	0.50	0.30
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of fugitive and exhaust PM.

Source: Estimated by AECOM in 2017

Table 3.3-7 summarizes the estimated construction-related emissions of criteria air pollutants from construction activities associated with the buildout of the Specific Plan. Construction-related air quality impacts were determined by comparing these modeling results with applicable SJAPCD significance thresholds.

SJVAPCD regulates regional air quality by enforcing rules and regulations, issuing air quality permits, and developing air quality plans. Air quality plans are developed to attain and maintain ambient air quality standards. The existing emissions profile and projected growth of a region (based on local general plans) are evaluated along with proposed mitigation measures to determine if the region would attain ambient air quality standards. SJVAPCD has developed regional thresholds of significance for construction, which are considered the allowable emissions limit on a project level to help the region attain and maintain ambient air quality standards and comply with the regional air quality plan. At the time of this writing, the most current regional air quality plan is the 2015 Plan for the 1997 $PM_{2.5}$ Standard, 2012 $PM_{2.5}$ Plan (that addressed the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 micrograms per cubic meter [$\mu g/m^3$]), and the 2013 Plan for the Revoke 1-Hour O_3 Standard (SJVAPCD 2015). Projects that would generate project-level emissions below the SJVAPCD regional thresholds of significance would be considered to be consistent with these regional air quality plans and would have less-than-significant impacts for purposes of this CEQA analysis. In addition, projects that are consistent with the development plans and goals in the Stanislaus County General Plan and the Ceres 2035 General Plan would be considered not to conflict or obstruct implementation of the applicable air quality plan.

Projects developed under the proposed Specific Plan will also have to comply with current regulatory requirements. Specifically, SJVAPCD's Regulation VIII Fugitive Dust Prohibitions contain, but are not limited to the following current control measures:

- Pre-water site sufficient to limit visible dust emissions (VDE) to 20 percent opacity.
- Phase work to the extent feasible in a way that reduces the amount of disturbed surface area at any one time.

- During active operations, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity.
- During active operations, construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity.
- During active operations, apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
- An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
- An owner/operator shall post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.
- When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity.
- When handling bulk material, construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity and with less than 50 percent porosity.
- When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
- When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.
- When storing bulk materials construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity and with less than 50 percent porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20 percent opacity or utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50 percent porosity.
- Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20 percent opacity.
- Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20 percent opacity.
- Apply water to the top of the load sufficient to limit VDE to 20 percent opacity.
- Cover haul trucks with a tarp or other suitable cover.
- Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and load all haul trucks such that the freeboard is not less than 6 inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20 percent opacity; or cover haul trucks with a tarp or other suitable cover.

- Owners/operators shall remove all visible carryout and trackout at the end of each workday.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall take the actions for the prevention and mitigation of carryout and trackout.
- Prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.
- For sites with paved interior roads, an owner/operator shall prevent and mitigate carryout and trackout.
- Cleanup of carryout and trackout shall be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20 percent opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80 percent; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.
- An owner/operator shall submit a Dust Control Plan to the Air Pollution Control Officer (APCO) prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.

In addition to compliance with Regulation VIII, any applicant proposing a project within the Specific Plan Area that meets the specified threshold requirements will need to demonstrate compliance with SJVAPCD's ISR (Rule 9510) as a condition of discretionary approval. Rule 9510 requires the applicant to provide an approved Air Impact Assessment (AIA) application to SJVAPCD. The AIA would quantify construction NO_X and PM_{10} emissions. This assessment would include: an estimate of construction emissions prior to the implementation of mitigation measures; a list of the mitigation measures to be applied to the project; an estimate of emissions for each applicable pollutant for the project, or each phase thereof, following the implementation of mitigation; and a calculation of the applicable off-site fee, if required by Rule 9510. The general mitigation requirements in the assessment, as contained in the ISR rule, would include the following:

- Exhaust emissions for construction equipment greater than 50 horsepower used or associated with the development project shall be reduced by 20 percent of the total NO_X and by 45 percent of the total PM_{10} emissions from the statewide average as estimated by ARB.
- Methods employed by the applicant to reduce construction emissions to the degree noted above include using less polluting construction equipment, including the use of add-on controls, cleaner fuels, or newer lower emitting equipment. The emissions reduction targets listed above shall be met through any combination of on-

site emission reduction measures or offset fees, including those required and other mitigation measures listed above.

The requirements listed above could be met through any combination of on-site emission reduction measures or off-site fees, including those required and other mitigation measures listed above; however, any on-site emission reductions must be both quantifiable and verifiable to be credited towards the requirements of the ISR.

Summary of Impact Analysis

As summarized in Table 3.3-7, construction-related activities associated with the buildout of the Specific Plan would not exceed the SJVAPCD thresholds of significance. When 25 percent of the proposed Specific Plan land uses are constructed in one year, a conservative approach, construction emissions do not approach the SJVAPCD annual thresholds of significance. Thus, construction emissions of criteria air pollutants and precursors would not violate an ambient air quality standard or contribute substantially to an existing or predicted air quality violation. The construction-related impacts are considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.3-2 Generation of Long-Term Operational Emissions of Criteria Air Pollutants and Precursors. *Long-term operational emissions would be generated from day-to-day activities associated with residential and non-residential land uses under the proposed Specific Plan. Operational emissions associated with the proposed Specific Plan would not exceed applicable SJVAPCD thresholds. The level of operational emissions would not conflict with or obstruct implementation of the applicable air quality plan. The impact is considered* ***less than significant***

Operational emissions for development projects can be distinguished according to their source, including mobile, energy, and area source emissions. Mobile-source emissions are those associated with vehicle trips, which for the proposed project would include residents and visitors. Area-source emissions are those associated with periodic architectural coatings and landscape maintenance activities. Energy use emissions are associated with building electricity and natural gas usage. Table 3.3-8 presents the proposed project's annual operational emissions and compares them with SJVAPCD thresholds of significance. As shown in Table 3.3-8, the Specific Plan would result in daily operational emissions of approximately 14.65 tons/year of CO, 9.53 tons/year of NO_X, 4.12 tons/year of ROG, 0.06 tons/year of SO_X, 3.91 tons/year of PM_{10}, and 1.13 tons/year of $PM_{2.5}$. The proposed project's annual long-term operational emissions would not exceed the SJVAPCD thresholds of significance. The impact would be less than significant.

As shown in Table 3.3-8, the proposed project's long-term operational emissions would not exceed SJVAPCD thresholds of significance. Therefore, the proposed project's operational emissions would not be considered to generate emission levels that would conflict with or obstruct implementation of the applicable air quality attainment plan.

Table 3.3-8. Operational Emissions

	Maximum Annual Criteria Pollutant Emissions (tons per year)					
	CO	NO_X	ROG	SO_X	PM_{10}[2]	$PM_{2.5}$[2]
Estimated Specific Plan Emissions[1]	14.65	9.53	4.12	0.06	3.91	1.13
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] Operational emissions were modeled for 2024 assuming a default construction schedule where construction of all land use is complete at that time.

[2] PM emissions shown include the sum of fugitive and exhaust PM.

Source: Estimated by AECOM in 2017

As previously stated under Impact 3.3-1, SJVAPCD has developed regional thresholds of significance for operation, which are considered the allowable emissions limit on a project level to help the region attain and maintain ambient air quality standards and comply with the regional air quality plan. At the time of this writing, the most current regional air quality plan is the 2015 Plan for the 1997 $PM_{2.5}$ Standard, 2012 $PM_{2.5}$ Plan (that addressed the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 micrograms per cubic meter [$\mu g/m^3$]), and the 2013 Plan for the Revoke 1-Hour O_3 Standard (SJVAPCD 2015). Projects that would generate project-level emissions below the SJVAPCD regional thresholds of significance would be considered to be consistent with these regional air quality plans and would have less-than-significant impacts for purposes of this CEQA analysis. In addition, projects that are consistent with the development plans and goals in the Stanislaus County General Plan and the Ceres 2035 General Plan would be considered not to conflict or obstruct implementation of the applicable air quality plan. The proposed Specific Plan is consistent with land use designations and assumptions made by the Ceres 2035 General Plan.

The proposed Specific Plan would be consistent with land use development goals and strategies of the Ceres 2035 General Plan, and as shown in Table 3.3-8, total air pollutant emissions would not exceed SJVAPCD's operational thresholds of significance. Therefore, the proposed Specific Plan's operational emissions would not conflict with or obstruct implementation of the applicable air quality plan. This impact is considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.3-3 Exposure of sensitive receptors to emissions of toxic air contaminants. *Implementation of the proposed Specific Plan Area would not be anticipated to result in an increased exposure of sensitive receptors to localized concentrations of air pollutants that would exceed applicable standards. However, if the Specific Plan Area is developed, during construction and operation, there would be an increase in the potential for exposure of sensitive land uses to substantial concentrations of TACs. This impact is considered* ***potentially significant****.*

Implementation of the proposed Specific Plan would generate varying levels of TAC emissions from construction and operational activities that could expose existing and planned sensitive receptors. In addition, the proposed

project would generate vehicle trips that could contribute to congestion at intersections. The TAC emissions associated with the proposed project's construction and operational activities, and the existing nearby land uses are evaluated separately below. Under current conditions, there are residential uses along with two school uses within the Specific Plan Area which are sensitive receptors.

Construction-Related Emissions

Construction of new buildings, structures, paved areas, roadways, utilities, and other improvements typically requires use of heavy-duty construction equipment, haul trucks, on-site generators, and construction worker vehicles which could generate diesel PM, which the ARB has identified as a TAC. Generation of diesel PM from construction projects typically occurs in a single area (e.g., at the project site) for a short period of time, but could also include linear infrastructure projects to support new land uses. Because construction activities and subsequent emissions vary depending on the phase of construction (e.g., grading, building construction), the construction-related emissions to which nearby receptors are exposed to would also vary throughout the construction period.

During some equipment-intensive phases, such as grading, construction-related emissions would be higher than other less equipment-intensive phases, such as building construction or architectural coatings. Since the construction phasing and plans of development that could occur in the Specific Plan Area is unknown, it is not possible to know whether there could be exposure to substantial pollutant concentrations during construction. It may be possible construction emissions to generate substantial pollutant concentrations if part of the Specific Plan Area contains established development while another part is under construction, especially since there are existing sensitive receptors (residences and two schools) within the project area. It may be possible for off-site construction emissions to generate substantial pollutant emissions. Even in intensive phases of construction, there would not be substantial pollutant concentrations, with the potential exception of the immediate vicinity of the construction site. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005).

Emissions from construction equipment would be reduced over the entirety of the construction period due to phased standards for diesel equipment engines. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90 percent reduction in NO_X emissions, 72 percent reduction of non-methane hydrocarbon emissions, and 90 percent reduction of PM emissions, in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. Tier 4 emission standards requires engine manufacturers to meet after-treatment-based exhaust standards for NO_X and PM starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed amount of emissions would result in higher health risks for the Maximally Exposed Individual (MEI). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs) used to determine the exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period. However, such assessments should also be limited to the period/duration

associated with construction activities. OEHHA recommends that construction activities for individual projects that are longer than 2 months be evaluated for potential cancer risks.

Construction activities associated with development of the Specific Plan Area would have intermittent and temporary construction emissions, and it is possible that construction projects would occur in areas adjacent to sensitive would want to compare the project to the screening levels outlined in the *2015 GAMAQI*. Schedule and phasing is unknown at the time of this writing. Therefore, given the possibility that construction activities could occur within a distance and for a duration that would generate substantial TAC exposure to sensitive receptors, this impact is considered **potentially significant**.

Mitigation Measures 3.3-3: Use Current Phase Equipment for All Construction Equipment.

Site developers/leaseholders/project applicants who wish to develop facilities in the Specific Plan Area shall construct all facilities using current phase construction equipment (currently Tier 4) to reduce exposure of sensitive receptors to any toxic air contaminants.

Significance after Mitigation

Implementation of Mitigation Measure 3.3-3 requires the use of current phase construction equipment. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) and engine manufacturers are now required to meet after-treatment-based exhaust standards for NO_X and PM starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines. With the implementation of current phase construction equipment (Tier 4), this impact is **less than significant with mitigation**.

Operational Emissions

The proposed project would accommodate residential and recreational land uses that could generate TAC emissions. Potential TAC emissions associated with the proposed land uses include trips associated with visitors and residents coming to and from the project site. The potential sensitive receptors include residents and two existing schools. ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* provides guidance concerning land use compatibility with TAC sources, including the recommendation that sensitive receptors should not be located within 500 feet of an urban freeway with 100,000 vehicles per day or a rural road with 50,000 vehicles per day based on a synthesis of traffic and air quality studies along high-volume roadways (ARB 2005, Table 1-1, page 4). Even with full buildout of the Specific Plan Area, none of the roadways in the vicinity of the project site that have sensitive receptors within 500 feet of the roadway would approach 50,000 vehicles per day. It is anticipated that the proposed Specific Plan's operational activities would not generate substantial TAC emissions that would expose nearby sensitive receptors to substantial TAC concentrations and this impact would be considered **less than significant**.

CO Hot Spots

A carbon monoxide hot spot is a localized concentration of carbon monoxide that is above state and/or federal 1-hour or 8-hour ambient air standards and is generally associated with idling or slow-moving traffic. Based on SJVAPCD guidance, the proposed project can be said to have no potential to create a violation of the CO standard if neither of the following criteria are met:

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

- A traffic study indicates that the proposed project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

With respect to SJVAPCD's screening criteria, as determined in the project's traffic study, implementation of the proposed Specific Plan would not reduce the LOS of several intersections to LOS E and F. SJVAPCD states that although a project may exceed the screening criteria, it does not necessarily indicate that the proposed project would generate a CO hot spot at the affected intersection. Further analysis should be conducted prior to performing full air dispersion modeling for affected intersection. The 2003 Transportation Project-Level Carbon Monoxide Protocol is suggested as a method to further evaluate the intersections' potential to generate a CO hot spot. However, more recently other neighboring air districts, such as Sacramento Metropolitan Air Quality Management District (SMAQMD) and Bay Area Air Quality Management District (BAAQMD) have developed screening thresholds based on air dispersion modeling to determine if a project would cause an intersection to potentially generate a CO hotspot. The screening thresholds have been developed with conservative assumptions to avoid underestimating CO concentrations. Therefore, a project that would not exceed the screening thresholds would be highly unlikely to generate a CO hotspot and would not expose sensitive receptors to CO concentrations harmful to public health. According to these methodologies, projects would have the potential to generate a CO hotspot if it did contribute a substantial volume of vehicle trips to an intersection that exceeded 44,000 vehicles per hour and 31,600 vehicles per hour for BAAQMD and SMAQMD, respectively. For intersections located in areas where vertical and/or horizontal mixing is substantially limited, the screening threshold is 24,000 vehicles per hour. These screening methods are developed to be protective of the public health and are as applicable in the SJVAPCD jurisdiction area as in these other locations.

While this section is focused on project impacts rather than cumulative impacts, for the purposes of assessing CO impacts, the use of cumulative traffic data provides more conservative results, and these data are used here. Please see Chapter 5 of this EIR for a discussion of cumulative impacts.

The traffic study evaluated affected intersections under existing and cumulative conditions, with and without the proposed project. For a conservative analysis, the cumulative plus project intersection volumes were used to compare with the aforementioned screening thresholds. The highest roadway volume affected by Specific Plan traffic in cumulatively conditions would have less than 28,000 vehicles per day (Faith Home Road). Even if half of the trips occurred in a peak hour, this would still be significantly less than the most conservative screening threshold described above (*i.e.*, 24,000 vehicles per hour). In reality, the portion of daily trips that occur in the peak hour is between 5 and 15 percent. In addition, the Specific Plan Area is largely flat and would not include any topographical features (*e.g.*, canyons) or transportation infrastructure (*e.g.*, tunnels) that would substantially limit vertical or horizontal mixing. Therefore, implementation of the proposed project is not expected to have the potential to generate CO hotspots. This impact is considered **less than significant**.

Because the proposed project does not have the potential to result in the creation of a CO hot spot at any area intersections or roadways, will not expose the general public to substantial levels of toxic air contaminants (see Impact 4.2.6), and will not generate significant dust emissions (see Impact 4.2.2) or odor emissions (see Impact 4.2.8), the proposed project will not result in an increased exposure of sensitive receptors to localized concentrations of air pollutants. This impact is less than significant.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.3-4 Exposure of sensitive receptors to emissions of odors. *Sensitive receptors in the vicinity of the proposed Specific Plan Area may be exposed to odorous emissions. This impact would be considered less than significant*

The occurrence and severity of odor impacts depend on numerous factors: the nature, frequency, and intensity of the source; wind, speed, and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, and they generate citizen complaints to local governments and regulatory agencies.

Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities identified by SJVAPCD that generate odors include: wastewater treatment plants, landfills, composting facilities, transfer stations, refineries, chemical plants, asphalt batch plants, fiberglass manufacturing, painting/coating operations, agricultural uses (livestock and farming), and food processing plants. Areas to the south and east of the Specific Plan Area consist largely of agricultural production, including commercial almond orchards and open field crops (mainly alfalfa) and an existing labeling systems manufacturing facility approximately 1,000 feet south of the Specific Plan Area. As confirmed in the California Building Industry Association (CBIA) v. BAAQMD, also known as the reverse CEQA case, “CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. What CEQA does mandate, consistent with a key element of the Resources Agency's interpretation, is an analysis of how a project might exacerbate existing environmental hazards” (CBIA v. BAAQMD 2015).

The proposed Specific Plan does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Specific Plan may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities. Standard construction requirements would minimize odor impacts resulting from construction activity. It should be noted that any construction odor emissions generated would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction activity and are thus considered **less than significant**.

Operation of the proposed Specific Plan would not generate any new odor sources different from existing conditions. Based on the SJVAPCD screening levels for potential odor sources, this project would not place sensitive receptors within the vicinity of odor sources as previously described. Additionally, the project does not include land uses that are odor sources. As a result, the proposed Specific Plan would not create objectionable odors affecting a substantial number of people. Therefore, impacts associated with odors during construction or operation would be considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

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3.4 BIOLOGICAL RESOURCES

This section addresses biological resources known or with potential to occur in the Specific Plan Area. The analysis includes a description of the existing environmental conditions at the time of the Notice of Preparation (NOP), the methods used for assessment, the impacts associated with implementing the Specific Plan, and mitigation measures proposed to reduce potentially significant impacts. This section also includes a brief overview of the federal, State, and local laws and regulations pertaining to the protection of biological resources in Stanislaus County.

The biological resource information presented in this section is based on review of available background reports; previous studies conducted on or near the project site; biological resource databases, including the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) Inventory, aerial photography interpretation, the Stanislaus County General Plan (Stanislaus County 2015) and General Plan background report (Stanislaus County 2008); and a reconnaissance-level site survey conducted by an AECOM biologist on September 14, 2016.

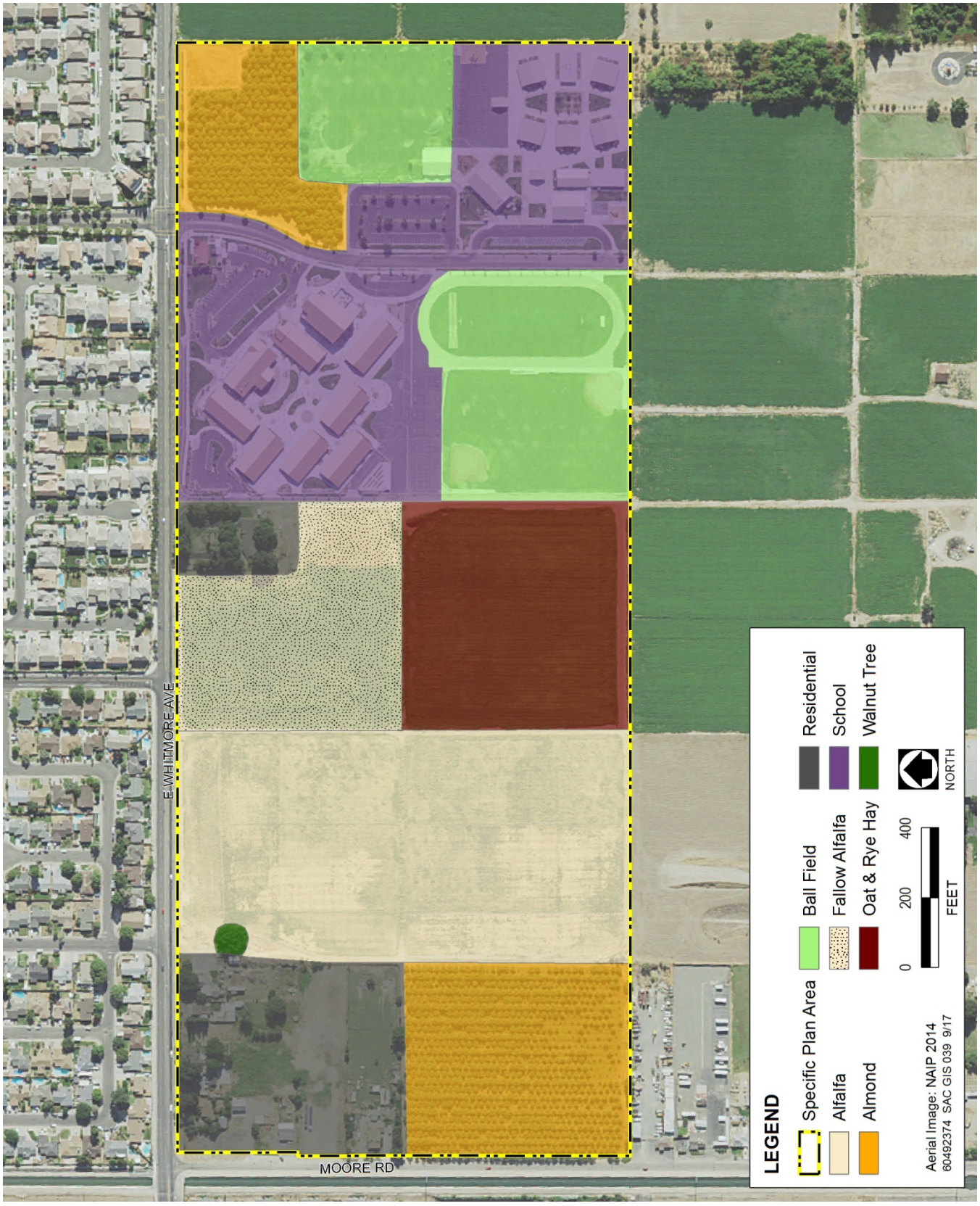
3.4.1 ENVIRONMENTAL SETTING

The 94-acre Specific Plan Area is located in the San Joaquin Valley portion of the Great Central Valley subdivision of the California Floristic Province and is at the urban-agriculture interface where the City of Ceres transitions to rural areas of unincorporated Stanislaus County. Surrounding land uses consist of single-family and multi-family residences and commercial land uses north and west of the Specific Plan Area; and agricultural production, including commercial almond orchards and open field crops (mainly alfalfa), as well as farm structures, and single-family homes to the south and east. There is a concrete-lined Turlock Irrigation District Ceres Main canal approximately 30 feet west of the Specific Plan Area and the Tuolumne River is located approximately 1.25 miles to the north.

Habitat types in the Specific Plan Area consist of irrigated hayfields, orchards, and urban development comprised of an elementary school and a junior high school, and single-family homes with animal pens and outbuildings. The site has been leveled in the past and is virtually flat with an elevation range of roughly 95 to 105 feet above mean sea level. There are no aquatic features, native vegetation, or natural habitats present on the site, but there are several large ornamental trees around the existing residences and strips and patches of ruderal vegetation around the agricultural fields and residences.

VEGETATION

Vegetation in the Specific Plan Area is comprised almost exclusively of cultivated crops (alfalfa, rye, and oat hayfields, and almond orchards) (Exhibit 3.4-1). At the time of the reconnaissance survey in 2016, one of the alfalfa fields had been fallowed and was becoming overrun with weeds though alfalfa was still growing in the field. Areas of ruderal vegetation are present between the agricultural fields, atop a buried irrigation pipe that traverses the site, and around the residences and adjoining animal pens and outbuildings. This ruderal vegetation is characterized by primarily annual, nonnative grasses and forbs, including wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Bermuda grass (*Cynodon dactylon*), Johnsongrass (*Sorghum halapense*), prickly lettuce (*Lactuca serriola*), blessed milk thistle (*Silybum marianum*), and wild radish (*Raphanus sativus*).



Source: AECOM 2017

Exhibit 3.4-1 Habitat Map

Trees on the site consist of almond trees in the orchards and ornamental trees, including deodar cedar (*Cedrus deodara*), pine (*Pinus* sp.), Chinese elm (*Ulmus parvifolia*), and fan palm (*Washingtonia* sp.) around the residences. In addition, two large valley oak (*Quercus lobata*) trees are present within the fenced back yard of the residence just west of the junior high school, and one large walnut (*Juglans* sp.) tree is present next to the cluster of residences at the corner of Moore Road and Whitmore Avenue. Table 3.4-1 provides a breakdown of the acreage of habitat types present in the Specific Plan Area.

Table 3.4-1. Habitat Types in the Specific Plan Area

Habitat Type	Acres
Alfalfa	20
Fallow Alfalfa	8
Almond Orchard	12
Oat and Rye Hayfield	10
Playing Field	12
School	22
Residential	10
Total	**94**

Source: Data compiled by AECOM in 2017

WILDLIFE

In general, the Specific Plan Area provides low value habitat for most wildlife species because of an overall lack of native vegetation and natural communities, and a high level of disturbance from agricultural activities, domestic animals (e.g., horses and goats), and residential use. The wildlife species most likely to use the Specific Plan Area are primarily common species that are adapted to highly disturbed, ruderal, or agricultural environments, such as western fence lizard (*Sceloperus occidentalis*), mourning dove (*Zenaida macroura*), American crow (*Corvus branchyrhychos*), northern mockingbird (*Mimus polyglottos*), California scrub-jay (*Aphelocoma californica*), black-tailed jackrabbit (*Lepus californicus*), raccoon (*Procyon lotor*), and coyote (*Canis latrans*). Agricultural fields, however, provide high-value foraging opportunities for a number of raptor species. Alfalfa, disked fields, fallow fields, and grain and hay crops tend to support large rodent populations and therefore provide good foraging habitat for Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), and more common raptors, such as American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), and red-tailed hawk (*Buteo jamaicensis*). The large trees around the residential properties provide nesting opportunities for raptors and other birds.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code, California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Special-Status Species

Special-status species include plants and animals in the following categories:

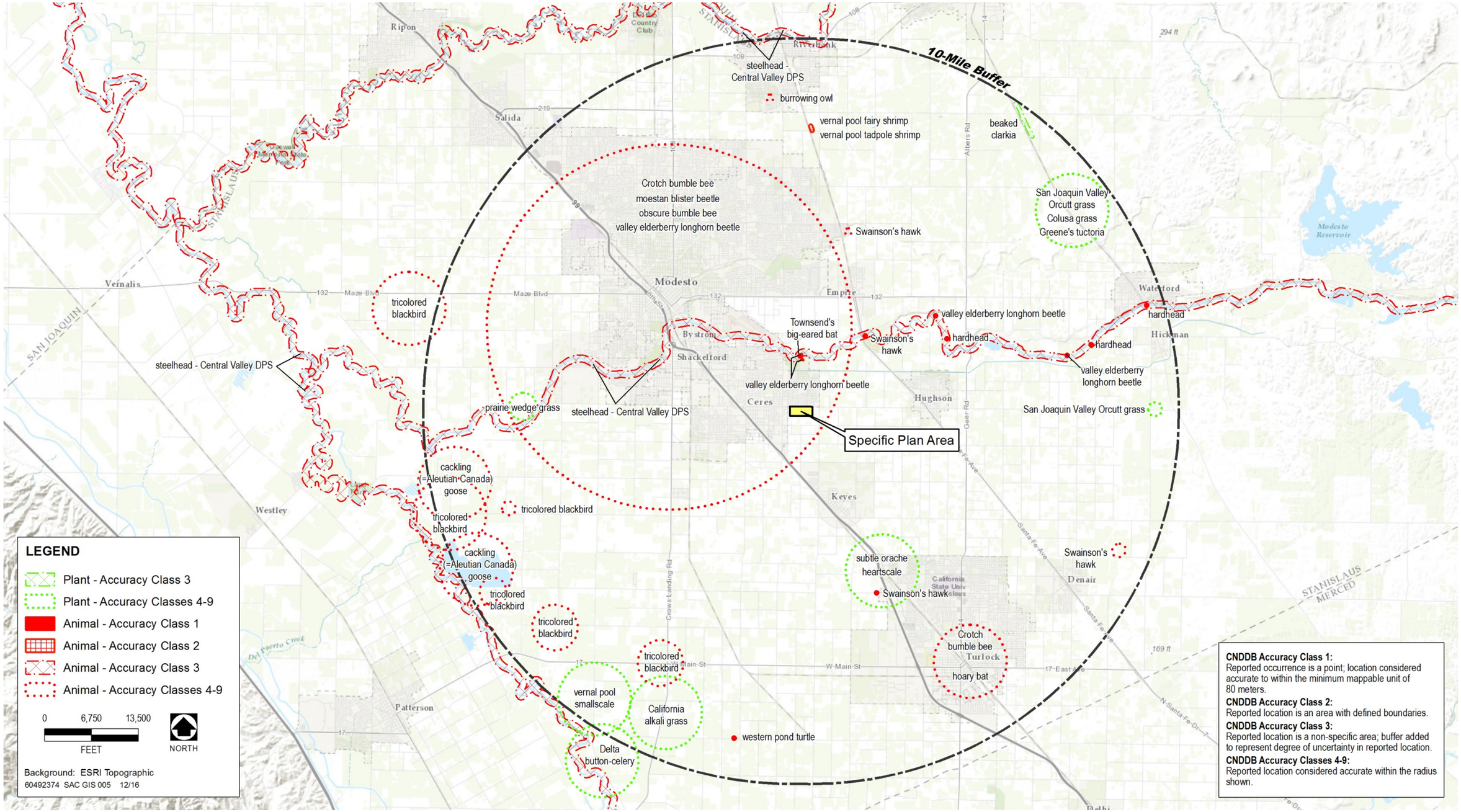
- species officially listed by the State of California or the federal government as endangered, threatened, or rare;
- candidates for State or federal listing as endangered or threatened;
- taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the CEQA Guidelines;
- species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local or regional planning documents; and
- taxa considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:

CRPR 1A - Plants presumed to be extinct in California;
CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere;
CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere;
CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere;
CRPR 3 – Plants about which more information is needed (a review list); and
CRPR 4 – Plants of limited distribution (a watch list).

All plants with a CRPR are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all of the plant taxa inventoried in CDFW's CNDDB, regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, 2A, and 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380. However, these species may be evaluated by lead agencies on a case-by-case basis.

The term "California species of special concern" is applied by CDFW to animals not listed under the federal ESA or CESA, but that are nonetheless declining at a rate that could result in listing, or that historically occurred in low numbers and have known threats to their persistence.

A list of special-status species that could potentially occur on the project site or immediate vicinity, provided suitable habitat conditions were present, was developed through review of biological resource databases, including the CNDDB, the CNPS Inventory, the Stanislaus County General Plan (Stanislaus County 2015), and the General Plan background report (Stanislaus County 2008). CNDDB (2017) and CNPS Inventory (2017) records of previously documented occurrences of special-status species were obtained for the Salida, Riverbank, Waterford, Brush Lake, Ceres, Denair, Crows Landing, Hatch, and Turlock U.S. Geological Survey 7.5-minute quadrangles. The Specific Plan Area is located in the Ceres quadrangle. Exhibit 3.4-2 shows the location of special-status species occurrences recorded in the CNDDB, that are within 10 miles of the Specific Plan Area.



Source: CNDDB 2016

Exhibit 3.4-2 Special-status Species Occurrences within 10 Miles of Specific Plan Area

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Special-Status Plants

Thirteen special status species have been documented in the CNDDB and CNPS Inventory nine-quadrangle search area surrounding the Specific Plan Area. The majority of these species are restricted to vernal pools, alkaline sinks and flats, or other wetland habitats that do not occur in the Specific Plan Area. Others are found in chenopod scrub or woodland habitats that also do not occur in the Specific Plan Area.

No special-status plant surveys have been conducted on the site, but the entire Specific Plan Area has been altered by human activities and is subject to ongoing vegetation management and surface soil manipulation. These activities, which include plowing, mowing, driving, and animal grazing, preclude the establishment of natural plant communities. Therefore, there is no potential habitat for special-status plant species within the Specific Plan Area.

Special-Status Wildlife

The CNDDB nine-quadrangle search documents 15 special-status wildlife species and 29 additional wildlife species are identified in the County's General Plan or other sources as occurring in the county. As noted in the Stanislaus County General Plan, the majority of special-status wildlife species known to occur in the county are primarily associated with vernal pool grasslands on the eastern side of the county, riparian habitats along the San Joaquin, Stanislaus, and Tuolumne rivers, and the grassland, woodland, and chaparral habitats located in the Coast Range foothills west of Interstate 5.

The following species were eliminated from further evaluation in this document because they are restricted to particular habitat types (e.g., chaparral, woodland, vernal pools, streams and rivers, marsh, riparian woodland and forest) that are not present in the Specific Plan Area or because the Specific Plan Area is outside of their known geographic range:

- Conservancy fairy shrimp (*Branchinecta conservatio*)
- longhorn fairy shrimp (*Branchinecta longiantenna*)
- vernal pool fairy shrimp (*Branchinecta lynchi*)
- vernal pool tadpole shrimp (*Lepidurus packardi*)
- valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- California tiger salamander (*Ambystoma californiense*)
- western spadefoot (*Spea hammondii*)
- California red-legged frog (*Rana draytonii*)
- foothill yellow-legged frog (*Rana boylii*)
- western pond turtle (*Emys marmorata*)
- silvery legless lizard (*Anniella pulchra pulchra*)
- blunt-nosed leopard lizard (*Gambelia sila*)
- coast horned lizard (*Phrynosoma blainvillii*)
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*)
- Alameda whipsnake (*Masticophis lateralis euryxanthus*)
- giant garter snake (*Thamnophis gigas*)
- least Bell's vireo (*Vireo bellii pusillus*)
- cackling goose (*Branta hutchinsii leucopareia*)
- bald eagle (*Haliaeetus leucocephalus*)

- California least tern (*Sternula antillarum*)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- yellow-breasted chat (*Icteria virens*)
- song sparrow – Modesto population (*Melospiza melodia*)
- green sturgeon (*Acipenser medirostris*)
- steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus*)
- Chinook salmon – Central Valley spring-run (*Oncorhynchus tshawytscha*)
- San Joaquin roach (*Lavinia symmetricus* ssp. 1)
- hardhead (*Mylopharodon conocephalus*)
- Sacramento splittail (*Pogonichthys macrolepidotus*)
- Riparian brush rabbit (*Sylvilagus bachmani riparius*)
- Fresno kangaroo rat (*Dipodomys nitratoides exilis*)
- Riparian woodrat (*Neotoma fuscipes riparia*)
- San Joaquin kit fox (*Vulpes macrotis*)

The remaining species were evaluated further based on specific habitat requirements, geographic distribution, and elevation range, as described in Table 3.4-2.

Table 3.4-2. Special-Status Wildlife with Potential to Occur in the Specific Plan Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Birds				
Tricolored blackbird *Agelaius tricolor* (nesting colony)	–	C	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs. Requires open water, protected nesting substrate, and nearby foraging habitat.	Could forage on the project site, but no suitable nesting habitat is present. Nearest known active nesting records are from 9 miles southwest of the project site, near the San Joaquin River.
Golden eagle *Aquila chrysaetos* (year round)	–	FP	Forages in large open areas of foothill shrub and grassland habitats and occasionally croplands.	Could forage on the project site, but no suitable nesting habitat is present. Golden eagles migrate through and winter in the Central Valley, but the valley floor is not within the core breeding range and typical habitat is in rolling foothills, mountains, and deserts.
Burrowing owl *Athene cunicularia* (burrow sites)	–	SC	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing underground rodent burrows or friable soils, and open, well-drained terrain.	Could occur; no ground squirrel burrows were observed on site, but habitat is potentially suitable and there are gopher/vole burrows. There is one CNDDB record of this species within the nine-quadrangle search area, from just south of Riverbank, approximately 8 miles north of the Specific Plan Area.
Swainson's hawk *Buteo swainsoni* (nesting)	–	T	Forages in grasslands and agricultural lands; nests in riparian forests or woodlands and isolated trees.	Could occur; grassland on the project site provides suitable foraging habitat and potential nesting trees are present along the perimeter of the property and in surrounding areas. There are four nesting records within 10 miles of the Specific Plan Area.
Mountain plover *Charadrius montanus* (wintering)	_	SC	Forages in short grasslands and plowed agricultural fields where vegetation is sparse and trees are absent.	Unlikely to occur; the Specific Plan Area is outside of this species' currently known wintering range, which in Stanislaus County, is restricted to areas west of Modesto and Ceres near the San Joaquin River.

Table 3.4-2. Special-Status Wildlife with Potential to Occur in the Specific Plan Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
White-tailed kite *Elanus leucurus* (nesting)	–	FP	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	Could occur; hayfields on the project site provide suitable foraging habitat and potential nesting trees are present in residential areas.
Loggerhead shrike *Lanius ludovicianus* (nesting)	–	SC	Forages and nests in grasslands, shrublands, and open woodlands.	Could occur; suitable nesting and foraging habitat is present. There are no CNDDB records of this species in the nine-quad search area. However, nesting has been documented within the county.
Mammals				
Pallid bat *Antrozous pallidus*	_	SC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in rock crevices, oak hollows, bridges, or buildings.	Maternity and roosting colonies unlikely to occur on-site because of lack of suitable habitat.
Western red bat *Lasiurus blossevilli*	–	SC	Roosts primarily in dense tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards (Pierson et al. 2004). Prefers habitat edges and mosaics with trees that are protected from above and open below and open areas for foraging.	Could occur; breeding or roosting individuals could occur in the on-site orchards or other trees.
Townsend's big-eared bat *Corynorhinus townsendii*	_	SC	Typically roosts in caves; however, colonies of <100 individuals occasionally nest in buildings or bridges. Forages in all habitats except alpine and subalpine, though most commonly in mesic forests and woodlands.	Maternity and roosting colonies unlikely to occur on site because of lack of suitable habitat. Could forage on site. There is a 2012 CNDDB record of this species roosting on a bridge over the Tuolumne River about 2.5 miles northeast of the Specific Plan Area.
American badger *Taxidea taxus*	_	SC	Drier open shrub, forest, and herbaceous habitats with friable soils for digging burrows.	Unlikely to occur, requires extensive patches of open, undisturbed habitat. The site's agricultural, residential, and school uses, as well as adjacency to urban development make it unsuitable for this species. There are no CNDDB records of this species in the nine-quad search area, although it has been documented within the County.

Notes: CNDDB = California Natural Diversity Database; USFWS = U.S. Fish and Wildlife Service

[1] Legal Status Definitions

State:

C = Candidate for listing (legally protected)

FP = Fully protected (legally protected)

SC = Species of special concern (no formal protection other than CEQA consideration)

T = Threatened (legally protected)

[2] Potential for Occurrence Definitions

Unlikely to occur: Species is unlikely to be present due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.

Source: CNDDB 2017; Stanislaus County 2015, 2008; Shuford and Gardali 2008; data compiled by AECOM in 2017

Sensitive Habitats and Special-status Plant Communities

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA Guidelines, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, and the State's Porter-Cologne Act, as discussed under "Regulatory Framework" below. Sensitive natural habitat may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species.

There are no potential waters of the United States, waters of the state, wetlands, or other sensitive habitats in the Specific Plan Area.

CDFW maintains a list of plant communities that are native to California. Within that list, CDFW identifies special-status plant communities (a.k.a. sensitive natural communities), which they define as communities that are of limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects (CDFW 2013:ix). These communities may or may not contain special-status species or their habitat. Special-status plant communities are tracked in the CNDDB, a statewide inventory of the locations and conditions of the state's rarest plant and animal taxa and vegetation types. None of the plant communities present in the Specific Plan Area are included on CDFW's list of special-status plant communities.

Critical Habitat

Critical habitat has been designated in Stanislaus County for 11 species listed under the federal Endangered Species Act. As shown in Figure 3.4-2 of the County General Plan, the Specific Plan Area is not within any of these designated critical habitat areas, which are located primarily in the eastern foothill portions of the county where vernal pool grasslands are found and in the Interior Coast Range Mountains at the western edge of the county.

3.4.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

Pursuant to the ESA (16 U.S.C. Section 1531 *et seq.*), U.S. Fish and Wildlife Service (USFWS) has regulatory authority over species listed or proposed for listing as endangered or threatened. USFWS and the National Marine Fisheries Service have authority over projects that may result in take of a species listed as threatened or endangered under ESA (i.e., a Federally listed species). In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under Federal jurisdiction or in violation of State law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

The take prohibition of ESA Section 9 applies only to listed species of fish and wildlife. Section 9(a)(2)(B) describes federal protection for endangered plants. In general, ESA does not protect listed plants located on nonfederal land (i.e., areas not under federal jurisdiction), unless such species are already protected by State law.

Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Critical habitat identifies specific areas that have the physical and biological features essential to the conservation of a listed species and that may require special management considerations or protection. Section 7(a)(2) requires federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroying or adversely modifying designated critical habitat.

For projects where federal action is not involved and take of a listed species may occur, a project proponent may seek an incidental take permit under section 10(a) of the ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan that ensures minimization and mitigation of impacts associated with the take.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in Title 50 of the CFR, Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act

CESA (California Fish and Game Code Section 2050, *et seq.*) directs state agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that reasonable and prudent alternatives shall be developed by CDFW, together with the project proponent and any state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible. Under CESA, project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding to implement those mitigation measures and monitor compliance with and the effectiveness of the measures must be ensured. Standard CESA issuance requirements can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

A “take” of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include “harm” or “harass” as is included in the federal act. As a result, the threshold for a take under CESA may be higher than under ESA because habitat modification is not necessarily considered take under CESA. The take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The State has the authority to issue an incidental take permit under California Fish and Game Code Section 2081, or to coordinate with USFWS during the Section 10(a) process to make the federal permit consistent with CESA.

As under federal law, listed plants have considerably less protection than fish and wildlife under California State law. The California Native Plant Protection Act (California Fish and Game Code Section 19000 et seq.) allows

landowners to take listed plant species from, among other places, a canal, lateral ditch, building site, or road, or other right-of-way, provided that the owner first notifies CDFW and gives the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed.

California Fish and Game Code – Fully Protected Species

Four sections of the California Fish and Game Code (Fish and Game Code Sections 3511, 4700, 5050, and 5515) list 37 fully protected species. These statutes prohibit take or possession at any time of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

California Fish and Game Code – Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young. These violations can be caused by disturbance of nesting pairs by nearby human activity.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Stanislaus County General Plan

The Conservation/Open Space Element of the Stanislaus County General Plan emphasizes conservation and management of natural resources and the preservation of open space (any parcel or area of land or water that is essentially unimproved) and contains several biological resources goals. Policies and associated implementation measures aimed at preserving and protecting biological resources in the County, including sensitive habitats and special-status species and the habitats that support them, are provided in the General Plan to achieve the specified conservation goals. The following General Plan policies and implementation measures are relevant to biological resources that occur, or may occur, in the Specific Plan Area:

- **Policy Two –** Assure compatibility between natural areas and development.

    - **Implementation Measures**

        1. Review zoning regulations and landscaping requirements for compatibility between proposed development and natural areas, including protection from invasive plants.

        2. Review all development requests to ensure that sensitive areas (e.g., riparian habitats, vernal pools, rare plants) are left undisturbed or that mitigation measures acceptable to appropriate state and federal agencies are included in the project.

- **Policy Three –** Areas of sensitive wildlife habitat and plant life (*e.g.*, vernal pools, riparian habitats, flyways and other waterfowl habitats, etc.) including those habitats and plant species listed in the General Plan Support Documents or by state or federal agencies shall be protected from development and/or disturbance.

- **Implementation Measures**

    2. In known sensitive areas, the State Department of Fish and Wildlife [CDFW] shall be notified as required by the California Native Plant Protection Act; the U.S. Fish and Wildlife Service also shall be notified.

    3. All discretionary projects that will potentially impact riparian habitat and/or vernal pools or other sensitive areas shall include mitigation measures for protecting that habitat.

- **Policy Twenty-Nine** – Habitats of rare and endangered fish and wildlife species, including special status wildlife and plants, shall be protected.

    - **Implementation Measures**

        1. The County shall utilize the California Environmental Quality Act (CEQA) process to ensure that development does not occur that would be detrimental to fish, plant life, or wildlife species.

        2. The County shall utilize the California State Department of Fish and Wildlife's California Natural Diversity Data Base and the California's Native Plant Society plant lists as the primary sources of information on special status wildlife and plants.

        3. The County shall protect sensitive wildlife habitat and plant life through the strategies identified under Policy Three of this element.

City of Ceres 2035 General Plan

The Ceres 2035 General Plan seeks to balance the need for growth while encouraging the conservation and enhancement of the area's agricultural and natural resources, frequently in cooperation with other agencies. The following Ceres 2035 General Plan (City of Ceres 2018) policies related to biological resources are applicable to the proposed Specific Plan.

Agriculture and Natural Resources

- **4.B.2 Recreational Open Space**. Site and design City parks to include natural open space areas for passive recreation, wildlife study and enjoyment, increasing biodiversity, and stormwater management.

- **Policy 4.D.1 Special-Status Species**. Support the preservation of habitats of rare, threatened, endangered, and other special-status species. Require development in areas known to have value for wildlife to be carefully planned and, where possible, sited to maintain reasonable wildlife value of the habitat.

- **Policy 4.D.2 Biotic Resource Evaluation**. Require, as part of the environmental review process prior to approval of discretionary development permits involving parcels within a significant ecological resource area, a biotic resources evaluation of the site by a qualified biologist. Significant ecological resource areas include, at a minimum, the following:

    - any habitat that supports rare, threatened, or endangered animals or plants; and

- riparian and wetland habitats associated with the Tuolumne River.

Such evaluation should consider the potential for significant impact on biological resources, and identify measures to feasibly mitigate any impacts or otherwise indicate why mitigation would not be feasible. In approving any such permit, the City shall determine the feasibility of the identified mitigation measures.

- **Policy 4.D.3 Significant Biological Resources**. Support and cooperate with the efforts of other local, State, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered, threatened, or rare species and their habitats, wetland habitats, wildlife migration corridors, and locally-important species/communities.

- **Policy 4.D.4 Native and Drought Tolerant Plants**. Utilize native and drought-tolerant plants in landscaping for public buildings and parks. Encourage the use of native and drought-tolerant plant species on private property, and prohibit the use of invasive species.

- **Policy 4.E.2 Healthy Canopy**. Nurture a healthy tree canopy throughout the city, along streets and in parking lots, residential areas, and parks.

City of Ceres Municipal Code Chapter 12.16 Street Trees

This Chapter implements the planting and preservation of street trees, and regulates the maintenance and removal, and establishes the varieties, minimum size, methods and locations for the planting thereof, and other related matters.

3.4.3 Environmental Impacts and Mitigation Measures

Methodology

Potential impacts on biological resources resulting from implementation of the proposed project were determined by mapping and quantifying common and sensitive habitats and by evaluating potential effects to common and special-status species that could result from loss of these habitats and other potential direct and indirect effects. It is conservatively assumed for purposes of this analysis that all existing vegetation, including mature trees at existing residences, could be removed as a result of the project and that all existing habitat functions would be lost.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the CEQA Guidelines. The project would result in a significant impact related to biological resources if it would do any of the following:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- have a substantial adverse effect on federally protected waters of the United States, including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- 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; or
- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

ISSUES NOT DISCUSSED FURTHER

- **Sensitive Natural Plant Communities—**No riparian communities or other sensitive natural communities are present in the Specific Plan Area. Development of the proposed project would not result in direct removal of any sensitive natural community or riparian habitat and would not include alteration of any streams or development or uses adjacent to any streams or other sensitive natural communities. Therefore, project implementation would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.
- **Federally Protected Waters of the United States—**There are no aquatic habitats or potential waters of the United States present in the Specific Plan Area. Development of the Specific Plan Area would not result in direct removal or fill of wetlands or other waters or in alteration by hydrological interruption, or other means of any water of the United States. Therefore, project implementation would not have a substantial adverse effect on federally protected waters of the United States, including wetlands.
- **Wildlife Movement and Migratory Routes—**No established migratory routes have been identified in the Specific Plan Area. According to the California Essential Habitat Connectivity Project, the Specific Plan Area is not located within a Natural Landscape Block or Essential Habitat Connectivity area (CFDW 2017). Important wildlife movement corridors within the region are located primarily at the eastern and western edges of the County toward the low foothills of the Sierra Nevada and the foothills of the Interior Coast Range (Stanislaus County 2008, Figure 3.4-3). The San Joaquin, Stanislaus, and Tuolumne rivers and Dry Creek are other important dispersal corridors for wildlife across the County, but these are located outside of the Specific Plan Area. Project development would not interfere substantially with the movement of any native resident or migratory wildlife species because the project site does not currently provide an important connection between any areas of natural habitat that would otherwise be isolated. Therefore, project implementation would not have an impact on wildlife movement. Wildlife nursery sites are addressed under Impact 3.4-5.

- **Habitat Conservation Plan—**There are no adopted or proposed habitat conservation plans covering the Specific Plan Area. Therefore, project implementation would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

- **Survival of Species—**As described in this section, the project site provides limited value to wildlife species and development of the site would not eliminate any habitat important to the long-term survival of any species or community and would not substantially reduce the number or restrict the range of any species.

IMPACT ANALYSIS

IMPACT 3.4-1 Swainson's Hawk, Other Nesting Raptors, and Burrowing Owl. *Specific Plan implementation would result in loss of suitable nesting and foraging habitat for Swainson's hawk, white-tailed kite, burrowing owl, and other raptors. Project construction could disturb active nests on or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. This impact is considered potentially significant.*

Implementing the Specific Plan would result in removal of approximately 38 acres of alfalfa and grass hayfields that provide suitable foraging habitat for Swainson's hawk, white-tailed kite, and burrowing owl. Trees that provide potential nest sites for Swainson's hawk, white-tailed kite, and other raptors would also be removed. No ground squirrels or signs of burrowing owls were observed during the reconnaissance survey; however, small mammal burrows (gopher/vole sized), indicating soils are friable, and debris piles were observed that may provide suitable nesting and cover habitat for burrowing owl. Potential burrow habitat is also present on adjacent properties at field edges. All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Common raptors that could nest on or near the Specific Plan Area include red-tailed hawk, great horned owl, and barn owl.

Vegetation removal, grading, and other construction activities could result in mortality of individuals and nest abandonment. If trees are to be removed during the raptor breeding season (February–August), mortality of eggs and chicks of tree nesting raptors could result if an active nest were present. In addition, project construction could disturb active nests near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

Burrowing owls need burrows at all times to survive and displacing individuals from their burrows can result in indirect impacts such as predation, increased energetic costs, increased stress, and risks associated with having to find and compete for burrows, all of which can lead to take or reduced reproduction.

Swainson's hawks generally nest within two miles of suitable foraging habitat, which consists of alfalfa, disked fields, fallow fields, dry-land pasture, beets, tomatoes, irrigated pasture, grains, other row crops, and uncultivated grasslands (Estep 1989, Estep pers. comm. 2007, Estep 2009). The most important foraging habitat lies within a one-mile radius of each nest (City of Sacramento et. al 2003: Appendix H, page 5-29). However, Swainson's hawks have been recorded foraging up to 18.6 miles from nest sites (Estep 1989) and foraging habitat within 10 miles of an active nests is generally considered to be important to supporting the reproductive success of that pair.

There are four nesting Swainson's hawk records within 10 miles of the Specific Plan Area and 3 of these 4 known nests are within 5 miles. The loss of 38 acres of foraging habitat from the Specific Plan Area could affect nesting

success, survival rates, and availability of prey for the local population, or result in displacement of nesting pairs of Swainson's hawk or white-tailed kite. Therefore, the loss of foraging habitat resulting from development of the Specific Plan Area is considered a **potentially significant** impact.

Project construction could result in direct destruction of an active Swainson's hawk, white-tailed kite, burrowing owl, or other raptor nest or disturb nesting raptors located on or near the project site, resulting in nest abandonment by adult birds and abandonment of chicks and eggs, causing mortality. Direct and indirect impacts on active raptor nests or burrows are considered **potentially significant**.

Mitigation Measures

Mitigation Measure 3.4-1a: Avoid Direct Loss of Swainson's Hawk and Other Raptors

Tree removal shall be completed during the nonbreeding season for raptors (between September 1 and the end of February).

To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors (not including burrowing owl) nesting on or adjacent to the project site, the project applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site for construction activities conducted during the breeding season (between March 1 and August 31). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk.

Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined in coordination with CDFW the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest.

The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances.

Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.

Mitigation Measure 3.4-1b: Avoid Direct Loss of Burrowing Owl

To avoid, minimize, and mitigate potential impacts on burrowing owl, the project applicant shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012).

If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to CDFW and no further mitigation will be required.

If an active burrow is found during the nonbreeding season (between September 1 and January 31), the project applicant will consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan will be developed in consultation with CDFW and in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012). Owls will be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If an active burrow is found during the breeding season (between February 1 and August 31), occupied burrows will not be disturbed and will be provided with a 150- to 1,500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150 and 1,500 feet) will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012:9). Once the fledglings are capable of independent survival, the owls will be relocated outside the impact area following a burrowing owl exclusion and relocation plan developed in consultation with CDFW and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction.

If active burrowing owl nests are found on the project site and these nest sites are lost as a result of implementing the project, then the project applicant shall mitigate the loss through preservation of other known nest sites at a ratio of 1:1. Preservation shall be provided through purchase of credits from a CDFW-approved burrowing owl conservation bank if credits are available in an appropriate location. If mitigation credits are not available, the applicant shall develop a mitigation and monitoring plan for the compensatory mitigation areas in consultation with CDFW.

The mitigation and monitoring plan will include detailed information on the habitats present within the preservation areas, the long-term management and monitoring of these habitats, legal protection for the preservation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). All burrowing owl mitigation lands shall be preserved in perpetuity and

incompatible land uses shall be prohibited in habitat conservation areas. Burrowing owl mitigation lands shall be located as close as possible, based on availability of sufficient suitable habitat, to the project site.

The project applicants shall transfer said burrowing owl mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW. The City, after consultation with CDFW and the Conservation Operator, shall approve the content and form of the conservation easement. The City, CDFW, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to ensure compliance with the terms of the easement.

Mitigation Measure 3.4-1c: Prepare and Implement a Swainson's Hawk Foraging Habitat Mitigation Plan.

Before any ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with CDFW.

The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the County. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within 1 mile of the project site, 0.75:1 if there is an active nest within 5 miles but greater than 1 mile away, and 0.5:1 if there is an active nest within 10 miles but greater than 5 miles away. If there is an active nest within 1 mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area of the regional Swainson's hawk population based on the habitat assessment described above.

Before acceptance of such proposed mitigation, the City shall consult with CDFW regarding the appropriateness of the mitigation. If mitigation is accomplished through a conservation easement, then such an easement shall ensure the continued management of the land to maintain Swainson's hawk foraging values, including but not limited to, ongoing agricultural uses and the maintenance of all existing water rights associated with the land. The conservation easement shall be recordable and shall prohibit any activity that substantially impairs or diminishes the land's capacity as suitable Swainson's hawk foraging habitat.

Purchase of credits from a CDFW-approved Swainson's hawk mitigation bank may be used as an alternative to conservation easements to compensate for foraging habitat lost as a result of the project. The mitigation bank must be located within the range of the regional Swainson's hawk population. Before purchase of mitigation credits from the mitigation bank, the City shall consult with CDFW to confirm that

the proposed mitigation bank provides appropriate foraging habitat relative to the proximity to the project site and quality of habitat.

Swainson's hawk mitigation land shall be transferred, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a). CDFW and the Conservation Operator shall approve the content and form of the conservation easement. CDFW and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.

Significance after Mitigation

Implementing Mitigation Measures 3.4-1a, 3.4-1b, and 3.4-1c would reduce significant impacts on Swainson's hawk, white-tailed kite, burrowing owl, and other raptors to a **less-than-significant** level because it would ensure that these species are not disturbed during nesting so that project construction would not result in nest abandonment and loss of eggs or young. These measures would also ensure that Swainson's hawk and burrowing owl habitat would be preserved at the appropriate ratio of habitat value lost.

IMPACT 3.4-2 Disturbance of Loggerhead Shrike and Common Nesting Birds. *Project implementation would result in loss and disturbance of potential nesting habitat for loggerhead shrike and common nesting birds protected under MBTA and California Fish and Game Code. Project construction could disturb active nests on or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. This impact is considered* ***potentially significant****.*

Implementing the project would result in removal of trees and shrubs that provide suitable nesting habitat for loggerhead shrike and other nesting birds. Other trees and shrubs that provide potential nest sites for loggerhead shrike would also be removed. Removal or disturbance of potentially suitable habitat during construction could result in nest abandonment and loss of eggs or young if an active loggerhead shrike nest were to be present during ground-disturbing activities.

Vegetation removal and ground disturbances associated with project implementation could result in direct destruction of active nests of loggerhead shrike, or other birds protected under the MBTA. Project construction could also result in disturbance of breeding birds causing nest abandonment by the adults and mortality of chicks and eggs. While loss of some nests of common bird species (those not meeting the definition of special-status as provided above) would not be considered a significant impact under CEQA because it would not result in a substantial effect on their populations locally or regionally, destruction of bird nest is a violation of the MBTA and Section 3503 of the California Fish and Game Code and mitigation to avoid the loss of active nests of these species is required for compliance with these regulations.

Loss of an active loggerhead shrike nest would be a **potentially significant** impact.

Mitigation Measure

Mitigation Measure 3.4-2: Avoid Direct Loss of Loggerhead Shrike and Protected Bird Nests

To the extent feasible, City shall encourage vegetation removal, grading, and other ground disturbing activities to be carried out during the nonbreeding season (between September 1 and January 31) for protected bird species in this region to avoid and minimize impacts to loggerhead shrike and other nesting birds.

For any project activity that would occur during the nesting season (between February 1 and August 31), the project applicant shall conduct a preconstruction survey. The preconstruction survey shall be conducted by a qualified biologist before any activity occurring within 500 feet of suitable nesting habitat for any protected bird species. The survey shall be timed to maximize the potential to detect nesting birds, and should be repeated within 10 days of the start of project-related activity.

If an active loggerhead shrike or common bird species protected by the Migratory Bird Treaty Act or California Fish and Game Code is found, the qualified biologist shall establish a buffer around the nest. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 50 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances as determined by a qualified biologist in consultation with CDFW.

If common bird nests are found, a qualified biologist shall ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code Section 3503.

Monitoring of all protected nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Significance after Mitigation

Implementing Mitigation Measure 3.4-2 would reduce potentially significant impacts on loggerhead shrike and other nesting birds to a **less-than-significant** level because it would ensure these birds are not disturbed during nesting so that project construction would not result in nest abandonment and loss of eggs or young.

IMPACT 3.4-3 Western Red Bat. *Project implementation would result in loss of orchard trees and other trees that may support breeding western red bats. If red bats are using these trees as breeding sites, removal of trees could result in injury and mortality of western red bat. This impact is considered* ***potentially significant****.*

Western red bats are generally solitary bats that roost in trees and shrubs in riparian areas and orchards. In the Central Valley they breed May through August (Pierson et al. 2006). Removal of a tree during the breeding season that provided roosting habitat for a pregnant or nursing female could result in injury or death to the mother and her young. This impact would be **potentially significant**.

Mitigation Measure

Mitigation Measure 3.4-3: Avoid, Minimize, and Mitigate Loss of Western Red Bat Roosts.

If any trees are proposed for removal during the breeding season (May through August), a qualified biologist shall be retained to conduct a focused survey for red bats in roosting trees proposed for removal. An evening emergence survey shall note the presence or absence of bats and could consist of visual survey at the time of emergence. If evidence of red bat use is observed, the location of the trees used by the bats shall be determined. Bat detectors may be used to supplement survey efforts, but are not required. If no bat roosts are found, then no further study is required.

If red bats are determined to be present in trees in the project area, the tree shall be protected until breeding is completed and the young are capable of independent flight. If a tree supporting a red bat must be removed, a detailed mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed, in consultation with CDFW, before implementation.

Significance after Mitigation

Implementing Mitigation Measure 3.4-3 would reduce potentially significant impacts on western red bats to a **less-than-significant** level because it would ensure that project construction would not result in bat mortality or abandonment and loss of young.

IMPACT 3.4-4 Conflicts with Policies Protecting Biological Resources. *Project implementation could conflict with policies that apply to sensitive species and their habitats. This impact is considered* ***potentially significant****.*

The Ceres 2035 General Plan includes several policies that call for protection of sensitive species and habitats. As discussed in Impacts 3.4-1 through 3.4-5, Specific Plan implementation would result in removal of habitat that has potential to support special-status plants and wildlife, Swainson's hawk foraging habitat, and wetlands and waterways. This habitat removal would conflict with Ceres 2035 General Plan policies unless mitigated. This impact is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.4-4: Implement Mitigation Measures 3.4-1, 3.4-2, and 3.4-3.

Significance after Mitigation

Implementing Mitigation Measures 3.4-1, 3.4-2, and 3.4-3 would reduce potentially significant impacts from conflicts with policies protecting biological resources to a **less-than-significant** level because it would ensure impacts on sensitive species and their habitats are mitigated consistent with Ceres 2035 General Plan policies and implementation measures.

IMPACT 3.4-5 Impede the Use of Native Wildlife Nursery Sites. *Project implementation would result in loss of human-made structures and trees that may support maternity bat roosts. If these structures are used by bats as maternity colony roosts, implementation of the project could result in mortality of large numbers of bats and inability to reproduce young. This impact is considered* ***potentially significant****.*

Roosting habitat is typically a limiting factor to bat distribution. Many bat species roost in large colonies during the breeding season and maternity colony roosts can be active from approximately early April until mid-October. If a maternity bat roost were present in in existing trees or structures, removal of these trees or structures could result in loss of a maternity colony. Because large numbers of common bat species can roost in a single maternity colony, these maternity colonies can represent a large proportion of the population in any given area and loss of a maternity colony can wipe out a large proportion of a regional population. This impact would be **potentially significant**.

Mitigation Measure

Mitigation Measure 3.4-5: Avoid, Minimize, and Mitigate Loss of Bat Roosts.

Before removal of any trees or existing buildings, a qualified biologist shall conduct a focused survey for roosting bats in suitable trees and structures. Surveys should be conducted as far in advance of project implementation as feasible to allow sufficient time to coordinate with CDFW and develop a mitigation plan if necessary, as described below. The survey shall be conducted in the fall to determine if structures are used as hibernacula and in spring and/or summer to determine if they are used as maternity or day roosts. An evening emergence survey shall note the presence or absence of bats and could consist of visual survey at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts, but are not required. If no bat roosts are found, then no further study is required.

If bat roosts are determined to be present, the bats shall be excluded from the roosting site before the roost structure is removed. If roosts must be removed, a detailed mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed, in consultation with CDFW, before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts will be restricted during periods of sensitive activity (*e.g.*, during hibernation or while females in maternity colonies are nursing young).

Compensatory mitigation for the loss of each roost (if any) shall be developed, in consultation with CDFW, and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost site. Once compensation is implemented and it is confirmed that bats are not present in the roost site, the roost structure may be removed.

Significance after Mitigation

Implementing Mitigation Measure 3.4-3 would reduce potentially significant impacts on bat maternity roosts to a **less-than-significant** level because it would ensure maternity roosts are not disturbed so that Specific Plan construction would not result in bat mortality or abandonment and loss of young and would provide replacement roosts to compensate for loss of existing maternity roosts of common bat species.

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3.5 CULTURAL RESOURCES

This section evaluates potential impacts the Specific Plan may have on cultural resources. Cultural resources are defined as buildings, sites, districts, structures, burials, or objects having historical, architectural, archaeological, or cultural importance. They can be generally split into three categories: prehistoric or historic archaeological sites; built environment resources, which includes buildings, structures, objects, districts, and landscapes; and Tribal Cultural Resources, or places or artifacts with a special cultural significance to Native Americans. The section begins by describing the natural and cultural environmental setting identified through background research, Native American consultation, and field investigations, and is followed by an overview of pertinent regulations and, finally, an impact analysis.

Potential impacts related to paleontological resources are addressed in Section 3.6 of this EIR.

3.5.1 ENVIRONMENTAL SETTING

The Whitmore Ranch Specific Plan Area (also called "the project site") is located adjacent to the southeastern boundary of Ceres City Limits in Stanislaus County in the San Joaquin Valley, which, together with the Sacramento Valley, comprises the Central Valley Geomorphic Province. Specifically, Ceres is located within the U.S. Geological Survey (USGS) Ceres 7.5-minute topographic map, Township 4 South, Range 9 East, Section 13. The topography of Ceres is nearly flat, with elevations ranging from approximately 80 to 100 feet above mean sea level.

The Central Valley is a forearc basin consisting of thousands of feet of sedimentary deposits that has undergone alternating periods of subsidence and uplift over millions of years. Most of the surface of the San Joaquin Valley is covered with Pleistocene (1.8 million to 11,000 years Before Present [B.P.]) and Holocene (11,000 years B.P. to Present Day) alluvium, which consists of sediments from the Sierra Nevada to the east and the Coast Ranges to the west that were carried by water and deposited on the valley floor.

A review of the Geologic Map of the San Francisco–San Jose Quadrangle (Wagner et al. 1991) indicates that the Specific Plan Area lies within the Modesto Formation. The Modesto Formation forms ancient alluvial terraces and some fans and channel ridges of major rivers, and can be divided into upper and lower members. It consists primarily of Hanford sandy loam, with less than 5 percent of varieties of Dinuba sandy loam, and Tujunga sandy loam (USDA 2013). Helley and Harwood (1985, citing Marchand and Allwardt 1981) suggest an age range of 12,000–26,000 years B.P. for the upper member, and 29,000–42,400 years B.P. for the lower member (i.e., Late Pleistocene in age).

The San Joaquin Valley has an arid-to-semiarid climate that is characterized by hot summers and mild winters. Aquatic habitats include sloughs, creeks, rivers, lakes, ponds, and permanent wetlands and their associated flora and fauna. Terrestrial habitats include seasonal wetlands, riparian forest, valley oak savanna, California prairie, and San Joaquin saltbush communities in the valley.

The Specific Plan Area has multiple uses, including residential properties dating from 1915–67, irrigated croplands and orchards, and two modern school campuses. Ceres has historically been a small farming community with little urban development. Review of historical maps, imagery, and documents shows that the Specific Plan Area has been used for rural-residential and agriculture (orchards and row crops) development since the first decade of the 20th century, other adjacent parcels have historically had the same mix of uses. The nearest

major water source is the Tuolumne River, which is located approximately 1.25 miles north of the Specific Plan Area.

PREHISTORIC SETTING

The Specific Plan Area (also called "the project site") is located within California's Central Valley region, where there have been few opportunities for archaeological investigations and many surface cultural sites have been destroyed by agricultural development, dam and levee construction, and river erosion, greatly limiting the archaeological understanding of this area (Rosenthal *et al.* 2007). Most of the archaeological data obtained from this region over the past three decades has been derived from small-scale investigations (Rosenthal *et al.* 2007).

Despite these hindrances, archaeologists have made continued efforts to provide a chronological timeframe for the Central Valley. Rosenthal *et al.* (2007) is one of the most recent contributions to provide a greater understanding of the region. This work takes the previously suggested timeframes and adjusts these with modern calibration curves to present an archaeological understanding of the Central Valley. The following section is adapted from Rosenthal *et al.* (2007). The dates presented for the following cultural sequences are based on calibrated radiocarbon dates.

- **The Paleo-Indian Period:** The Paleo-Indian Period (12,000 to 10,500 B.P.) saw the first demonstrated entry and spread of humans into California. Characteristic artifacts recovered from archaeological sites of this time period include fluted projectile points (constructed from chipped stones that have a long groove down the center called a "flute") and large, roughly fashioned cobble and bifacially-flaked stone tools that were used in hunting megafauna such as mastodon, bison, and mammoth that roamed the land during this time.

- **The Lower Archaic Period:** The beginning of the Lower Archaic Period (10,500 to 7500 B.P.) coincides with that of the Middle Holocene climatic change, which resulted in widespread floodplain deposition. This episode caused most of the earlier archaeological deposits to be buried. Most tools were manufactured of local materials, and distinctive artifact types include large dart points and the milling slab and handstone (i.e., mano).

- **The Middle Archaic Period:** The Middle Archaic Period (7500 to 2500 B.P.) is characterized by warm, dry conditions, which brought about the drying up of pluvial lakes. Economies were more diversified and may have included the introduction of acorn processing technology, although hunting remained an important source of food. Artifacts characteristic of this Period include milling stones and pestles and a continued use of a variety of implements interpreted as large dart points.

- **The Upper Archaic Period:** The Upper Archaic Period (2500 to 850 B.P.) corresponds with a sudden turn to a cooler, wetter, and more stable climate. The development of status distinctions based upon wealth is well documented in the archaeological record. The development of specialized tools, such as bone implements and stone plummets as well as manufactured shell goods were prolific during this time. The regional variance of economies was largely due to the seasonality of resources which were harvested and processed in large quantities.

- **The Emergent Period:** Several technological and social changes distinguish the Emergent Period (850 B.P. to Historic) from earlier cultural manifestations. The bow and arrow were introduced, ultimately replacing the dart and throwing spear, and territorial boundaries between groups became well established. In the latter

portion of this Period (450 to 1800 B.P.), exchange relations became highly regularized and sophisticated. The clam disk bead developed as a monetary unit of exchange, and increasing quantities of goods moved greater distances. It was at the end of this Period that contact with Euro-americans became commonplace, eventually leading to intense pressures on Native American populations.

ETHNOGRAPHIC SETTING

The Specific Plan Area lies within the ethnographic territory of the Northern Valley Yokuts, who occupied the lands on either side of the San Joaquin River from the Sacramento–San Joaquin Delta to south of Mendota. The Diablo Range marked the Yokuts' western boundary (Wallace 1978:462); the eastern edge would have lain along the Sierra Nevada foothills. Occupation of the northern parts of the range by the Yokuts may be relatively recent, as linguistic evidence points toward an earlier Miwok occupation. The Yokuts gradually expanded their range northward and clearly occupied the area during the Spanish Colonial period, as evidenced by mixed assemblages of historic and prehistoric artifacts. The late prehistoric Yokuts may have been the largest ethnic group in precontact California. The triblet, populated by a few hundred to a few thousand occupants, served as the basic political unit (Moratto 1984:173).

The Northern Valley Yokuts relied heavily on fish, such as the Chinook (or King) Salmon (*Oncorhynchus tshawytscha*), Pacific (or White) Sturgeon (*Acipenser transmontanus*), Shortnose (or Western) Sucker (*Chasmistes brevirostris),* and River Perch (*Archoplites interruptus*), as well as various species of water fowl, and Valley Oak (*Quercus lobata*) acorns for subsistence. Fishing, fowling, and harvesting wild plant foods were the main procurement activities. Hunting probably constituted a marginal subsistence activity (Wallace 1978: 464).

A variety of flaked and ground stone tools (e.g., knives, arrow and spear points, and rough cobble and shaped pestles) were common among Northern Valley Yokuts. Obsidian was a highly valued material for tool manufacture, and was generally imported. Northern Valley Yokuts also engaged in trading relationships with surrounding groups for commodities such as salt, marine shells, and basketry (Wallace 1978: 465).

They built a variety of structures including residential dwellings, ceremonial structures, and semi-subterranean sweat lodges. Dwellings were typically small and lightly built structures covered with woven tule reed mats (Wallace 1978: 464).

Euro-American contact with the Northern Valley Yokuts began with infrequent excursions by Spanish explorers traveling through the Sacramento and San Joaquin valleys in the late 1700s and early 1800s. Many Yokuts were lured or captured by missionaries and scattered among the various missions, although some escaped and returned to the valley. Yokuts frequently raided Spanish (and later Mexican) cattle herds, leading to retaliatory action by settlers. The malaria epidemic of 1833 decimated the Yokuts' population, killing thousands. The influx of Europeans during the Gold Rush era further reduced the population through disease and violent relations with miners. Although there was no gold in the Yokuts' territory, miners passing through on their way to the diggings caused a certain amount of upheaval. Many former miners later returned to settle and farm the area (Wallace 1978:469).

LOCAL HISTORIC SETTING

European settlement of northern San Joaquin Valley spread along the banks of the Tuolumne River, just north of what became the city of Ceres, during the Gold Rush, and expanded to the San Joaquin River with a series of

towns to supply and ferries to transport miners to the foothills. By 1854, Stanislaus County had sufficient population to separate from Tuolumne County and the county seat was moved to various towns until settling in Modesto in 1872. In 1853 and 1854, Congress passed pre-emption acts that allowed settlers in California to purchase a maximum of 160-acres of government-owned land. Large grain ranches that made up the majority of Stanislaus County by the 1880s were created by the merging of 160-acre lots into huge tracts. During this period, enterprising settlers began successful ranching operations in the San Joaquin Valley serving northern California population centers and wider markets. The valley was dry in the summer and wet in the winter, limiting potential crops. The only farming possible was dry farming of wheat and similar grains. Intensive agricultural settlement awaited the arrival of the Southern Pacific Railroad in 1870 and the development of irrigation (Smith 1976).

Key to the diversification of crops and the establishment of smaller farms in the San Joaquin Valley was the construction of the railroads. The Central Pacific Railroad (later known as the Southern Pacific) began surveying and building a route through the San Joaquin Valley in 1870. The company obtained extensive land grants, and profited by selling adjoining property to farmers, who then shipped their crops on the railroad. The Southern Pacific Railroad had a virtual monopoly on shipping in the San Joaquin Valley by the late 1880s. Towns constructed at regular intervals by the Southern Pacific on their rail line became the commercial and shipping centers of the San Joaquin Valley, such as Modesto, Ceres, and Turlock (Smith 1976; Orsi 2005).

Daniel Whitmore, the founder of Ceres, arrived in California in 1854. The community of Ceres was first settled in 1870 along the recently surveyed route for the Southern Pacific Railroad between Modesto and Turlock. Daniel Whitmore built the first house in what would become Ceres. The Daniel Whitmore House, still extant at 2928 Fifth Street, is located approximately one mile east of the Specific Plan Area. This house is listed in the National Register of Historic Places (NRHP). Whitmore established a post office for the town in his home in 1870, submitting the post office name of Ceres, in honor of the Roman goddess of agriculture. By 1872, the railroad was constructed through the town and in 1874 a permanent station was built. A store, schoolhouse, meeting hall, flour mill, boarding house, blacksmith shop, grain warehouses, and other infrastructure to serve the growing community were developed by the early 1880s. During its early years, agriculture became the leading economic force in Ceres, particularly wheat farming. Around this time, Daniel Whitmore had acquired 9,000 acres from the federal government in and around Ceres to grow wheat, and rented out tracts of land to between 800 and 1,000 tenants, also engaged in wheat farming. Collectively, these became known as “The Whitmore Ranch.” Daniel’s son Clinton N. (C. N.) helped his father manage his large wheat farm and inherited the vast land holdings after his father’s death in 1893, and was instrumental in the development of the Turlock Irrigation District (TID) as its first treasurer, to bring water to the region (Elliot & Moore 1883; Tinkham 1921; Gooch 1988; Tatam 1994; Bramhall 1914; Benzinger 2013).

In 1887, the State legislature passed the Wright Act, which allowed residents to form irrigation districts and levee taxes to fund their construction. In the late 1880s, in response to the thriving agriculture, the Modesto and Turlock Irrigation Districts were created to allow local farmers to irrigate crops more efficiently and effectively. The TID, serving areas south of the Tuolumne River, and the Modesto Irrigation District (MID) to the north, were the first districts formed under the act. To adequately develop irrigated water supplies, TID and MID entered into an agreement to purchase the water rights and property for a dam on the Tuolumne River in 1890. Together, the two irrigation districts shared the cost of the project and the water claims, constructing La Grange Dam between 1891 and 1893. Even though the TID formed in 1887, it was not until 1900 that water began to flow in the district. TID Laterals No. 1 and No. 2, which were built by 1906, approximately one-mile north and one-mile south of the Specific

Plan Area were connected by the Ceres Main Canal, which is located along the westernmost edge of the Specific Plan Area on the west side of Moore Road (Adams 1929; Patterson 1987).

As irrigation and railroad transportation spread throughout the San Joaquin Valley in the late 19th century, agriculture throughout the area diversified. In the 1870s, Stanislaus County farms of 1,000 acres or more, such as the Whitmore Ranch, made up nearly a quarter of the total land holdings in the county. It was not until the 1890s and into the first decade of the 20th century that the trend of intensified agriculture and smaller farms changed life in the Ceres area. After Daniel Whitmore's death, C.N. Whitmore began selling the lands of the Whitmore Ranch land holdings east of the town of Ceres along Whitmore Avenue into smaller sections, such as the Smyrna Park Tract in 1903, the Clinton Colony in 1906, the Gilbert Colony in 1908, and the Mayfield Tract in 1909. These were divided into lots ranging from 12 to 40 acres. The Specific Plan Area is located in Smyrna Park Colony lots 2 through 7, which were originally 20 acres each. C. N. Whitmore created the Ceres Fig Lands Company to advertise the 48-lot Smyrna Park as the first colony in the state to start large-scale cultivation of the Symrna or Calimryna fig (*Los Angeles Times* 8 May 1904; *Sunset Magazine* June 1904; Stanislaus County Recorded Maps 2016). By 1906, 500 acres of figs had been planted in the Ceres area and other orchards, such as peach, apricot, and almond, as well as alfalfa and other field crops, had been established (Stanislaus Board of Trade 1906; Bramhall 1914).

Dairy farming was also introduced into the area during this period. By the early 1900s, Ceres was still a small town, yet its population was growing at a steady rate. The first civic library opened in 1901 and the high school welcomed its first students in 1915. Ceres incorporated in 1918 with a population of 1,000 (City of Ceres 1997:4). In the first half of the 20th century, Ceres remained a small rural settlement. Ceres had a population of 1,332 before World War II, but the population nearly doubled after the postwar boom and reached 2,351 by 1950. Like most California cities, Ceres experienced residential growth during the post-World War II period. Residential subdivisions with mass-produced housing were established and new elementary and middle schools and a hospital were built. Peaches became the primary agricultural crop and were used in the dried fruit industry. A large dehydrating plant, the Ceres Dehydrating Plant, became a major local employer (Benziger 2010:97; City of Ceres 1997:4).

In 1968, the California Department of Transportation modernized State Route 99. The highway project bisected Ceres and resulted in the demolition of most of the central business district. By 1970, the population reached a high of 6,000. During this period, the commercial core was focused along Central and Whitmore Avenues and Hatch Road. As the population of Ceres increased, new municipal services were needed and the City built its wastewater treatment plant in 1979. Ceres continued to grow in the 1980s, and by 1990 its population was 25,000. The city's population grew to 45,417 in 2010 and to 47,155 as of 2016 (Benziger 2010:97; City of Ceres 1997:4; DOF 2016).

Located east of the city center, much of the area surrounding the Whitmore Ranch Specific Plan Area remained under agricultural production with rural residences interspersed until the mid-20th century, when lands were sold and developed with residential and commercial uses (USGS Modesto East 1939; USGS Ceres 1959; USGS Ceres 1969; USGS Ceres 1976; USGS Ceres 1987). In the first decade of the 21st century, rapid residential development occurred north of the Specific Plan Area. Recent residential developments include "Claremont Oaks" phases 1 and 2 between 2002 and 2004, "Pinehurst South" units 1 and 2 in 2004 and 2005, and "Capistrano" unit 2 in 2004, among others, which were all developed within the Eastgate Master Plan. To meet the demands of an increased population in the area, in 2006, the site of a former almond orchard within the Specific Plan Area was

developed as the La Rosa Elementary School. Cesar Chavez Junior High School was built on the site of a former orchard and rural residential property in 2011 (Ceres Unified School District 2016). Both schools were developed and are operated by the Ceres Unified School District. Eastgate Boulevard was extended southward across Whitmore Avenue to provide access to the new schools.

3.5.2 RESEARCH METHODOLOGY

Research included examination of data collected from earlier efforts, contact with the Native American Heritage Commission, and an archaeological and architectural examination of the Specific Plan Area.

BACKGROUND RESEARCH AND ARCHIVAL RESEARCH METHODS

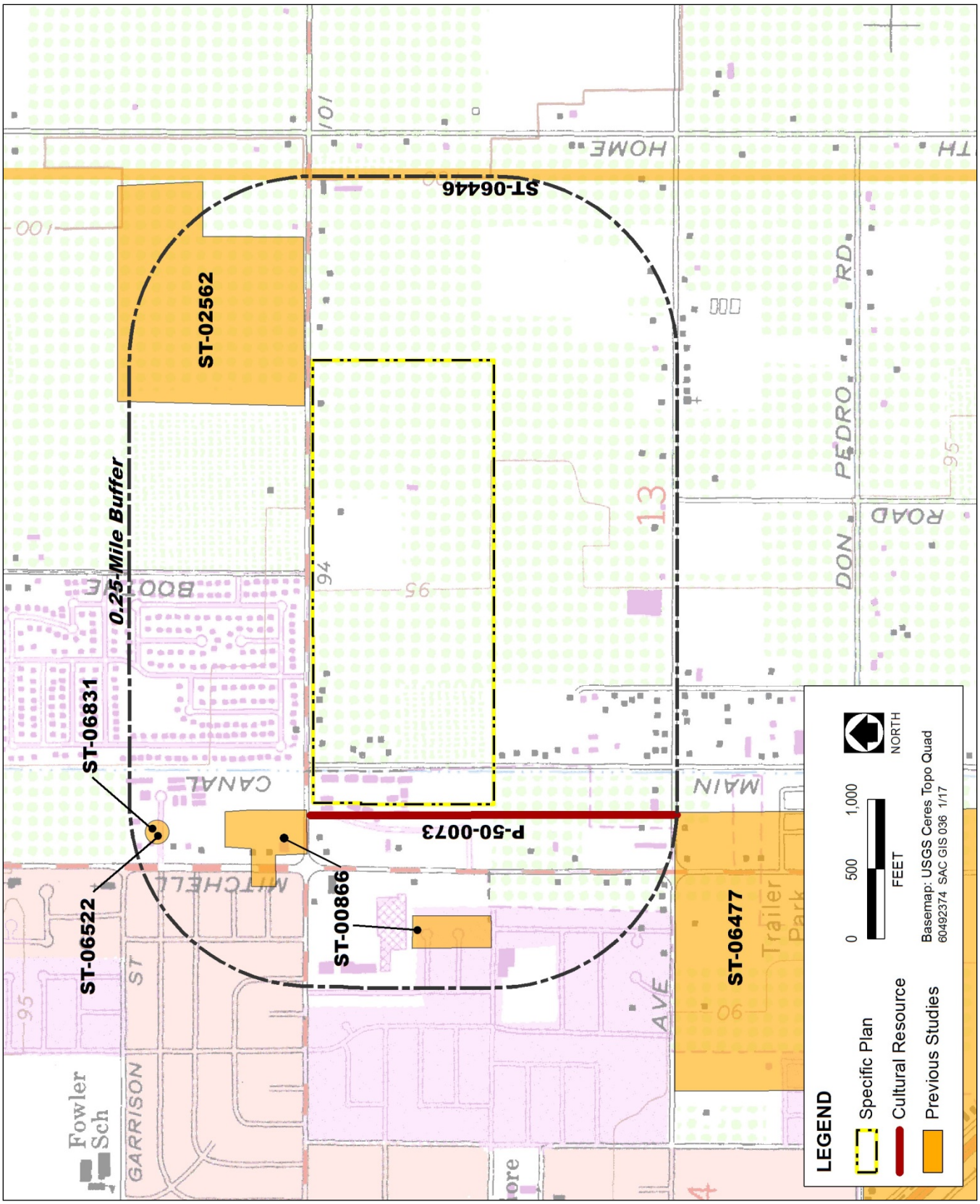
On September 2, 2016, AECOM conducted a cultural records search of the California Historical Resources Information System (CHRIS) curated by the Central California Information Center (CCIC) located at California State University, Stanislaus in Turlock, California.

A study of the project site and a 0.25-mile radius surrounding the project site was used to conduct the records search to determine whether known cultural resources have been recorded at or adjacent to the project site and assess the sensitivity of the area. The records search included reviews of maps listing previously conducted cultural resource studies within the vicinity of the project site (see Exhibit 3.5-1). Other resources reviewed included, but were not necessarily limited to, the California Inventory of Historic Resources (1976), California Historical Landmarks (1996), California Points of Historical Interest (1992 and updates), the Archaeological Determinations of Eligibility, the California Office of Historic Preservation (OHP) Historic Property Directory, historic General Land Office (GLO) maps and USGS maps, the Caltrans Bridge Survey, the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), the City of Ceres General Plan Background Report (1997) table of "Sites of Historic Interest," and the City of Ceres 2035 General Plan Background Report Update (2016).

The records search indicated that no previous investigations have been conducted in the project site, and six previous investigations have been conducted within 0.25 mile of the project site. The report numbers are listed below, in Table 3.5-1.

No prehistoric resources or were identified within the Specific Plan Area.

In addition to a records search review, background and resource-specific archival research was conducted at the California State Library, Sacramento; the Stanislaus County Clerk-Recorder, Modesto; the Stanislaus County Library Main Branch Special Collections, Modesto; and online journals, newspapers, and books were also consulted. Additionally, historic period maps were reviewed, including USGS topographic maps (1939, 1959, 1969, 1976, 1987) and historic aerial imagery (Historicaerials.com 1967, 1998, 2002, 2005, 2009, 2012). AECOM coordinated with City of Ceres staff regarding previously identified sites of historic interest in the city of Ceres. None of the previously identified historic sites are located in or near the Specific Plan Area.



Source: CCIC

Exhibit 3.5-1 Previously Completed Studies

Table 3.5-1. Previous Investigations within 0.25 Miles of Specific Plan Area

CCIC Report Number	Report Title	Author	Date
0866	*Letter Report: Records Search and Archaeological Reconnaissance for Three Proposed Post Office Locations in Ceres, California.*	Dietz, S. A.	1986
2562	*Cultural Resources Investigations of the Proposed New Ceres Joint Union High School Site, 41.7 Acres in Stanislaus County, California.*	Napton, L. Kyle	1995
6446	*Cultural Resources Assessment for the Turlock Irrigation Districts Regional Water Supply Project County of Stanislaus, California.*	Peak, M. A.	2006
6477	*State Route 99/Mitchell Road/Service Road Interchange Reconstruction, Historic Property Survey Report (Includes Historical Resources Evaluation Report and Archaeological Survey Report), Ceres, CA, 10-STA-99 KP15.6-17.5 (PM 9.7-10.9).*	Caltrans and Jones & Stokes	2006
6477a	*Historical Resources Evaluation Report: State Route 99/Mitchell Road/Service Road Interchange Reconstruction.*	Jones & Stokes	2006
6477b	*Archaeological Survey Report for the State Route 99/Mitchell Road/Service Road Interchange Reconstruction.*	Jones & Stokes	2006
6522	*New Tower ("NT") Submission Packet FCC Form 620-T-Mobile Security Public Storage SC 33020A FCC061211C, 3032 Dale Court Ceres.*	Hooks, C.	2006
6831	*Cultural Resources Records Search Results and Site Visit for T-Mobile USA Candidate SC33020 (Security Public Storage), 3032 Dale Court, Ceres, Stanislaus County, CA.*	Bonner, W. H	2008

Source: CCIC & AECOM 2016

3.5.3 CONSULTATION

NATIVE AMERICAN CONSULTATION

AECOM, on behalf of the City of Ceres, contacted the Native American Heritage Commission on June 1, 2016 to request a Sacred Land Files search of the Specific Plan Area. In their response letter dated June 2, 2016, the Native American Heritage Commission stated that their search of the Specific Plan Area did not indicate the presence of any known tribal cultural resources. The City of Ceres provided a contact list obtained from the Native American Heritage Commission on February 25, 2016 listing three Native American contacts who may have knowledge of any tribal cultural resources within or adjacent to the project site. On June 1, 2016, AECOM sent letters describing the proposed Specific Plan to the points of contact of following organizations:

- Tule River Indian Tribe – Neil Peyron, Chairperson
- Northern Valley Yokuts Tribe – Katherine Erolinda Perez, Chairperson
- Southern Sierra Miwuk Nation – Lois Martin, Chairperson

When no response was received within the 30-day period, a second outreach letter dated September 7, 2016 was sent to each contact via certified mail. No response was received after the second outreach attempt.

3.5.4 CULTURAL RESOURCE FIELD INVESTIGATIONS

AECOM cultural resources staff completed a field investigation of the Specific Plan Area on September 14, 2016.

ARCHAEOLOGICAL RESULTS

AECOM conducted an intensive cultural reconnaissance survey of the agricultural fields and orchards within the Specific Plan Area. The pedestrian survey was carried out using 20-meter interval transects. Overall, ground visibility was approximately 20 percent in tilled areas covered with alfalfa grasses, and approximately 80 percent in the almond orchard. The surveyed area is heavily disturbed from modern agricultural activities. Visible soils consisted of medium to dark brown loam with alluvial sediments and patches of light brown sand. Private residential properties were viewed from the road. Other than modern debris, no archaeological resources were observed during the survey.

ARCHITECTURAL RESULTS AND ANALYSIS

An AECOM architectural historian conducted field survey of nine parcels within the Specific Plan Area with built environment resources 45 years or older on September 14, 2016 (Table 3.5-2).

Table 3.5-2. Built Environment Resources within the Specific Plan Area

Assessor Parcel Number (APN)	Address	Property Type	City of Ceres Historic Landmark Eligible	California Register Eligible	Historical Resource for CEQA	Built Date
069-017-001	3206 East Whitmore Avenue, Ceres	Rural residential	No	No	No	1950
069-017-002	3230 East Whitmore Avenue, Ceres	Rural residential	No	No	No	1947
069-017-003	3318 East Whitmore Avenue, Ceres	Rural residential	No	No	No	1942
069-017-004	3336 East Whitmore Avenue, Ceres	Rural residential	No	No	No	1915
069-017-006	2700 Moore Road, Ceres	Rural residential	No	No	No	1946
069-017-008	n/a	Vacant agricultural property with secondary irrigation structures	No	No	No	Post-1967
069-017-011	3548 East Whitmore Avenue, Ceres	Rural residential	No	No	No	1967
069-017-012	n/a	Vacant agricultural property with secondary irrigation structures	No	No	No	Post-1967
069-017-013	n/a	Vacant agricultural property with secondary irrigation structures	No	No	No	Post-1967

Summary of Findings

The field visit of the Specific Plan Area did not show evidence of any extant fig trees that could potentially be associated with the original subdivision and development of the site as the Smyrna Park fig colony circa 1903. Nor do any of the buildings and structures in the Whitmore Ranch Specific Plan Area have any direct associations

with the early development of this area as part of the Smyrna Park fig colony. Research did not reveal that any of the buildings and structures in the Specific Plan Area have important associations with significant historic events or trends, are not associated with the lives of persons significant to history, and are not significant types, periods, or methods, of construction. In rare instances, buildings and structures themselves can serve as sources of important information about historic construction materials or technologies. However, these types of properties have otherwise been documented in a wide body of literature and construction documents and do not appear to be a principal source of important information in this regard. These properties have been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and are not historical resources for the purposes of CEQA. Photographs and brief summaries of the six rural residential properties and secondary irrigation structures in the Specific Plan Area are provided in Appendix C.

3.5.5 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to cultural resources apply to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code Section 5024.1[a]). The criteria for California Register eligibility are based on National Register criteria (Public Resources Code Section 5024.1[b]; California Code of Regulations [CCR], Title 14, Section 4850 et seq.). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-era property must be significant at the local, state, and/or federal level under one or more of the following four criteria. The resource:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. 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

4. Has yielded, or may be likely to yield, information important in prehistory or history.

An eligible resource for the California Register must meet one of the criteria of significance described above and retain enough of its historical character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (properties identified as eligible for listing in the National Register, the California Register, and/or a local register);
- Individual historical resources;
- Historical resources contributing to historic districts; and
- Historical resources designated or listed as local landmarks or designated under any local ordinance, such as a historic preservation overlay zone.

California Environmental Quality Act

California Environmental Quality Act (CEQA) includes procedures for identifying, analyzing, and disclosing potential substantial adverse changes to cultural resources. Under CEQA, a historical resource (including built environment resources and historic and prehistoric archeological resources) is considered significant if it meets the criteria for listing in the National Register of Historic Places or California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1 of the Public Resources Code, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 of the Public Resources Code, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 of the Public Resources Code shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

In addition to assessing impacts to historical resources, impacts to unique archaeological resources are also considered under CEQA, as described in Public Resources Code Section 15064.5, as well as under Public Resources Code Section 21083.2. If an archaeological site does not meet the criteria for inclusion on the California Register of Historical Resources or National Register of Historic Places, but does meet the definition of a unique archaeological resource, as outlined in Public Resources Code 21083.2, it is entitled to special protection or attention under CEQA. A unique archaeological resource 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 one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information;
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above listed criteria. According to CEQA Guidelines Section 15064.5(c)(4), if a resource is not a historical resource or a unique archaeological resource, potential effects on the resource would not be considered significant.

The CEQA Guidelines also provides standards for determining what constitutes a "substantial adverse change" to archaeological or historical resources, including physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (CEQA Guidelines Section 15064.5[b][1]). The significance of a historical resource is considered to be materially impaired when a project demolishes or materially alters in an adverse manner those characteristics that convey its historical significance and that justify its inclusion on a historical resource list (CEQA Guidelines 15064.5[b][2]).

Health and Safety Code

Human remains are protected under California Health and Safety Code Sections 7050.5 and 7052. If human remains are uncovered in a location other than a dedicated cemetery, no excavation or disturbance is permitted until the county coroner has determined that:

1. the remains are not subject to any investigation as to the circumstances, manner, and cause of any death and
2. recommendations for the treatment and disposition of the human remains have been made to the person responsible.

If the coroner has reason to believe that the remains are those of a Native American, he or she must contact the Native American Heritage Commission within 24 hours.

Public Resources Code

Per Public Resources Code Section 5097.9, if the Native American Heritage Commission receives notification of a discovery of Native American human remains from a county coroner, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American (Most Likely Descendant). The Most Likely Descendant will have 48 hours to complete a site inspection and make recommendations after being granted access to the site. Public Resources Code 5097.9 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains.

The landowner, upon any discovery of Native American remains, must ensure that the immediate vicinity is not damaged or disturbed by further development activity until consultation with the Most Likely Descendant has taken place, as prescribed by the Public Resources Code. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed.

Public Resources Code Section 21084.2, Assembly Bill 52

Assembly Bill 52, which was approved in September 2014 and went into effect on July 1, 2015, requires that lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. The bill, chaptered in Section 21084.2 of the Public Resources Code, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a Tribal Cultural Resource is a project that may have a significant effect on the environment.

Defined in Section 21074 (a, b, and c) of the Public Resources Code, Tribal Cultural Resources are:

(A.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 California Register of Historical Resources; or

b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(A.2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of [Public Resources Code] Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(B) A cultural landscape that meets the criteria of subdivision (a) is a Tribal Cultural Resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

(C) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a).

Mitigation measures for Tribal Cultural Resources must be developed in consultation with the affected California Native American tribe pursuant to Public Resources Code Section 21080.3.2, or according to Public Resources Code Section 21084.3. Public Resources Code Section 21084.3 identifies mitigation measures that include avoidance and preservation of Tribal Cultural Resources and treating Tribal Cultural Resources with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Ceres 2035 General Plan

A General Plan Background Report was prepared in 1997 and included Table of "Sites of Historic Interest" that included 44 structures that "are historically significant on a local scale." The list includes early 1900s homes, churches, meeting halls, and other buildings and sites. Not included on the list is the Daniel Whitmore House, still extant at 2928 Fifth Street approximately one-mile east of the Specific Plan Area, which is listed in the National Register of Historic Places. None of the 44 locally significant sites nor the Daniel Whitmore House, which are considered historical resources for the purposes of CEQA, are located near or within the Specific Plan Area (City of Ceres General Plan Background Report 1997; City of Ceres General Plan 1997, City of Ceres 2035 General Plan Background Report Update 2016).

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to cultural resources are applicable to the proposed Specific Plan.

Agriculture and Natural Resources

- **Policy 4.I.1 Archaeological Sites**. Refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory at California State University, Stanislaus. Do not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the CEQA Guidelines.

- **Policy 4.I.2 Archaeological Resource Management**. Establish a procedure for the management of archaeological materials found on-site during a development, including the following provisions:

    - If significant resources are known or suspected to be present on a site, require that a qualified archaeologist conduct monitoring of building demolition and/or construction grading activities.

    - If materials are found on-site during construction activities, require that work be halted until a qualified archaeologist evaluates the find and makes a recommendation for the preservation in place or recovery of the resource.

- **Policy 4.I.3 Preservation in Place**. Seek to preserve discovered archaeological resources in place in order to maintain the relationship between the artifacts and their archaeological context, where feasible. Preservation can be achieved through measures such as planning construction to avoid archaeological sites, incorporating sites within open space areas, capping the site prior to construction, and permanently protecting the site using a conservation easement.

- **Policy 4.J.1 Native American Outreach**. Conduct outreach to local Native American tribal contacts to identify potential opportunities to highlight the area's Native American history.

- **Policy 4.J.2 Coordination with Native American Tribes**. Proactively coordinate with the local Native American tribes in the review and protection of any tribal cultural resources discovered at development sites.

- **Policy 4.J.3 Tribal Cultural Resources**. Avoid the disturbance of tribal cultural resources and, where possible, seek to preserve resources in place, exploring opportunities for permanent protection of the resources where feasible. Treat tribal cultural resources with respect.

- **Policy 4.J.4 Native American Consultation**. Conduct project specific Native American consultation early in the development review process to ensure adequate data recovery and mitigation for adverse impacts to significant Native American sites. Ensure that City staff and local developers are aware of their responsibilities to facilitate Native American consultation under SB 18 and AB 52.

City of Ceres Historic Preservation Ordinance

The City of Ceres' historic preservation program began in 1988 with the passage of the City's first preservation ordinance under (Ord. 88-691). Amendments to the original preservation ordinance, under Ordinance No. 96-863 were enacted in 1996. The City Code provides for identification and protection of improvements, buildings, structures, signs, objects, features, sites and places that reflect special elements of the city's historic, architectural, aesthetic, and other heritage.

Historic Designation Criteria (Chapter 18.60.060)

For the purposes of this City Code, an improvement may be designated a historic landmark or historic site by the City Council if it meets the following criteria or other criteria established by the Planning Commission pursuant to Section 18.60.050 of this Chapter:

A. It exemplifies or reflects special elements of the City's cultural, aesthetic, or architectural history; or,

B. It is identified with persons or events significant in local, State, or National history; or,

C. It embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or

D. It is representative of the notable work of a builder, designer, or architect.

3.5.6 Environmental Impacts and Mitigation Measures

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines and Public Resources Code Section 21074, impacts to cultural resources would be considered significant if the project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Public Resources Code Section15064.5;

- Cause a substantial adverse change in the significance of an unique archeological resource pursuant to Public Resources Code Section15064.5;

- Disturb any human remains, including those interred outside formal cemeteries; or

- Cause a substantial adverse change in the significance of a Tribal Cultural Resource.

CEQA Guidelines Section 15064.5 defines "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

As noted previously, potential impacts related to paleontological resources are addressed in Section 3.6 of this EIR.

IMPACT ANALYSIS

IMPACT 3.5-1 Potential to cause a substantial adverse change in the significance of an historical resource or unique archaeological resource as defined in Public Resources Code Section 21083.2 and CEQA Guidelines Section 15064.5. *No evidence of cultural resources has been encountered. However, previously unidentified cultural resources could be adversely affected by Specific Plan implementation. Specific Plan impacts on previously unidentified cultural resources are therefore considered* ***potentially significant****.*

As of 2016, there are no known historical resources or unique archaeological resources identified with the Specific Plan Area (project site) as a result of the cultural resource investigations conducted to support this EIR. Based on the results of the investigation, the project site does not appear to be sensitive for cultural resources. However, the lack of previously recorded cultural resources and the lack of surface indications do not preclude the possibility that significant subsurface cultural resources could be inadvertently encountered and damaged during project construction. Potential construction-related project impacts on previously undocumented significant archaeological or historic-era resources in the project site are therefore considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.5-1: Implement Procedures to Avoid or Reduce Impacts on Cultural Resources.

In the event that any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted and the City of Ceres shall be notified.

If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), representatives of the City and the qualified archaeologist shall determine the appropriate course of action, with the City making the final decision. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards.

If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code Section 5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to California Public Resources Code Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (California Public Resources Code Section 5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures

that would preserve the integrity of the site or minimize impacts on it, including any or a combination of the following:

- avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization. If such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements;

- an agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or

- Other measures, short of full or partial avoidance or preservation, intended to minimize impacts on the Native American Cultural Place consistent with the proposed design and footprint of the development project for which the requested grading permit has been approved.

- After receiving such recommendations, the City shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development project. The City shall, in reaching conclusions with respect to these recommendations, consult with both the project applicant(s) and the most appropriate and interested tribal organization.

In addition, projects proposed under the Specific Plan shall comply with Ceres 2035 General Plan Policy 4.I.1, which states that the City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix G of the CEQA Guidelines. Mitigation shall include avoidance of cultural resources where possible and feasible.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-1 would require the performance of professionally accepted and legally compliant procedures for identification and treatment of inadvertently discovered cultural resources and would, therefore, reduce this impact to a **less-than-significant** level.

IMPACT 3.5-2 Potential Disturbance of and Damage to Human Remains during Project Construction. *No evidence of human remains has been encountered in the project site. However, previously undocumented human remains could be inadvertently encountered and damaged during project construction. Specific Plan impacts on previously undocumented human remains in the project site are therefore considered* ***potentially significant****.*

The cultural resources investigation of the project site included a records search, contact with the Native American Heritage Commission and Tribes traditionally and culturally affiliated with the geographic area of the project site, and a pedestrian survey by cultural resource specialists. No evidence of human remains, including those interred outside of dedicated cemeteries, was encountered in the project site during the investigation.

Based on the results of the investigation, the project site does not appear to be sensitive for human remains. However, the lack of previously recorded cultural resources and the lack of surface indications does not preclude the possibility that human remains could be inadvertently encountered and damaged during project construction. Potential construction-related project impacts on previously undocumented human remains in the project site are therefore considered **potentially significant**.

Mitigation Measures

Mitigation Measure 3.5-2a: Implement Mitigation Measure 3.5-1.

Mitigation Measure 3.5-2b: Halt Construction if Human Remains are Discovered and Implement Appropriate Actions.

If human remains are discovered at any construction sites during any phase of construction, all ground-disturbing activity within 100 feet of the remains shall be halted immediately, and the City of Ceres and the County coroner shall be notified immediately. If the remains are determined by the County Coroner to be Native American, Native American Heritage Commission shall be notified within 24 hours, and the guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains. The project applicant(s) shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the Native American Heritage Commission. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of CEQA Guidelines Section 15064.5(e) and Public Resources Code section 5097.98. The project applicant(s) shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 100 feet of where the remains were discovered.

Significance after Mitigation

Implementation of Mitigation Measures 3.5-2a and 3.5-2b would require the performance of professionally accepted and legally compliant procedures for identification and discovery of previously undocumented human remains and would, therefore, reduce this impact to a **less-than-significant** level.

IMPACT 3.5-3 Substantial Adverse Change to a Tribal Cultural Resource. *To date, no Tribal Cultural Resources have been identified within or adjacent to the project site. Therefore, no impact would occur.*

AECOM requested the Native American Heritage Commission to conduct a Sacred Lands File search to determine the presence of known tribal cultural resources within the immediate vicinity of the project site. The Sacred Lands File search failed to indicate the presence of any known tribal cultural resources in or near the project site.

Early consultation with culturally and traditionally geographically affiliated Native American Tribes identified by the Native American Heritage Commission was initiated on June 1, 2016. AECOM sent certified letters to these groups and individuals, inviting consultation and requesting information about any cultural resources in the vicinity of the Specific Plan Area, including tribal cultural resources. No tribal cultural resources were identified

within or adjacent to the Specific Plan Area. Therefore, **no impact** to known tribal cultural resources would occur.

Mitigation Measure

No mitigation measures would be required.

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3.6 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

3.6.1 ENVIRONMENTAL SETTING

GEOLOGY

The project site is located in the San Joaquin Valley, east of the gently rolling foothills of the Coast Ranges. The Sacramento Valley and the San Joaquin Valley comprise the Great Valley of California. The Great Valley geomorphic province is located between the Sierra Nevada geomorphic province on the east and the Coast Range geomorphic province on the west. The Great Valley is composed of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplift over millions of years.[1]

Most of the surface of the Great Valley is covered with Holocene (i.e., 11,700 years Before Present [B.P.] to present day) and Pleistocene (i.e., 2.6 million–11,700 years B.P.) alluvium. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Ranges to the west that were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits.

Local Geologic Setting

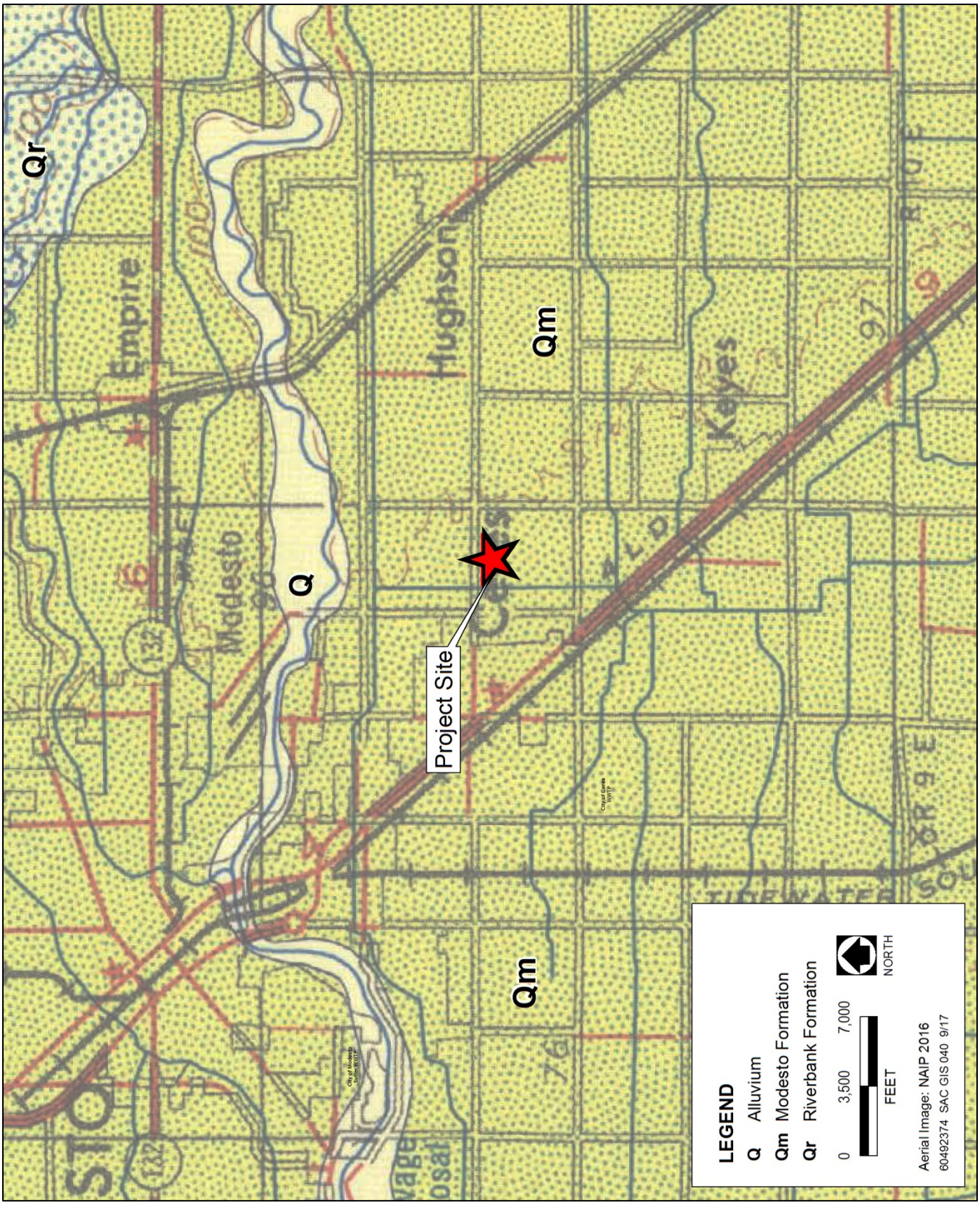
Ceres is located within the U.S. Geological Survey (USGS) Ceres 7.5-minute Quadrangle. The topography is nearly flat, with elevations ranging from approximately 80 to 100 feet above mean sea level.

A review of the *Geologic Map of the San Francisco–San Jose Quadrangle* (Wagner et al. 1991) indicates that all of the proposed project would be constructed in the Modesto Formation (Exhibit 3.6-1). The Modesto Formation forms ancient alluvial terraces and some fans and channel ridges of major rivers, and can be divided into upper and lower members. It generally consists of tan and light-gray gravelly sand, silt, and clay. Helley and Harwood (1985, citing Marchand and Allwardt 1981) suggest an age range of 12,000–26,000 years B.P. for the upper member, and 29,000–42,400 years B.P. for the lower member (i.e., Late Pleistocene in age).

REGIONAL SEISMICITY AND FAULT ZONES

Potential seismic hazards resulting from a nearby moderate to major earthquake generally can be classified as primary and secondary. The primary effect is fault ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, liquefaction, and subsidence. Each of these potential hazards is discussed below.

1 During the Jurassic and Cretaceous periods of the Mesozoic era, the Great Valley existed in the form of an ancient ocean. By the end of the Mesozoic era, the northern portion of the Great Valley began to fill with sediment as tectonic forces caused uplift of the basin. By the time of the Miocene epoch, approximately 24 million years ago, sediments deposited in the Sacramento Valley were mostly of terrestrial origin. In contrast, the San Joaquin Valley continued to be inundated with water for another 20 million years, as indicated by marine sediments dated to the late Pliocene (approximately 5.3 million years ago). By the Pleistocene epoch (approximately 2.6 million years ago), the San Joaquin Valley had emerged from the water and was enclosed by the Sierra Nevada Range to the east and the Coast Ranges to the west.



Source: Wagner et al. 1991

Exhibit 3.6-1 Geologic Formations

Surface Fault Rupture

Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (see Section 3.8.2, "Regulatory Framework,") was enacted to prohibit the location of structures designed for human occupancy across the traces of active faults, thereby reducing the loss of life and property from an earthquake. The project site is not located within, or near, an Alquist-Priolo Earthquake Fault Zone (California Geological Survey [CGS] 2017). The nearest faults zoned under the Alquist-Priolo Act are the Ortigalita Fault and Greenville Fault, both located approximately 35 miles west of the project site (CGS 2017).

Seismic Ground Shaking

Ground shaking, or motion that occurs as a result of energy released during faulting, could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the location of the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock, the building materials used, and the workmanship of the structure.

Faults in the Project Region

There are no known active earthquake faults in vicinity of the project site (CGS 2010). However, there are active faults in the broader region that can subject the city to strong seismic ground shaking (Dyett & Bhatia 2016:62). Table 3.6-1 identifies active faults in the region that may pose a potential geologic hazard to the project site. Active faults are those that show evidence of displacement during Holocene time. In addition, Table 3.6-1 identifies the approximate distance from the project site, projected maximum moment magnitude, and slip rate.

The San Joaquin Fault is located approximately 20 miles west of the project site and the Vernalis Fault and Black Butte Fault are located 20 and 25 miles northwest, respectively, of the project site (CGS 2010; Dyett & Bhatia 2016:62). Although the California Geological Survey has not classified these faults as active, Jennings (2010) indicates that several studies have shown theses faults shows evidence of movement potentially during the Late Quaternary time.

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristics of the source. Ground motions from seismic activity can be estimated by probabilistic method at specified hazard levels and by site-specific design calculations using a computer model. These calculations are used by engineers for earthquake-resistant design of buildings. The California Geological Survey Probabilistic Seismic Hazards Assessment Model indicates a minimum horizontal acceleration of 0.24 g for alluvial soil conditions (where g is the percentage of gravity) in Ceres with a 10 percent probability of earthquake occurrence in a 50-year timeframe (also known as the "Design Basis Earthquake" [DBE]) for use in earthquake-resistant design (CGS 2008). Stated another way, these calculations indicate there is a 1-in-10 probability that an earthquake will occur within 50 years that would result in a peak horizontal ground acceleration exceeding 0.24 g.

Table 3.6-1. Active Regional Faults

Fault Name	Approximate Distance from Project Site (miles)	Regional Location	Fault Type[1]	Maximum Moment Magnitude[2]	Slip Rate (mm/yr)
Ortigalita Fault Zone (Cottonwood Arm section)	35	Coast Ranges	B	7.1	1.0
Greenville Fault Zone (Clayton and Marsh Creek sections)	35	Coast Ranges	B	6.6	2.0
Calaveras Fault (Central section)	50	Coast Ranges	B	6.39	6.0
Hayward Fault (Southeast Extension)	55	Coast Ranges	A	6.78	3.0

Notes:

mm/yr = millimeters per year

[1] Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class "B" faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater.

[2] The moment magnitude scale is used by seismologists to compare the energy released by earthquakes. Unlike other magnitude scales, it does not saturate at the upper end, meaning that there is no particular value beyond which all earthquakes have about the same magnitude, which makes this scale a particularly valuable tool for assessing large earthquakes.

Sources: Cao et al. 2003; CGS 2010; Dyett & Bhatia 2016:62; Jennings and Bryant 2010; data compiled by AECOM 2017

The current (2016) California Building Standards Code specifies more stringent design guidelines where a project would be located adjacent to a Class A or B fault as designated by the California Probabilistic Seismic Hazard Maps. The A and B fault classifications are also used by the California Geological Survey and USGS in characterizing the level of certainty associated with determining seismologic parameters. As shown in Table 3.6-1, the project site is located approximately 35 miles from the nearest Class B fault.

Ground Failure and Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits, along with recent Holocene-age deposits, are more susceptible to liquefaction, while older deposits of clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

Liquefaction poses a hazard to engineered structures such as buildings, roads, bridges, pipelines, etc. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, slope instability, and lateral spreading.

Based on a review of geologic maps and U.S. Natural Resources Conservation Service (NRCS) soil data, it is unlikely that project site soils would be subject to liquefaction in the event of an earthquake because the project site is underlain by relatively stable Pleistocene-age soils, on-site soils have a low clay content, and the depth to groundwater table is approximately 36 to 38 feet below the ground surface (AECOM 2016; NRCS 2017).

Soil Stability and Subsidence

Subsidence of the land surface can be induced by both natural and human phenomena. Subsidence related to natural phenomena includes subsidence from tectonic deformations and seismically induced settlements; from consolidation, hydrocompaction, or rapid sedimentation; from oxidation or dewatering of organic-rich soils; and from subsurface cavities. Subsidence related to human activity can result from withdrawal of subsurface fluids, particularly the pumping of water for residential, commercial, and agricultural uses from subsurface water tables. Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. The potential for failure from subsidence and lateral spreading is highest in areas where the groundwater table is high, where relatively soft and recent alluvial deposits exist, and where creek banks are relatively high. Soil bearing capacity is the ability of soil to support the loads applied to the ground; where the bearing capacity is too low to support proposed structures, subsidence and settlement may occur.

Because the groundwater table is 36 to 38 feet below the surface and the Modesto Formation generally consists of stable, Pleistocene-age sediments, seismically-induced subsidence and lateral spreading are unlikely to occur.

SLOPE STABILITY

A landslide is the downhill movement of masses of earth material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. Landslides typically involve the surface soil and an upper portion of the underlying bedrock. Movement may be very rapid or so slow that a change of position can be noted only over a period of weeks or years. (This slow change is known as “creep.”) The size of a landslide can range from several square feet to several square miles.

The project site and surrounding areas are located in flat terrain, and they are not located adjacent to any areas of steep slopes.

SOILS

The entire project site is composed of the Hanford sandy loam, moderately deep over silt, 0 to 1 percent slopes (NRCS 2017). Hanford sandy loam is well-drained and found on relatively flat floodplains and alluvial fans. A review of NRCS (2017) soil survey data indicates that this soil type has a moderately rapid permeability (i.e., the ease with which pores transmit in a saturated soil transmit water based on structure, porosity, and texture), moderate wind erosion potential, and low water erosion potential.

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups rate water infiltration when soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Hydrologic soil groups are factored into calculations of erosion and stormwater runoff potential when drainage plans are prepared. Hanford sandy loam is classified by the NRCS as Group C—soils that have a slow infiltration rate when thoroughly wet. Group C soils have a layer that impedes the downward movement of water or are soils with a moderately fine or fine texture. These soils have a slow rate of water transmission.

Expansive soils are composed largely of clays, which greatly increase in volume when saturated with water and shrink when dried. Because of this effect, structural foundations may rise during the rainy season and fall during

the dry season. If this expansive movement varies beneath different parts of a structure, the foundation may crack and portions of the structure may become distorted. Retaining walls and underground utilities may be damaged for the same reasons. The potential for soil to undergo shrink and swell is greatly enhanced by the presence of a fluctuating, shallow groundwater table. Changes in the volume of expansive soils can result in the consolidation of soft clays after the lowering of the water table or the placement of fill. NRCS data indicate that the Hanford sandy loam soil profile has a low shrink-swell potential. This means that the soil has a low clay content and therefore is not likely to undergo substantial volume changes with increasing or decreasing soil moisture content, and therefore is not likely to result in a hazardous condition.

MINERALS

Under the State of California's Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The Board's decision to designate an area is based on a classification report prepared by the California Geological Survey and on input from agencies and the public.

According to the *Stanislaus County General Plan*, which relies on the State Division of Mines and Geology report *Mineral Land Classification of Stanislaus County, California* (Special Report 173), minerals found in Stanislaus County include bermentite, braunite, chromite, cinnabar, garnet, gypsum, hausmannite, hydromagnesite, inesite, magnesite, psilomelane, pyrobrsite, and rhodochrosite (Stanislaus County 2010:3-16). Small deposits of gold, clay, and lead are also known to exist within the county. However, commercial extraction of these minerals is difficult or impossible (City of Ceres 2010:14-1).

The majority of sand and gravel deposits in Stanislaus County are a result of stream deposition or dredge tailings. The most significant deposits are found in old streambeds and along rivers and streams in the eastern portions of Stanislaus County. The only significant sand and gravel deposits on the west side of the county are found along Orestimba Creek east of Interstate 5 and fine-grained sand deposits adjacent to the San Joaquin River. The closest mineral resources to the project site are sand and gravel resources located along the Tuolumne River north of the community of Hughson, located to the east of Ceres (Stanislaus County 2010:3-16 through 3-17).

PALEONTOLOGICAL RESOURCES

A stratigraphic inventory (study of rock layers and layering) and paleontological resource inventory (study of fossils) were completed to develop a baseline paleontological resource inventory of the project site and surrounding area by rock unit, and to assess the potential paleontological productivity of each rock unit.

Paleontological Resources Inventory Methods

Geologic maps and available published geological and paleontological literature covering the bedrock and surficial geology of the project site were reviewed to determine the exposed and subsurface rock units, to assess the potential paleontological productivity of each rock unit, and to delineate their respective areal distribution in the project site. The number and location of previously recorded fossil sites from rock units exposed within the project site and the types of fossil remains each rock unit has produced were evaluated based on published geological and paleontological literature. The literature review was supplemented by an archival search of the University of California Museum of Paleontology (UCMP) in Berkeley, California, on February 28, 2017 (UCMP 2017).

Paleontological Resource Assessment Criteria

The potential paleontological importance of the project site can be assessed by identifying the paleontological importance of rock units that are exposed there. Because topographic maps can easily delineate the distribution of a rock unit, this method is conducive to determining the parts of the project site that are of higher and lower sensitivity for paleontological resources.

A paleontologically sensitive rock unit is one that is rated high for potential paleontological productivity and is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed in a project area refers to the abundance and densities of fossil specimens, previously recorded fossil sites, or both in exposures of the unit in and near the project area. Exposures of a specific rock unit in a particular location are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the same unit in other locations. Therefore, the paleontological sensitivity determination of a rock unit is based primarily on the types and numbers of fossils that have been previously recorded from that rock unit (i.e., the paleontological productivity).

The following tasks were completed to establish the paleontological sensitivity of each rock unit exposed in or near the project site:

- The potential paleontological productivity of each rock unit was assessed, based on the density of fossil remains previously documented within the rock unit.
- The potential of a rock unit exposed in the project area to contain a unique paleontological resource was considered.

Paleontological Resources Inventory and Assessment

Vertebrate mammalian fossils have proved helpful in determining the relative age of alluvial fan sedimentary deposits, such as those in Ceres. Mammalian inhabitants of the Pleistocene alluvial fan and floodplain included mammoths, horses, mastodons, camels, ground sloths, and pronghorns. The Pleistocene epoch, known as the "great ice age," began approximately 1.8 million years ago. The Specific Plan Area is in the Modesto Formation, which is of Late Pleistocene age (Exhibit 3.6-1). Remains of land mammals have been found in the region at various localities in alluvial deposits referable to the Modesto Formation (Jefferson 1991). The closest recorded Pleistocene-age vertebrate fossils to the project site were found in Modesto, at North Avenue (UCMP V81120) approximately nine miles northwest of the Specific Plan Area, and at Woodland Avenue (UCMP V81119) approximately eight miles northwest of the project site. These localities yielded specimens of camel and bison, respectively. In addition, UCMP locality V3959 in east Modesto, near the Tuolumne River, yielded a Rancholabrean-age horse specimen. UCMP locality V72007 (Garber Farm) approximately 3 miles north of downtown Modesto yielded three Rancholabrean-age specimens of Jefferson's ground sloth and mammoth.

Specimens from sediments referable to the Modesto Formation, including, but not limited to, the remains of camel, horse, mammoth, gopher, ground sloth, and bison, have been reported at other locations throughout the Central Valley (UCMP 2017). Results of a paleontological records search at the UCMP indicated no fossil remains in project site or surrounding area. However, the widespread occurrence of Pleistocene vertebrate fossil remains in sediments referable to the Modesto Formation throughout the San Joaquin Valley suggests there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities.

3.6.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the U.S. through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and USGS.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code Sections 2621–2630) was passed in 1972 to reduce the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Standards Code

The California Building Standards Commission coordinates, manages, adopts, and approves building codes in California. The 2016 CBC (Title 24 of the California Code of Regulations) went into effect on January 1, 2017. It provides minimum standards for building design in California. The CBC applies to building design and construction in the state and is based on the federal Uniform Building Code (UBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations. Where no other building codes apply, Chapter 29 of the CBC regulates excavation, foundations, and retaining walls.

The state earthquake protection law (California Health and Safety Code, Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC requires that any structure designed for a project site undergo a seismic-design evaluation that assigns the structure to one of six categories, A–F; Category F structures require the most earthquake-resistant design. The CBC philosophy focuses on "collapse prevention," meaning that structures are to be designed to prevent collapse during the maximum level of ground shaking that could reasonably be expected to occur at a site. CBC Chapter 16 specifies exactly how each seismic-design category is to be determined on a site-specific basis, based on site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, as well as the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates the analysis of expansive soils and the determination of depth to the groundwater table. For structures in Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For structures in Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and loss of soil strength, and lateral movement or reduction of the foundation's soil-bearing capacity.

Chapter 18 also requires that mitigation measures be considered in structural design. Mitigation measures may include stabilizing the ground, selecting appropriate foundation types and depths, selecting appropriate structural systems to accommodate anticipated displacements, or using any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak-ground-acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. The peak ground acceleration must be determined in a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix J of the CBC regulates grading activities, including drainage and erosion control and construction on expansive soils, areas subject to liquefaction, and other unstable soils.

National Pollutant Discharge Elimination System and Storm Water Pollution Prevention Plans

As discussed in detail in Section 3.9, "Hydrology and Water Quality," the State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (Central Valley RWQCB) have adopted specific National Pollutant Discharge Elimination System (NPDES) permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the state. The SWRCB's statewide storm water general permit for construction activity (Order 2009-009-DWQ as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) is applicable to all land-disturbing construction activities that would disturb one acre of land

area or more. Compliance with the NPDES permit requires submittal to the Central Valley RWQCB of notices of intent (NOI) to discharge, and implementation of stormwater pollution prevention plans (SWPPPs) that include best management practices (BMPs) to minimize water quality degradation during construction activities.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Stanislaus County Multi-Jurisdiction Hazard Mitigation Plan

The *Stanislaus County Local Hazard Mitigation Plan* was developed by a group of cooperating agencies in 2010 including various Stanislaus County departments, incorporated cities (including the City of Ceres), school and community services districts, and fire protection districts, among others. The plan includes a risk assessment of existing hazards (i.e., earthquakes, landslides, dam failure, flooding, and wildfire), a mitigation plan, and a monitoring plan (Stanislaus County Office of Emergency Services 2017). The plan includes hazard risk mitigation goals to minimize future loss of life and property damage from, and reduce the economic effects of, earthquakes and landslides. Objectives related to these goals include discouraging development in areas prone to landslides or in geologic fault areas, requiring proper design techniques, and enforcement of building codes.

City of Ceres Municipal Code Chapter 17.24 – Preliminary Soil Survey

Chapter 17.24, "Preliminary Soil Report," of the City of Ceres Municipal Code requires a soils report that evaluates the potential for expansive soils or other soil problems. If a preliminary soils report indicates the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects, the subdivider will provide for and submit the findings of a soil investigation of each lot in the subdivision. This investigation will be prepared by a registered civil engineer and will include a recommendation for corrective action to prevent structural damage to buildings proposed to be constructed on the expansive or otherwise problem soils. As a condition to the granting of building permits where expansive soils are found, the Building Official will require the corrective measures recommended by the registered civil engineer.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to geology, soils, seismicity, and paleontological resources are applicable to the proposed Specific Plan.

Agriculture and Natural Resources

- **Policy 4.I.4 Paleontological Resources**. Establish a procedure for the management of paleontological materials found on-site during a development, including the following provisions:

    - If materials are found on-site during grading, require that work be halted until a qualified professional evaluates the find to determine if it represents a significant paleontological resource.

    - If the resource is determined to be significant, the paleontologist shall supervise removal of the material and determine the most appropriate archival storage of the material.

    - Appropriate materials shall be prepared, catalogued, and archived at the applicant's expense and shall be retained within Stanislaus County if feasible.

Health and Safety

- **Policy 5.G.1 Building Standards**. Require that new structures and alterations to existing structures be designed and constructed according to current California Building Code standards to minimize risk to the safety of occupants during groundshaking.

- **Policy 5.G.5 Seismic and Geologic Hazard Assessment**. Require a geotechnical report for subdivisions and any project shown to have expansive soils or geologic instability, or potential risk for such soils or instability. Reports shall include the following:

  - A description of the site and geologic conditions;

  - Assessment of any threats from or impacts on seismic hazards such as groundshaking and ground failure, and geological hazards such as expansive soils and subsidence; and

  - Recommendations to mitigate any hazards identified in the analysis.

  Reports shall be prepared by registered soils engineers, engineering geologists, and/or structural engineers.

- **Policy 5.G.6 Expansive Soils**. Limit the siting of structures across soil materials of substantially different expansive properties. Require appropriate design specifications, including special slabs, where foundations are located in areas of expansive soils.

- **Policy 5.G.8 Construction Erosion**. Require the use of best management practices to control and mitigate soil erosion during construction activities.

Paleontological Guidelines

The Society of Vertebrate Paleontology (1995a, 1995b), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation.

3.6.3 Environmental Impacts and Mitigation Measures

Methodology

The analysis prepared for this EIR relied on published geologic literature and maps, as well as NRCS soil survey data ("Web Soil Survey"). The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the thresholds of significance presented in this section. Impacts associated with geology, soils, minerals, and paleontological resources that could result from project-related construction and operational activities were evaluated qualitatively based on site conditions; expected construction practices; and the materials, locations, and duration of proposed construction and related activities.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, Society of Vertebrate Paleontology (1995a) established three categories of sensitivity for paleontological resources: high,

low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys. In keeping with the Society of Vertebrate Paleontology significance criteria (1995a), all vertebrate fossils are generally categorized as being of potentially significant scientific value.

THRESHOLDS OF SIGNIFICANCE

Geology, Soils, and Minerals

Based on Appendix G of the CEQA Guidelines, an impact related to geology, soils, and mineral resources is considered significant if the proposed project would:

- expose people or structures to potential substantial adverse impacts, including risk of loss, injury, or death through the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map; strong seismic shaking; seismic-related ground failure; soil liquefaction; or landslides;
- locate project facilities on a geologic unit that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- locate project facilities on expansive soil, creating substantial risks to property;
- result in substantial soil erosion or the loss of topsoil;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Paleontological Resources

Based on Appendix G of the CEQA Guidelines, the proposed project would have significant impacts on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;

- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies, depending on several factors: the age and depositional environment of the rock unit that contains the fossils; their rarity; the extent to which they have already been identified and documented; and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates generally are common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils generally are considered scientifically important because they are relatively rare.

ISSUES NOT CONSIDERED FURTHER IN THIS EIR

- **Exposure of People or Structures to Potential Impacts from Landslides**—Because the project site does not contain and is not located adjacent to any areas of steep slopes, there would be no impact related to landslides. This issue is not addressed further in this EIR.
- **Soils Incapable of Supporting Septic Tanks or Alternative Wastewater Disposal Systems**—The Specific Plan does not propose the use of septic tanks or alternative wastewater disposal systems. Thus, there would be no impact, and this issue is not evaluated further in the EIR.
- **Loss of Known Mineral Resources**—The closest mineral resources to the project area are sand and gravel resources located along the Tuolumne River north of the community of Hughson, east of Ceres. Implementation of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, nor would it result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, these issues are not evaluated further in the EIR.

IMPACT ANALYSIS

IMPACT 3.6-1 Risks to People and Structures Caused by Strong Seismic Ground Shaking. *The project site is not located within, or near, an Alquist-Priolo Earthquake Fault Zone. However, there are active faults in the broader region that can subject the city to strong seismic ground shaking. Therefore, this impact is considered potentially significant.*

The project site is not located within, or near, an Alquist-Priolo Earthquake Fault Zone. However, there are active faults in the broader region that can subject the City to strong seismic ground shaking (Dyett & Bhatia 2016:62). The project site is located approximately 35 miles from both the Ortigalita Fault and Greenville Fault. In addition, the San Joaquin Fault (approximately 20 miles west of the project site), and the Vernalis Fault (approximately 20 miles northwest of the project site), and the Black Butte Fault (approximately 25 miles northwest of the project site) are potentially active faults. Therefore, development of the project site could be subject to damage from strong seismic ground shaking.

Ceres 2035 General Plan Policy 5.G.1 requires that new structures be designed and constructed according to CBC requirements to minimize risk to the safety of occupants due to groundshaking. A site-specific geotechnical report that meets CBC standards has not been prepared; therefore, this impact is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.6-1: Prepare a Geotechnical Report per California Building Code (CBC) Requirements and Implement Appropriate Recommendations and Monitor Earthwork During Ground-Disturbing Activities.

Before building permits are issued and construction activities begin, a California Registered Civil Engineer shall be retained to prepare a final geotechnical subsurface investigation report, which shall be submitted to the City's Engineering Division for review and approval. The final geotechnical engineering report shall address and make recommendations on the following, as applicable:

- Site preparation;
- Soil bearing capacity;
- Appropriate sources and types of fill;
- Potential need for soil amendments;
- Road, pavement, and parking areas;
- Structural foundations, including retaining-wall design;
- Grading practices;
- Soil corrosion of concrete and steel;
- Erosion/winterization;
- Seismic ground shaking; and
- Unstable soils.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time of application for building and grading permits. Special recommendations contained in the geotechnical engineering report shall be noted on the grading and improvement plans and implemented, as appropriate, before construction begins. Design and construction of all new project development shall be in accordance with the CBC.

All earthwork shall be monitored by a qualified civil or geotechnical engineer to ensure compliance with project plans and specifications. The geotechnical or civil engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on the construction areas.

Significance after Mitigation

Implementation of Mitigation Measure 3.6-1 would reduce the potentially significant impact of possible damage to people and structures from strong seismic ground shaking to a **less-than-significant** level by requiring the project applicant retain a geotechnical engineer and that the design recommendations of a geotechnical engineer to reduce damage from seismic events be incorporated into buildings, structures, and infrastructure as required by the CBC, and that a geotechnical or soils engineer provide on-site monitoring to ensure that earthwork is being performed as specified in the plans.

IMPACT 3.6-2 Risks to People and Structures Caused by Seismically-Induced Liquefaction and Lateral Spreading. *The proposed project site is underlain by relatively stable sediments with a low clay content and are located in an area with a* moderately *deep groundwater table. Therefore, the potential for seismically-induced liquefaction and lateral spreading is low, and this impact is considered* ***less than significant.***

A combination of factors contributes to the potential for seismically induced liquefaction and lateral spreading, such as the intensity of ground shaking, soil type and density, depth to groundwater, and proximity to watercourses. Based on a review of geologic maps and NRCS soil data, it is unlikely that project site soils would be subject to liquefaction in the event of an earthquake because the project site is underlain by relatively stable Pleistocene-age soils, on-site soils have a low clay content, and the depth to groundwater table is approximately 36 to 38 feet below the ground surface. Thus, the potential for liquefaction and lateral spreading is considered low. Therefore, this impact is considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.6-3 Construction-Related Soil Erosion. *Construction activities during project implementation would involve extensive grading and movement of earth, which could expose soils to erosion and result in the loss of topsoil. Therefore, this impact would be* ***potentially significant.***

Implementation of the proposed project would involve grading and construction activities for infrastructure and building and road foundations over approximately 62 acres of land. Construction activities, including vegetation removal, grading, staging, trenching, and excavation, would result in the temporary and short-term disturbance of soil and would expose disturbed areas to storm events. The entire project site is composed of the Hanford sandy loam. Construction activities would occur in Hanford sandy loam, which has moderate wind erosion potential and low water erosion potential. However, rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm is large enough to generate runoff, localized erosion could occur. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss due to wind erosion.

Construction activities would occur in a hydrologic Group C soil that has a slow infiltration rate when not protected by vegetation, are thoroughly wet, receive precipitation from long-duration storms. Hydrologic Group C soils have a slow rate of water transmission. Therefore, the temporary and short-term direct impact associated with construction-related erosion is considered **potentially significant**. Indirect impacts from soil erosion, such as sediment transport into waterways, are evaluated in Section 3.9, “Hydrology and Water Quality.”

Mitigation Measures

Mitigation Measure 3.6-3a: Prepare and Implement a Grading and Erosion Control Plan.

Before grading permits are issued or earthmoving activities are conducted, a California Registered Civil Engineer shall be retained to prepare a grading and erosion control plan. The plan shall be submitted to the City Engineering Division for review and approval. The plan shall be consistent with the State’s NPDES permit and shall include the site-specific grading.

The plan referenced above shall include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.

Mitigation Measure 3.6-3b: Implement Mitigation Measure 3.9-1c (Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices).

Significance after Mitigation

Implementation of Mitigation Measures 3.6-3a and 3.6-3b would reduce the potentially significant temporary and short-term construction-related erosion impact to a **less-than-significant** level because grading and erosion control plans with specific erosion and sediment control measures would be prepared and implemented before and during all construction activities.

IMPACT 3.6-4 Potential Damage to Structures and Infrastructure from Construction in Unstable or Expansive Soils. *The project site is underlain by soils that have a low potential for expansion when wet. However, soils vary from site to site and a site-specific geotechnical report that meets CBC standards has not been prepared. Therefore, this impact would be potentially significant.*

Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. Volume changes of expansive soils also can result in the consolidation of soft clays following the lowering of the water table or the placement of fill. Placing buildings or constructing infrastructure on or in unstable soils can result in structural failure. NRCS data indicate that the soil profile has a low shrink-swell potential. This means that the soil has a low clay content and therefore is not likely to undergo substantial volume changes with increasing or decreasing soil moisture content, and therefore is not likely to result in a hazardous condition.

However, soils vary from site to site. Title 15, “Buildings and Construction,” of the City of Ceres Municipal Code incorporates the CBC into its building requirements to ensure that buildings are designed and sited properly to protect against geologic and unstable soils conditions. Furthermore, Chapter 17.24, “Preliminary Soil Report,” of the City of Ceres Municipal Code requires a soils report that evaluates the potential for expansive soils or other soil problems. Because a site-specific geotechnical report that meets CBC standards has not been prepared, impacts associated with construction in unstable or expansive soils is **potentially significant**.

Mitigation Measure

Mitigation Measure 3.6-4: Implement Mitigation Measure 3.6-1 (Prepare a Geotechnical Report per California Building Code (CBC) Requirements and Implement Appropriate Recommendations and Monitor Earthwork During Ground-Disturbing Activities).

Significance after Mitigation

Implementation of Mitigation Measure 3.6-4 would reduce potential geologic hazards from construction in unstable or expansive soils to a **less-than-significant** level because a geotechnical engineering report would be prepared by that identifies areas of unstable soils (if any are present), identifies measures to ensure structures are built in accordance with the City of Ceres Municipal Code and CBC, and requires all earthwork would be monitored by a soils or geotechnical engineer.

IMPACT 3.6-5 Potential Damage to Unknown, Unique Paleontological Resources during Earthmoving Activities. *The entire project site is underlain by the Modesto Formation, which is a paleontologically sensitive rock formation. Therefore, construction activities could disturb previously unknown, unique paleontological resources on the project site. This impact is considered* ***potentially significant.***

As shown in Exhibit 3.6-1, Ceres is underlain by Pleistocene-age sediments of the Modesto Formation, which is considered a sensitive rock unit under Society of Vertebrate Paleontology guidelines (SVP 1995a). As discussed in detail above under "Paleontological Resource Inventory and Assessment," numerous vertebrate fossil specimens have been recorded from the Modesto Formation in Stockton, Lathrop, Manteca, Modesto, Tracy, and other locations throughout the San Joaquin Valley. The fact that vertebrate fossils have been recovered near the project site and other recorded vertebrate fossil localities have been recorded throughout the Central Valley, all in sediments referable to the Modesto Formation, suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities. Therefore, potential damage to unique paleontological resources during earthmoving activities is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.6-5: Conduct Construction Worker Personnel Education and Stop Work if Paleontological Resources are Encountered.

- Before the start of any earthmoving activities for the project, the project applicant shall retain the services of a qualified archaeologist or paleontologist to inform the construction crew, including the site superintendent, about the possibility of encountering subsurface fossils and notification procedures should fossils be encountered.

- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work that may affect the identified resource and notify the City of Ceres Planning and Building Department. The project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1995a). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, coordination of museum storage for any specimen recovered, and a report of findings. The recovery plan shall be submitted to the City for review. Recommendations in

the recovery plan that are determined by the City to be necessary and feasible shall be implemented before construction activities affecting the resource can resume at the site where the paleontological resources were discovered.

Significance after Mitigation

Implementation of Mitigation Measure 3.6-5 would reduce the potentially significant impact associated with potential damage to unique paleontological resources to a **less-than-significant** level because construction workers would be alerted to the possibility of encountering paleontological resources, and in the event that paleontological resources were encountered, fossil specimens would be recovered, recorded and would undergo appropriate curation.

3.7 GREENHOUSE GAS EMISSIONS

This section includes a description of the existing environmental setting; an overview of the regulatory and policy framework governing greenhouse gas (GHG) emissions impacts; a summary of the assessment methodology used to model GHG emissions; thresholds for determining impact significance; and analysis of potential impacts of the proposed Specific Plan.

3.7.1 ENVIRONMENTAL SETTING

OVERVIEW

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

GLOBAL WARMING POTENTIAL

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 298 (IPCC 2013, p.714). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2 equivalence (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation. GHG emissions are typically measured in terms of pounds or tons of CO_2e, and are often expressed in metric tons of CO_2 equivalent emissions ($MTCO_2e$).

GHGS AND SOURCES

The following are the principal GHG pollutants that contribute to climate change and their emission sources:

- Carbon Dioxide: CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions.
- Methane: CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

- Nitrous Oxide: N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

- Fluorinated gases: These gases are typically emitted in smaller quantities, but they have a high global warming potential (GWP):

    - CFCs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.

    - PFCs are emitted as by-products of industrial processes and are also used in manufacturing.

    - SF_6 is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.

    - HCFCs have been introduced as temporary replacements for CFCs and are also GHGs.

    - HFCs were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated at local levels contribute to global concentrations of GHGs, which result in changes to the climate and environment.

GHG Concentrations and Climate Change

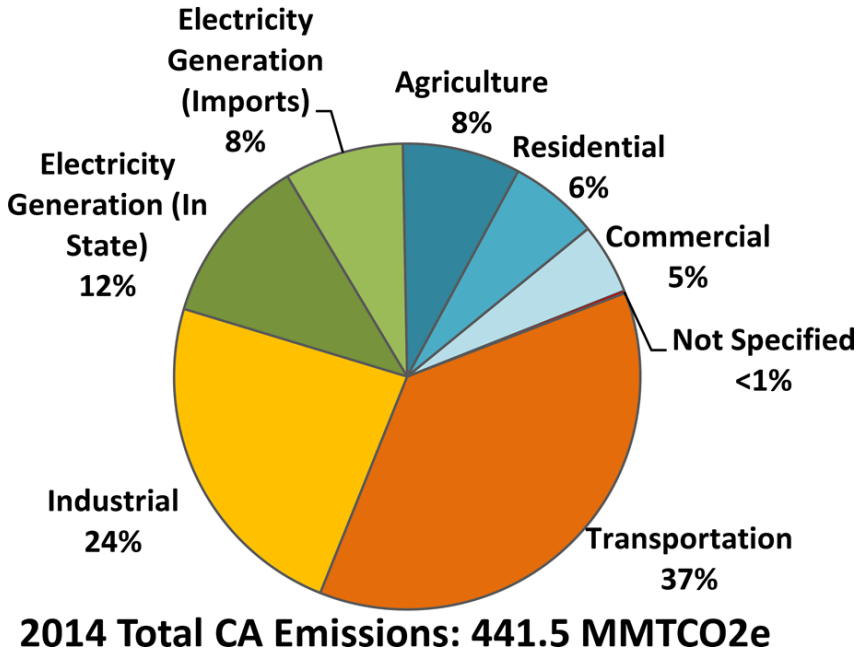
The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. These variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2013).

Global surface temperature has increased by approximately 1.53 degrees Fahrenheit (°F) over the last 140 years (IPCC 2013); however, the rate of increase in global average surface temperature has not been consistent. The last three decades have warmed at a much faster rate per decade (IPCC 2013).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2013).

STATEWIDE GHG EMISSION INVENTORY

The California Air Resources Board (ARB) prepares an annual GHG inventory for emissions produced in the state. GHGs are typically analyzed by "sector" or type of activity that results in GHG emissions. As shown in Exhibit 3.7-1, California produced 441.5 million $MTCO_2e$ in 2014. Combustion of fossil fuel in the transportation category was the single largest source of California's GHG emissions in 2014, accounting for 37 percent of total GHG emissions in the state. The transportation category was followed by the industrial category, which accounts for 24 percent of the state's total GHG emissions, and the electric power category (including in-state and out-of-state sources), which accounts for 20 percent of total GHG emissions in California (ARB 2016a).



Source: ARB 2016a

Exhibit 3.7-1. 2014 California GHG Emissions by Sector

STANISLAUS COUNTY GHG EMISSIONS INVENTORY

In 2013, a baseline GHG emissions inventory was conducted for nine incorporated cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, along with the unincorporated areas of Stanislaus County. The inventory estimated emissions using the baseline year of 2005 and identified GHG emissions from multiple sectors, including direct emissions from agriculture – livestock emissions, agriculture – other emissions, building energy – natural gas, on-road transportation, off-road transportation, and high GWP/refrigerants, as well as indirect emissions from building energy – electricity, waste generation, wastewater treatment, and water. Stationary sources emissions were excluded due to State and federal regulations of these sources and landfill emissions were excluded to avoid double-counting with waste generating emissions. In 2005, Stanislaus County produced a little more than 6 million $MTCO_2e$ (County of Stanislaus 2013). As with the state as a whole, on-road transportation is the largest section of GHG emissions, contributing to more than 27 percent of total countywide GHG emissions (County of Stanislaus 2013).

3.7.2 REGULATORY FRAMEWORK

Climate change and GHG emissions in California are governed by an evolving body of laws, regulations, and case law. Key laws and regulations are summarized below.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

While there are no federal GHG-related requirements that apply to the project, the information below is helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

The Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). The Supreme Court of the United States ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. In December 2009, the EPA Administrator signed a final action under Section 202(a) of the Clean Air Act, which identifies six GHGs that constitute a threat to public health and welfare. In light of this, EPA developed standards and regulations to limit the emissions of GHGs from new motor vehicles and for specific stationary sources, as well as a renewable fuel standard program.

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA, which applies to the federal government's ability to regulate GHG emissions:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Mandatory GHG Reporting Rule

On September 22, 2009, EPA published the Final Mandatory GHG Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 MT CO_2e or more per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions for emissions from the previous calendar year.

Council on Environmental Quality Guidance

On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that supersedes the draft GHG and climate change guidance released by CEQ in February 2010. The revised draft guidance applies to all proposed federal agency actions, including land and resource management actions. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (CEQ 2014). The guidance encourages agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic or project- or site-specific) and type (quantitative or

qualitative) of analysis required to comply with the National Environmental Policy Act (NEPA). The guidance recommends that agencies consider 25,000 $MTCO_2e$ on an annual basis as a reference point below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data (CEQ 2014).

On August 1, 2016, updated CEQ guidelines were published. In this document, no numeric threshold was established for GHG. Agencies are directed to consider the potential effects of a proposed action and alternatives on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration) (CEQ 2016). However, on March 28, 2017, President Trump signed the Presidential Executive Order on Promoting Energy Independence and Economic Growth. This Executive Order rescinds CEQ guidelines regarding GHG emissions.

Renewable Fuel Standard Program

The original 2005 Renewable Fuel Standard (RFS) Program established requirements for volumes of renewable fuel used to replace petroleum-based fuels. The four renewable fuels accepted as part of RFS include biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy Independence and Security Act (EISA) expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable fuel volume requirements to year 2022. The four renewable fuels have specific renewable fuel-blending requirements for obligated parties such as refiners and importers of gasoline or diesel fuel.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California's has launched major initiatives for reducing GHG emissions. ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CAA). The legal framework for GHG emission reductions has come about through Executive Orders, legislation, regulations, and court decisions. Some of the major components of California's climate change initiative are highlighted below.

Assembly Bill 1493

Assembly Bill (AB) 1493 requires ARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 to 2025.

Executive Order S-3-05

Executive Order S-3-05, signed in June 2005, proclaimed that California is vulnerable to the impacts of climate change. Executive Order S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. ARB approved the first update to the Climate Change Scoping Plan: Building on the Framework in June 2014 (ARB 2014). The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020. The Scoping Plan Update determined that the State is on schedule to achieve the 2020 target (i.e., 1990 levels by 2020). However, an accelerated reduction in GHG emissions is required to achieve the S-3-05 2050 reduction target of 80 percent below 1990 levels by 2050.

The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan, would reduce GHG emissions associated with existing development, as well as new development. ARB released the 2030 Target Scoping Plan Update Concept Paper to initiate a discussion regarding how to most effectively achieve a 40 percent reduction in GHG emissions by 2030 as compared to 1990 statewide GHG emissions (consistent with Executive Order B-30-15 and SB 32). This Concept Paper was followed by the release of a Proposed Scoping Plan Update, which establishes a proposed framework of action for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (ARB 2017a).

Senate Bill 32

Senate Bill 32 (SB 32) extends the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, adds two non-voting members to the ARB, creates the Joint Legislative Committee on Climate Change Policies consisting of at least three Senators and three Assembly members, requires additional annual reporting of emissions, and requires Scoping Plan updates to include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

Executive Order S-1-07

EO S-1-07, issued in 2007, proclaims that the transportation sector is the main source of GHG emissions in California. EO S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020. This regulation was re-adopted in 2015 and went into effect on

January 1, 2016. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG goals.

Senate Bill 97

Senate Bill (SB) 97 required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bills 1078 and 107, Executive Orders S-14-08 and S-21-09, and Senate Bill 350

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In January 2016, the California Public Utilities Commission (CPUC) reported that California's three largest investor-owned utilities (IOUs), Pacific Gas and Electric Company, Southern California Edison, and San Diego Gas and Electric Company, collectively provided 26.6 percent of their 2014 retail electricity sales using renewable sources and are continuing progress toward future 2020 requirements (CPUC 2016).

Executive Order S-14-08 expanded the State's Renewable Portfolio Standard to 33 percent renewable power by 2020. Executive Order S-21-09 directs ARB under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new Renewable Portfolio Standard applies to all electricity retailers in the state, including publicly owned utilities, IOUs, electricity service providers, and community choice aggregators. SB 350 (2015) increased the renewable requirement to 50 percent by 2030. These requirements reduce the carbon content of electricity generation, and would reduce GHG emissions associated with existing development, as well as new development, including the project.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate "alternative planning strategy" to meet the targets. The Stanislaus Council of Governments' (StanCOG) GHG targets are per-capita CO_2 emission reductions from passenger vehicles of 5 percent by 2020 and 10 percent by 2035 relative to 2005 levels (StanCOG 2014). StanCOG adopted the RTP/SCS in 2014. ARB is currently preparing updated GHG targets in accordance with SB 375, which is currently anticipated to become effective starting in 2018. The next update to the StanCOG RTP/SCS will be subject to the updated targets.

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB

32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's Executive Order S-03-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050.

ARB Advanced Clean Cars Program/Zero Emission Vehicle Program

AB 1493 (Chapter 200, Statutes of 2002), also known as the Pavley regulations, required ARB to adopt regulations by January 1, 2005, that would result in the achievement of the "maximum feasible" reduction in GHG emissions from vehicles used in the state primarily for noncommercial, personal transportation.

In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles. The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.); Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, are now entering the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation ensures that fuels, such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.

Executive Order B-16-12

Executive Order B-16-12 orders State entities under the direction of the Governor including ARB, the Energy Commission, and Public Utilities Commission to support the rapid commercialization of zero emission vehicles (ZEV). It directs these entities to achieve various benchmarks related to zero emission vehicles, including:

- Infrastructure to support up to one million zero emission vehicles by 2020;
- Widespread use of zero emission vehicles for public transportation and freight transport by 2020;
- Over 1.5 million zero emission vehicles on California roads by 2025;
- Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025; and
- A reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050.

Executive Order S-01-07 (Low Carbon Fuel Standard)

Executive Order S-01-07 (17 CCR 95480 et seq.) requires a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32, and the final ARB resolution (No. 09-31) adopting the LCFS was issued on April 23, 2009. ARB re-adopted LCFS in 2015.

2009 California Climate Adaptation Strategy

The State of California published the *2009 California Climate Adaptation Strategy*, which summarizes climate change impacts and provides recommendations on strategies to adapt to its effects. The strategies cover seven sectors which include public health, biodiversity and habitat, oceans and coastal resources, water, agriculture, forestry, and transportation and energy. In 2014, the California Natural Resources Agency published an update to this plan called *Safeguarding California: Reducing Climate Risk*. This document provides policy guidance on the preparation, prevention, and response to the effects of climate change.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

The ARB acknowledges that local governments have broad influence and, in some cases, exclusive jurisdiction over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is responsible for protecting public health and welfare through its administration of federal and State air quality laws and policies. In 2009, SJVAPCD adopted comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley titled the *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA*. These guidance documents were designed to assist lead agencies, project proponents, permit applicants, and interested parties in addressing and reducing GHG emissions impacts. The purpose of the guidance is to streamline the evaluation and significance determination process for projects within the SJVAPCD's jurisdiction. SJVAPCD has not adopted a threshold for GHG emissions.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to GHG emissions and climate change are applicable to the proposed Specific Plan.

Health and Safety

- **Policy 5.E.1 Green Building Code**. Continue to implement and enforce the California Green Building Code to promote energy efficient building design and construction.
- **Policy 5.E.2 LEED Certification**. Encourage new development to participate in the Leadership in Energy and Environmental Design (LEED) certification program for the design, operation, and construction of high-performance energy efficient buildings.
- **Policy 5.E.4 Energy Efficient Design**. Reduce the need for artificial temperature control and lighting by establishing standards to encourage the following:
    - Passive cooling measures in new and existing development; and
    - Design that incorporates windows that open to the outside in all habitable rooms to maximize the use of daylight and promote ventilation.

- Passive cooling measures may include the use of shade structures, shade trees and other vegetation, textured building materials and insulation, natural ventilation, and other strategies that rely on natural processes and minimize energy use.

- **Policy 5.E.5 Energy Efficient Lighting**. Establish standards to improve energy efficiency related to outdoor lighting by limiting unnecessary fixtures and utilizing low-energy fixtures.

- **Policy 5.E.6 Greenhouse Gas Monitoring**. Monitor GHG emissions in the city and systematically evaluate the progress of GHG reduction measures, adjusting policies as necessary to ensure compliance with State standards.

- **Policy 5.E.9 Zero-Emission Vehicle Travel**. Support the use of zero-emission vehicles (ZEVs) in the community through measures such as ensuring the availability of infrastructure such as electric vehicle charging stations and dedicated parking.

- **Policy 5.F.3 Cool Buildings**. Encourage the installation of green roofs and cool (reflective) roofs to reduce temperatures of roof surfaces and the surrounding air.

- **Policy 5.F.4 Water Efficiency in Public Uses**. Increase the efficiency of water usage in public places, such as irrigation in public parks.

- **Policy 5.F.5 Drought Tolerant Landscaping**. Utilize drought-tolerant landscaping in City parks and streetscapes; and promote the use of drought-tolerant plantings on private property.

- **Policy 5.F.7 Resilient Transportation**. Promote a resilient transportation system that offers connectivity for multiple transportation modes in the face of extreme weather events, such as storms and flooding, related to climate change. Transportation improvements may include elevating transportation infrastructure, installing culverts, or raising bridges where necessary.

3.7.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

Significance criteria are based on Appendix G of the CEQA Guidelines. The proposed project would have a significant impact on GHG emissions if its implementation would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. At the time of this analysis, SJVAPCD has not developed a quantitative threshold of significance for construction-related or operational GHG emissions. Air districts and public agencies in California have developed guidance, including quantified methods of assessing the degree to which projects under CEQA would have a cumulatively considerable contribution to the significant cumulative impact of global climate change. The Sacramento Metropolitan Air Quality Management District (SMAQMD)

adopted thresholds of significance of 1,100 $MTCO_2e$/yr for construction and operational emissions (SMAQMD 2015). Additionally, the Bay Area Air Quality Management District (BAAQMD) adopted a 1,100 $MTCO_2e$/yr threshold of significance for operational emissions (BAAQMD 2011). BAAQMD and SMAQMD quantitative thresholds were developed with the intent to allow assessments of projects for consistency with AB 32. However, AB 32 is focused on the year 2020. If there are future development proposals within the Specific Plan Area, and if such future development proposals are approved and constructed, such future developments may produce emissions beyond 2020. Therefore, it may be appropriate also to consider whether emissions rates would contribute to the State's emission reduction goals in Executive Order B-30-15, SB 32, and Executive Order S-3-05, as well. Executive Order B-30-15 and SB 32 call for a statewide reduction in GHG emissions to 40 percent below 1990 levels by 2030. Executive Order S-3-05 calls for a reduction to 80 percent below 1990 levels by 2050.

These four sets of guidance for the State government – AB 32, Executive Order B-30-15, SB 32, and Executive Order S-3-05 – though they do not create any obligation for local governments, represent the framework for CEQA analysis of GHG emissions impacts in California. For development projects and plans, it is important to evaluate whether a subject project "incorporates efficiency and conservation measures sufficient to contribute its portion of the overall GHG reductions necessary" for the State to achieve its own mandates (*Center for Biological Diversity, et al. v. California Department of Fish and Wildlife, the Newhall Land and Farming Company*, California Supreme Court, Case No. 5217763). If a project or plan demonstrates that the rate of GHG emissions is efficient enough to provide its share of AB 32, Executive Order B-30-15, SB 32, and Executive Order S-3-05 emissions reductions, the impact is not cumulatively considerable (*Center for Biological Diversity, et al. v. California Department of Fish and Wildlife*, page 12; Crockett 2011).

Having established the State policy and regulatory framework for assessing cumulative significance of GHG emissions, this EIR answers the two checklist questions provided by CEQA Guidelines Appendix G in a single impact assessment. Whether or not the Specific Plan would generate GHG emissions that would have a significant impact on the environment depends on whether the rate of GHG emissions from potential future development within the Specific Plan area would include a fair share of emissions reduction, consistent with the State's own reduction targets under AB 32, Executive Order B-30-15, SB 32, and Executive Order S-3-05.

The GHG emissions efficiency of a project or plan is the amount of emission per some unit of measurement. For development projects and plans, one appropriate unit of normalization is service population. Service population is the sum of residential population and employment. When dividing total GHG emissions by service population, a lead agency is able to evaluate whether the GHG emissions rate of projects and plans is consistent with the State's emission reduction targets. This approach is consistent with the intent of AB 32, which is to accommodate population and economic growth in California, but do so in a way that achieves a lower rate of GHG emissions. With a reduced rate of emissions per resident + employee, California can accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and supporting efforts to reduce emissions beyond 2020 (consistent with Executive Order B-30-15, SB 32, and Executive Order S-3-05).

An efficiency target can be developed that mirrors statewide emissions reduction legislation and executive orders. To create an efficiency target, one would simply divide the statewide emissions target for a specified target year by the forecast population and employment statewide for the same year. This would yield an emissions "budget" for each California resident and employee, and allow a community to assess whether or not its emissions rate is consistent with this emissions budget.

A GHG efficiency threshold per service population ($MTCO_2e$/SP/year) for year 2030 has been developed based on the original AB 32 year 2020 target, Executive Order B-30-15 and SB 32 year 2030 target, and the Executive Order S-3-05 year 2050 target. The associated population and employment data were obtained from Department of Finance and Employee Development Department (EDD), respectively (DOF 2013, EDD 2015).[1] The statewide GHG efficiency then can be calculated by dividing the required emissions level by forecast statewide population and employment.

The statewide emissions targets, population, and employment must be tailored, however, to focus in on the emission sources that are relevant, and could in the future be influenced by City of Ceres policies and reduction strategies. In order to develop an appropriate GHG efficiency target, the non-land use-related emissions and jobs must be removed from consideration. For emissions, this means removing consideration of agriculture and forestry, aviation, industrial combined heat and power, manufacturing, mining, national security, oil and gas extraction, petroleum refining, pipelines, rail, and water-borne vehicles. For employment this means removing from consideration jobs associated with farming, fishing, forestry, mining, logging, quarrying, oil and gas, heavy industry with substantial process/stationary source emissions, and construction.[2] By removing these emissions and jobs from the calculation of statewide GHG efficiency, the efficiency target is tailored for land use-related projects.

Table 3.7-1 presents the land use-related statewide emissions, population, and employment figures, and calculates the GHG efficiency target to evaluate GHG emissions.

Table 3.7-1. Statewide Efficiency Target – Land Use-Related Emissions and Employment

	2020	2024	2030	2050
Population	40,719,999 [1]	42,039,938 [2]	44,019,846 [1]	49,158,401 [1]
Employment	17,806,980 [3]	18,384,100 [4]	19,249,916 [5]	21,497,010 [5]
Service Population (population + employment)	57,631,826	-	62,744,102	70,847,654
Emissions ($MTCO_2e$/yr)	293,400,000 [6]	-	176,040,000 [7]	58,680,000 [8]
Emissions Efficiency Targets ($MTCO_2e$/SP/yr)	5.01	-	2.78	0.83
Emissions Efficiency Targets ($MTCO_2e$/capita/yr)	**7.21**	-	**4.00**	1.19

Source: Analysis by AECOM 2017, sources listed below.

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent

1 DOF Table P-1 State and County Population Projections, July 1, 2010–2060 (5-year increments). Available online at: <http://www.dof.ca.gov/Forecasting/Demographics/projections/>

2 Interpolated from DOF estimates for 2020 and 2025. See note 1 for population estimation source.

3 Interpolated from revised (i.e., land-use related) Employee Development Department (EDD) Employment Projections for 2024 and DOF population projection extrapolated to 2024 using 2020 and 2025 projections.

4 Employee Development Department (EDD) Employment Projections. Available online at: <http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>. Sorted to remove jobs from Farming, Fishing, and Forestry Occupations sector, Production Occupations sector, and Extraction Workers subsector of Construction and Extraction Occupations sector.

5 EDD provides 2- and 10-year employment estimates that currently extend to 2024, so the ratio of employment to population estimated in 2024 was applied to the DOF population estimates for 2030 and 2050 to estimate employment in those years.

6 California 1990 GHG Emissions Level and 2020 Limit, ARB: <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>

7 40% below 1990 levels (i.e., 2020 target levels) per SB 32.

8 80% below 1990 levels (i.e., 2020 target levels) per EO-S-3-05.

1 DOF projections are available for five-year increments between 2010 and 2060, while EDD employment projections are available for 2012 and 2022.

2 Removing construction-related employment could be viewed as a conservative aspect to the methodology outlined in this section since construction emissions are amortized and included as a part of the overall emissions estimate. However, construction-related employment tends to be transient, can be highly variable, and may not be appropriate to include fully within the denominator of the ratio of emissions over service population.

ANALYSIS METHODOLOGY

The construction and operational emissions from potential development of the Specific Plan Area were modeled using the same methods and assumptions as those described in Section 3.3 of this EIR, "Air Quality." The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to calculate GHG emissions in addition to criteria air pollutant and precursor emissions. Refer to Appendix B for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs.

For construction, GHG emissions were estimated for off-road construction equipment, material delivery trucks, haul trucks, and construction worker vehicles. In order to provide a more comprehensive assessment of cumulative GHG emissions related effects, the proposed Specific Plan's construction-related emissions were amortized over an assumed 30-year lifetime of the project and added to the operational emissions. The SJVAPCD has not adopted any thresholds for evaluating GHG emissions from construction activities. However, other districts, including the South Coast Air Quality Management District and the San Luis Obispo County Air Pollution Control District, have recommended that GHG emissions from construction and short-term sources be amortized over the lifetime of the project for comparison with significance thresholds (SCAQMD 2008; SLOAPCD 2012). For the analysis in this EIR, the construction GHG emissions are amortized over an assumed 30-year assumed lifetime of the project. This approach is conservative because the Specific Plan Area is likely to have a longer life. The annual operational emissions, along with the amortized construction emissions were compared with the applicable significance threshold to determine cumulative significance.

For operational activities, CalEEMod estimates GHG emissions associated with mobile, area, and energy sources, similar to air quality emissions. However, CalEEMod also estimates indirect GHG emissions associated with solid waste disposal and water consumption (*i.e.*, water-related electricity and wastewater treatment).

IMPACT ANALYSIS

IMPACT 3.7-1 Contribution to significant climate change cumulative impact. *GHG emissions attributable to future development within the Specific Plan Area during construction and operational phases are cumulatively considerable.*

As previously discussed, GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Compared to worldwide emissions of GHGs, the Specific Plan will not, by itself, contribute significantly to climate change. However, cumulative emissions from many projects and plans contribute to global GHG concentrations and the climate system. The State's goals are used to assess the cumulative contribution of the Specific Plan to this significant cumulative impact.

Implementation of the proposed Specific Plan would generate short-term construction and long-term operational GHG emissions. Construction-related GHG emissions would cease following buildout of the proposed Specific Plan. Operational emissions are considered long-term and assumed to occur for the lifetime the project. Construction emissions have been amortized over the assumed lifetime of the project (30 years) and added to the annual operational emissions.

Construction-related exhaust GHG emissions would be generated from a variety sources including, but not limited to heavy-duty construction equipment, haul trucks, material delivery trucks, and construction worker vehicles.

Similar to air pollutant emissions, daily GHG emissions would vary depending on the type of construction activities planned for each day. For example, during construction equipment-intensive phases, such and site grading, daily GHG emissions would be higher than daily emissions generated during less intensive phases, such as building construction. The intensity and pace of construction would be dependent on market and economic conditions. However, it is essential to understand the total amount of GHG emissions generated because of the longer atmospheric lifetimes of GHG pollutants.

Long-term operational GHG emissions would be generated from day-to-day activities associated with the proposed land uses. Operational GHG emissions are described as direct or indirect emissions. Direct GHG emissions are those emissions that are generated at the location of consumption or use. For example, mobile source emissions associated with vehicle trips by residents of, and visitors to the proposed land uses are direct emissions because GHG emissions are generated as a vehicle begins to move. Other direct operational GHG emission sources include natural gas combustion for space and water heating and fuel combustion associated with landscape maintenance. Conversely, indirect emissions are those emissions that occur at a different time or location from the point of consumption or use. For example, electricity-related GHG emissions are indirect because as a consumer uses electricity at their home, the fuel combustion and emissions associated with creating that electricity likely occurred off-site or at a different time. Other indirect operational GHG emission sources include water consumption (i.e., energy used to treat, convey, and distribute water) and solid waste disposal (i.e., decomposition of solid waste to generate CH_4).

Regional guidance can help to provide context for the estimates of Specific Plan GHG emissions. In August 2008, the governing board of the SJVAPCD adopted a Climate Change Action Plan (CCAP). The CCAP authorized the District's air pollution control officer to develop guidance documents to:

- Assist land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process;
- Investigate the development of a GHG banking program;
- Enhance the existing emissions inventory process to include GHG emission reporting consistent with State requirements; and

Administer voluntary GHG reduction agreements.

Table 3.7-2 presents the proposed Specific Plan's construction-related and operational GHG emissions. Operational GHG emission sources would include energy consumption (i.e., electricity and natural gas), transportation, and water and wastewater. Operational emissions were modeled for 2024, which assumes a default construction schedule for the entirety of the Specific Plan area with construction beginning in 2017. As shown in Table 3.7-2, total construction emissions are estimated to be 7,369 $MTCO_2e$. Total annual operational emissions are estimated to be 9,761 $MTCO_2e$/year. When amortized construction emissions are included, annual emissions would be 10,006 $MTCO_2e$/year.

Table 3.7-2. Unmitigated Construction-Related and Operational GHG Emissions

Emissions Source	GHG Emissions ($MTCO_2e$)
Construction GHG Emissions	
Maximum Annual Construction Emissions	637
Total Potential Development Construction Emissions	4,517
Potential Off-Site Sewer Line Construction	244
Amortized Construction Emissions*	159
Operational GHG Emissions	
Area	1,737
Energy	2,008
Mobile	6,270
Waste	228
Water	118
Total Annual Operational Emissions	**9,763**
Total Annual Proposed Specific Plan Emissions**	**10,006**
Project GHG Efficiency***	**6.74**

Notes:

* Construction emissions were amortized over 30 years, which is the assumed lifetime of the proposed Specific Plan.

** The proposed Specific Plan's total annual emissions include annual operational emissions added with construction emissions amortized over 30 years.

*** GHG efficiency-based metric is calculated as the annual GHG emissions divided by the estimated service population of the Specific Plan Area used throughout this EIR. The assumed service population is the residential population (1,485 residents). This population was not determined using CalEEMod defaults. Since the school uses will not change existing student or employee rates, they were not included as part of this analysis.

Totals may not add due to rounding.

Source: Modeled by AECOM in 2017

In December 2009, as directed by the CCAP, SJVAPCD adopted the *Final Staff Report Addressing GHG Emissions Impacts under the California Environmental Quality Act and Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*. The purpose of the guidance is to streamline the evaluation and significance determination process for projects within the SJVAPCD's jurisdiction.

The SJVAPCD developed guidance to assist lead agencies in establishing their own processes for determining significance of project related impacts on global climate change. The following process is recommended for evaluating the significance of GHG emissions for projects that are not exempt from CEQA:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program would 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 and supported by a CEQA-compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standards.

- Projects implementing Best Performance Standards and reducing project-specific GHG emissions by at least 29 percent compared to business as usual (BAU) condition would have a less-than-significant individual and cumulative impact on global climate change. BAU conditions were defined as the average of year 2002 to 2004, similar to the baseline used in the previous AB 32 Scoping Plan. (The Scoping Plan has been updated

since this guidance was published). Projects determined to have a less-than-significant individual and cumulative impact for GHG emissions would not require quantification of project specific GHG emissions.

- Projects not implementing Best Performance Standards would require quantification of project-specific GHG emissions. Projects must demonstrate at least 29 percent reduction in GHG emissions compared to BAU to have a less-than-significant individual and cumulative impact on global climate change.

- Projects requiring preparation of an Environmental Impact Report would require quantification of project-specific GHG emissions.

Projects implementing Best Performance Standards or achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less-than-significant individual and cumulative impact for GHG emissions. Projects implementing Best Performance Standards and reducing GHG emissions by 29 percent through any combination of GHG emission reduction measures, including GHG emission reductions achieved as a result of changes in building and appliance standards occurring since the 2002–2004 baseline period, would be considered to have a less-than-significant individual and cumulative impact on global climate change under this guidance. Models used to estimate GHG emissions now include some of the statewide measures that previously would have been used to evaluate this 29-percent reduction performance standard, so this particular method of comparison is out of date.

SJVAPCD's Final Staff Report for the CCAP identifies Best Performance Standards for stationary sources. This document also includes a section that describes the process for developing Best Performance Standards for development projects, such as the proposed Specific Plan. The section of the staff report references 12 strategies developed by ARB to reduce GHG emissions by improving energy efficiency. Most of these strategies are the responsibility of the State, utilities, or local governments, and cannot be unilaterally implemented by any specific development project. The staff report also discusses the development of more stringent energy efficiency standards for appliances in the future by the State. The staff report also references green building strategies that would reduce GHG emissions – since this staff report was published, the State of California adopted new energy efficiency requirements, which are required for all new projects. SJVAPCD's Final Staff report identifies a range of actions for reducing transportation-related GHG emissions, none of which apply to development projects. The staff report also describes the goals of SB 375 for reducing GHG emissions associated with passenger vehicle use.

Since the development of SJVAPCD guidance, ARB has revised the 2020 forecast BAU estimate. In 2015, ARB updated the 2020 emissions limit (consistent with AB 32) to be 431 $MMTCO_2e/yr$.[3] The difference between the statewide BAU estimate and the AB 32 emissions mandate used to be approximately 29 percent, and this difference served as the basis for the 29 percent threshold published in SJVAPCD guidance.

ARB estimates a 2020 BAU of 509 $MMTCO_2e/yr$ – an estimate that includes the benefits of the primary statewide reduction measures that have been codified. With updates to the BAU scenario and the AB 32 legislative mandate, the differences between the two are now 15.32 percent, rather than the 29 percent cited in the SJVAPCD guidance. A project that provided mitigation of more than 15.32 percent, not including the benefits of statewide measures, would be reducing potential GHG emissions at the same rate as is needed throughout the state to achieve the AB 32 emissions reduction target.

[3] https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm

Air districts and public agencies in California have also developed guidance, including quantified methods of assessing the degree to which projects under CEQA would have a cumulatively considerable contribution to the significant cumulative impact of global climate change. BAAQMD and SMAQMD have both adopted thresholds of significance for construction and operational emissions. SMAQMD adopted 1,100 $MTCO_2e$/yr for construction and operational emissions, and BAAQMD adopted 1,100 $MTCO_2e$/yr for operational emissions (SMAQMD 2015; BAAQMD 2011). The proposed Specific Plan's construction and operational emissions would exceed the SMAQMD and BAAQMD thresholds. The concept of GHG efficiency has been used to evaluate projects where the total operational emissions are divided by the service population of the project (*i.e.*, population plus jobs). BAAQMD adopted a threshold of 4.6 $MTCO_2e$ per service population for projects and 6.6 $MTCO_2e$ per service population for plan-level analysis (BAAQMD 2011). However, these efficiency targets are based on the State's own target for 2020 under AB 32, and do not factor in the more aggressive 2030 target described under SB 32.

As shown in Table 3.7-2, amortized construction emissions from the potential development are below the 1,100 $MTCO_2e$/year threshold recommended by BAAQMD and SMAQMD for construction related emissions. Total annual operational emissions are estimated to be 9,761 $MTCO_2e$/year. When amortized construction emissions are included, annual emissions would be 10,006 $MTCO_2e$/year, which exceeds the operational threshold recommended by BAAQMD and SMAQMD for operational emissions.

Total GHG emissions are divided by the assumed total Specific Plan Area population in order to compare the proposed Specific Plan emissions to required statewide GHG emissions rates needed to achieve the State's emission targets for 2030 (SB 32 and Executive B-30-15) and 2050 (Executive Order S-3-05). Using the analysis scenario developed for this EIR, total GHG emissions would be 6.74 $MTCO_2e$/capita/year, which exceeds the 2030 emissions rate for land use related emissions (4.00) per capita needed to demonstrate consistency with Executive Order B-30-15, SB 32, and Executive Order S-3-05. A reduction of 4,066 $MTCO_2e$/year or approximately 41 percent would be required to be in line with the State's reduction targets on a per-capita basis. The impacts associated with climate change are cumulatively significant. The proposed Specific Plan's impact is **cumulatively considerable**.

Mitigation Measures

Mitigation Measure 3.7-1a: Reduce Construction-Related GHG Emissions

The contractor(s) for projects proposed within the Specific Plan Area shall use electric and renewable fuel powered construction equipment and require renewable diesel fuel, where commercially available, and shall require construction vehicles to operate with the highest tier engines commercially available.

Mitigation Measure 3.7-1b: Reduce Operational GHG Emissions

The following mitigation measures shall be implemented to reduce GHG emissions to an emissions rate per service population that would be consistent with the emissions rate for land use-related emissions needed to achieve the State's emission targets for 2030 (Executive B-30-15 and SB 32) and 2050 (Executive Order S-3-05):

- Projects proposed under the Specific Plan shall be consistent with the allowable densities and land uses specified in the Specific Plan and in the EIR Project description.

- Provide safe and convenient pedestrian and bicycle connections to the Central Park Blocks, to schools within the Specific Plan Area, and to existing and planned pedestrian/bicycle facilities along Whitmore Avenue and Moore Road, which connect to destinations in the vicinity of the Specific Plan Area.

- When project applications for projects located in the Specific Plan Area are deemed complete by the City, the City will communicate with Stanislaus Regional Transit and Ceres Area Transit to determine whether the Specific Plan Area can accommodate an extension of transit and whether an additional bus stop should be provided on the south side of Whitmore Avenue. If the City determines that a bus stop should be provided, projects shall be designed, as applicable, to accommodate the provision of a bus stop, a turnout, a bus shelter, bench, route information, and other appropriate amenities identified by the City, including shade, lighting, and trash receptacles.

- Provide EV-ready parking spaces with electric vehicle charging stations for at least 3% of the parking spaces provided in the HDR-designated area.

Projects may propose alternative mitigation strategies to those listed above that are determined by the City to achieve a GHG emissions to an emissions rate per service population that would be consistent with the emissions rate for land use-related emissions needed to achieve the State's emission targets for 2030 (SB 32) and 2050 (Executive Order S-3-05). One alternative to accomplish this performance standard could be, for the life of the project, to participate in TID's B-Green Energy Program, which is a renewable energy program providing credits that are in excess of the legislatively mandated renewable portfolio standard. As an alternative, if the City has developed a greenhouse gas reduction program consistent with CEQA Guidelines Section 15183.5, projects proposed under the Specific Plan may demonstrate consistency with the City's greenhouse gas reduction program as alternative to implementing the mitigation measures listed above.

Significance after Mitigation

Mitigation Measure 3.7-1a and 3.7-1b requires feasible mitigation for projects proposed under the Specific Plan. If each of these mitigation measures is implemented, this is estimated to reduce annual emissions by approximately 4,523 $MTCO_2e$/year or 45 percent, compared to unmitigated emissions. This is estimated to provide a GHG emissions rate of approximately 3.7 $MTCO_2e$/capita/year, which is consistent with the rate needed statewide to achieve the State's goals identified under SB 32 and Executive Order S-3-05. Achieving an emissions rate consistent with State goals would allow the City to demonstrate that development within the Specific Plan Area would be consistent with the statewide framework that, in California, has been established for assessing the cumulative significance of GHG emissions impacts. However, the City cannot at this time guarantee the success of this mitigation measure since the provision and extension of transit to serve the Specific Plan Area is not fully under the control of the City and depends on funding and ridership levels that neither the City nor the project applicants can control. For this reason, the impact is considered **significant and unavoidable**.

3.8 HAZARDS AND HAZARDOUS MATERIALS

The following section addresses potential impacts related to hazardous materials, hazards associated with historic and current land use of the Specific Plan Area and surrounding uses and hazards associated with operations at Modesto City-County Airport. The potential for impacts on emergency response plans is also addressed in this section.

Service levels by fire personnel and other emergency responders are addressed in Section 3.13, "Public Services and Utilities, including Recreation and Energy" of this EIR. Potential hazards and associated impacts related to toxic air contaminant emissions are discussed in Section 3.3, "Air Quality;" potential impacts from geologic hazards are discussed in Section 3.6, "Geology, Soils, Mineral, and Paleontological Resources;" and potential public health impacts and hazards related to groundwater and flooding are discussed in Section 3.9, "Hydrology and Water Quality."

3.8.1 ENVIRONMENTAL SETTING

DEFINITIONS OF TERMS

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined by federal regulations as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> Hazardous material means 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 which 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 wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

> …because of their quantity, concentration, or 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.

SPECIFIC PLAN AREA

The Specific Plan Area is located in unincorporated Stanislaus County adjacent to the city of Ceres. Single-family residences are located north of the project site. Commercial almond orchards and open field crops (mainly alfalfa), are located south and east of the project site. Multi-family residences and commercial uses are west of the project site. Most of the undeveloped areas of the project site are used for agriculture (i.e., almond orchards, alfalfa, oats, and rye hay) with some portions fallow or not currently under production. The remainder of the Specific Plan Area consists of the La Rosa Elementary School and Cesar Chavez Junior High School.

A Phase I Environmental Site Assessment (ESA) is a document intended to describe potential hazardous materials that may be present on a property. Two Phase I ESAs were prepared for the project site:

- *Phase I Environmental Site Assessment, 3604 E Whitmore Avenue, California, Ceres Unified School District* (Rincon Consultants 2008) and
- *City of Ceres Whitmore Ranch Specific Plan Area Phase I Environmental Site Assessment* (AECOM 2016).

The Phase I ESAs included a review of local, State, and federal environmental record sources, historical sources, aerial photographs, and physical sources. The Phase I ESA prepared by Ricon Consultants was conducted for the Ceres Unified School District to evaluate potential environmental concerns related to the Cesar Chavez Junior High School site.

A site reconnaissance was conducted for the remainder of the Specific Plan Area by AECOM on September 21, 2016 to determine current conditions; to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and to interview persons knowledgeable about current and past site use. As shown on Exhibit 3.8-1, several properties were inaccessible at the time of the September 2016 site reconnaissance; therefore, observations of these properties could be conducted only from public rights-of way or adjacent properties. Specific findings of the Phase I ESAs are discussed below.

Phase I ESA for Cesar Chavez Junior High School Site

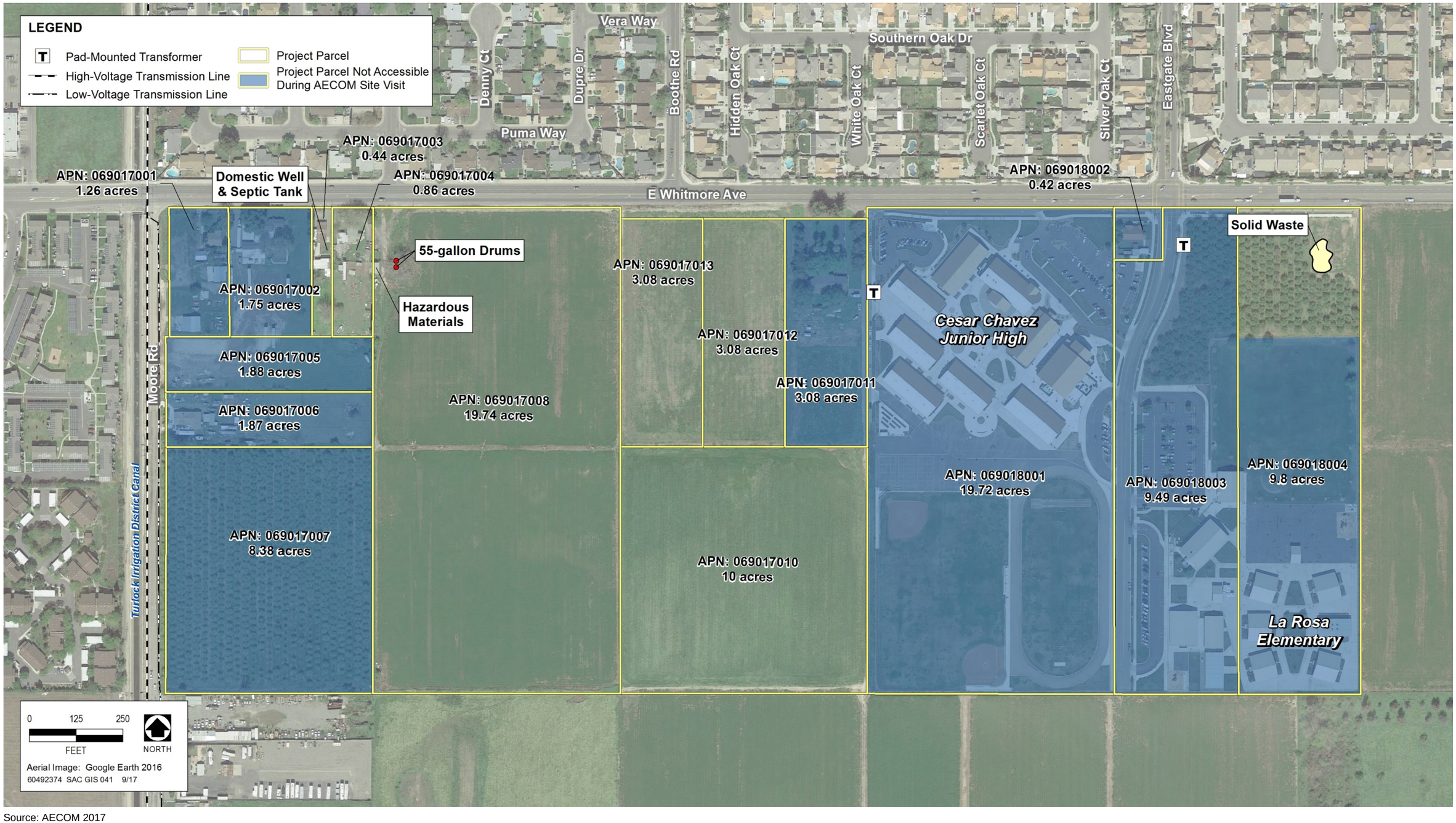
Rincon Consulting identified the following Recognized Environmental Conditions (RECs)[1] in its 2008 Phase I ESA:

- the presence of a diesel AST;
- potential soil impacts from pesticides, termiticides, and electrical transformers; and
- lead-based paint near on-site structures (Ricon 2008).

Because the site was the potential future site of a school, the California Department of Toxic Substances Control (DTSC), School Property Evaluation and Cleanup Division required additional environmental evaluation before construction could begin.

Ricon prepared a Preliminary Environmental Assessment (PEA). The purpose of the PEA was to address potential contamination from RECs identified during Rincon's Phase I ESA (Rincon 2008) and in areas requested by DTSC that would pose a risk to human health or the environment. Ricon conducted soil testing on the Cesar Chavez Junior High School site for organochloride pesticides, polychlorinated biphenyls (PCBs), chlordane, lead, and total petroleum hydrocarbons (TPH).

[1] The American Society of Testing and Materials Standard Practice E 1527-05 define "Recognized Environmental Conditions" as the "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a part release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property."



Source: AECOM 2017

Exhibit 3.8-1 Locations of Known Hazardous Materials

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Rincon compared the sample results to the DTSC's California Human Health Screening Levels (CHHSLs) and conducted a subsequent risk analysis for any exceedance. Based on the sample and risk assessment results, Rincon concluded the following:

- Except for one chlordane sample, all pesticides were less than their respective CHHSLs. Chlordane was detected above the CHHSL of 0.43 milligrams per kilograms in one surface sample, but the risk analysis demonstrated that it did not pose a threat to human health or the environment.
- Arsenic concentrations generally were within background concentrations, except for three samples. A subsequent risk assessment evaluation using arsenic concentrations indicated that arsenic at the site did not appear to be a concern to human health or the environment.
- Lead, TPH, and PCBs concentrations did not warrant further action.

DTSC approved the PEA for Cesar Chavez Junior High School and granted no further action on April 13, 2009.

Phase I ESA for Specific Plan Area

Review of historical U.S. Geological Survey topographic maps and historic aerial photos of the property showed no evidence was observed on the maps to suggest that the property was disturbed by intensive human activities such as quarrying, subsurface or surface mining, or dredging. No aboveground storage tanks, odors, soil staining, or corrosion was observed within the Specific Plan Area.

Two 55-gallon plastic drums were observed immediately south of Whitmore Avenue near the eastern boundary of parcel 069017008 and several steel drums were observed in a corrugated metal building on parcel 069017004 in the northwest portion of the Specific Plan Area (Exhibit 3.8-1). The drums were unlabeled, appeared to be structurally competent, and were stored on open dry grass. The contents of the drums are unknown. The ground surface beneath and surrounding the drums was not observed; thus, soil conditions in the immediate area of the drums could not be evaluated. Because several parcels were inaccessible during AECOM's site visit, it cannot be determined with certainty if additional hazardous materials or waste (i.e., stored in steel or plastic drums) are located on the project site.

According to the Phase I ESA, parcel 069017007 in the southwestern corner of the Specific Plan Area maintained one 300-gallon underground storage tank (UST) used to store paint thinner (Exhibit 3.8-1). Whether the UST has been removed from property is unknown. The parcel was inaccessible at the time of AECOM's site reconnaissance; therefore, no additional information regarding the UST was obtained. The reported presence of the UST represents a Recognized Environmental Condition (REC).

One domestic well and septic tank was observed on parcel 069017003 in the northern corner of the Specific Plan Area (Exhibit 3.8-1). Because of the setting of the project site and existing uses, the presence of additional domestic and/or irrigation wells and septic tanks are likely (AECOM 2016:7-2).

Asbestos and Lead-Based Paint

The existing residences and associated structures within the Specific Plan Area were constructed more than 50 years ago. These structures may contain asbestos-containing materials (ACMs) and lead-based paints.

Asbestos is designated as a hazardous substance when the fibers have potential to come in contact with air because the fibers are small enough to lodge in the lung tissue and cause health problems. The presence of ACMs in existing buildings poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air, which can occur during activities such as renovation or demolition of structures made with ACMs (e.g., insulation), are regulated in accordance with Section 112 of the Federal Clean Air Act.

Lead-based paint may have been used on the current and former structures (AECOM 2016:7-1). Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. Human exposure to lead has been determined by U.S. Environmental Protection Agency (EPA) and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) to be an adverse health risk, particularly to young children. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil.

Polychlorinated Biphenyls

Pole-mounted and pad-mounted transformers may contain PCBs, which are considered hazardous materials because of their toxicity; they have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans.

Two pad-mounted transformers were observed within the Specific Plan Area. One pad-mounted transformer was observed east of the Eastgate Boulevard right-of-way and on the parcel that contains the almond orchard (Exhibit 3.8-1). The second pad-mounted transformer was identified east of the Esmar Avenue and within the Cesar Chavez Junior High School landscaped median (Exhibit 3.8-1).Turlock Irrigation District owns both transformers and is responsible for maintenance and repairs. Neither transformer was labeled, indicating potential PCB content (AECOM 2016:3-7). No construction activities are proposed that would require removal or relocation of these transformers.

Use of Agricultural Chemicals on the Project Site

Chemicals potentially used in agricultural activities could result in residual concentrations of persistent pesticides in the soil. Persistent pesticides leave residues that remain in the environment without breaking down, such as organochlorine pesticides (e.g., dichlorodiphenyltrichloroethane [DDT], Toxaphene, and Dieldrin).

Historical research indicates that the subject property and adjacent properties have been used to grow various crops or orchards since before the 1930s. Based on its past and current agricultural use and review of previous reports prepared for portions of the project site, the likely presence of organochloride pesticides and other agrochemicals in site soil exists. Pesticides may have been stored in the current and former shop buildings and mixing of pesticides may have occurred near the irrigation wells. Termiticides may have been used near wood-frame structures (AECOM 2016:7-1).

RESULTS OF RECORDS SEARCH FOR HAZARDOUS MATERIALS

The records search conducted by AECOM did not find documentation of known contaminated municipal groundwater wells, active or inactive landfills, producing California Division of Oil and Gas petroleum wells

located on, adjacent to, or within one-half mile of the Specific Plan Area. No confirmed State or federal "Superfund" sites were identified within one mile of the property (AECOM 2016).

AECOM searched the State Water Resources Control Board's (SWRCB's) GeoTracker web site and the DTSC's EnviroStor web site to identify toxic releases, hazardous waste, or other violations that could affect the Specific Plan Area (SWRCB 2017 and DTSC 2017). The La Rosa Elementary School and Cesar Chavez Junior High School were identified in the GeoTracker and EnviroStor databases as a DTSC school investigation and clean-up sites. PEAs were prepared for both school sites. As discussed previously, DTSC approved the PEA for La Rosa Elementary School and Cesar Chavez Junior High School and granted no further action on April 13, 2009.

DTSC maintains a hazardous waste and substances site list (Cortese list) pursuant to Government Code Section 65962. As of March 2017, the Specific Plan Area is not on this list (DTSC 2017).

In addition, AECOM searched the EPA's Envirofacts database. The Envirofacts database is an assemblage of EPA databases, including the Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund) Information System database, which includes National Priorities List sites being assessed under the Superfund program, hazardous waste sites, and potential hazardous waste sites. The Specific Plan Area is not listed in the Envirofacts database (EPA 2017a).

MODESTO CITY-COUNTY AIRPORT

The Specific Plan Area is located approximately 3 miles southeast of the Modesto City-County Airport located at Harry Sham Field, 617 Airport Way in Modesto. The airport is owned by the City of Modesto and is the only commercial-service airport in the county, although it is used primarily for general aviation. The airport houses 150 aircraft and operates two asphalt landing strips, one 5,911 feet long and the other 3,459 feet long, that run from northwest to southeast. The airport averages 230 flights per day and 84,185 flights per year (Stanislaus County ALUC [Airport Land Use Commission] 2016).

The Stanislaus County ALUC is responsible for the preparation of an Airport Land Use Commission Plan (ALUCP) to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports. The ALUCP establishes a set of compatibility criteria that are used to evaluate the compatibility of land use and airport proposals within the Airport Influence Area (AIA). The countywide ALUCP was revised in 2015 to address the most recent long-range airport plans available for the Modesto City-County Airport.

The Modesto City-County ALUCP indicates that the Specific Plan Area is located within the AIA and is within Referral Area 2, the Airport Protection Zone, and the Overflight Zone (Stanislaus County ALUC 2016:3-3).[2] Referral Area 2 and the Airspace Protection Zone include locations where airspace protection and/or overflight are compatibility concerns, but not noise or safety hazards (i.e., areas where the risk of an aircraft accident poses a heightened safety concern for people and property on the ground). The Airspace Protection Zone identifies places where height and various other land use characteristics are restricted to prevent creation of physical, visual, or electronic hazards to flight within the airspace required for operation of aircraft to and from the airport. Land uses

[2] Airport Influence Area is the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may substantially affect land uses or necessitate restrictions on those uses. The airport influence area constitutes the area within which certain land use actions are subject to ALUC review to determine consistency with the ALUCP policies.

in Referral Area 2 are subject to height limitations for airspace protection based on criteria set forth in Federal Aviation Regulations (FAR) Part 77 (see Section 3.8.2 below for further discussion of FAR Part 77 criteria).

The Overflight Zone identifies areas where aircraft overflights can be intrusive and annoying to many people and do not restrict the manner in which land is developed or used (Stanislaus County ALUC 2016). Current California state statutes (Business and Professions Code Section 11010 and Government Code Sections 1103 and 1353) require that, as part of many residential real estate transactions, information be disclosed regarding whether the property is situated within an airport influence area.[3] This would require the sellers to provide buyers with a notice informing them an airport is in the vicinity.

With regard to airspace hazards, the ALUCP defines six airport safety zones. Airport safety zones are locations where certain types of proposed development and infrastructure and the use of flammable or hazardous materials may be restricted on the basis of safety compatibility with the airport. The project site is not within an airport safety zone.

WILDFIRE RISK AREAS

The California Department of Forestry and Fire Protection (CAL FIRE) has established a fire hazard severity classification system. Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upwards into trees and tall brush), ember production, and movement within the area of question.

Fire prevention areas considered to be under State jurisdiction are referred to as "State responsibility areas." In State responsibility areas, the CAL FIRE is required to delineate three hazard ranges: moderate, high, and very high. "Local responsibility areas," which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones. However, Stanislaus County also identifies unzoned areas, which are urbanized areas not susceptible to wildfires (CAL FIRE 2007).

The portion of Stanislaus County that is located within the Central Valley, which includes the city of Ceres and Specific Plan Area, is located in a Local Responsibility Area (LRA). The CAL FIRE map "Draft Fire Hazard Severity Zones in LRA" (CAL FIRE 2007) for Stanislaus County identifies the Specific Plan Area and surrounding area as unzoned (CAL FIRE 2007).

3.8.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

U.S. Environmental Protection Agency

The EPA is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal hazardous materials regulations are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR (see "Definitions of Terms" above), are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

[3] Real estate transactions exempt from airport disclosures include transfers of property between co-owners and spouses, transfers pursuant to court orders, transfers by a fiduciary in the course of the administration of a decedent's estate, and transfers of property in default or foreclosure.

- Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S. Code [USC] 6901 et seq.);
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC 9601 et seq.); and
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99–499).

These laws and associated regulations are described in detail below and include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA provides oversight and supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

Hazardous Materials Handling

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the EPA, under the authority of the RCRA. The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques to dispose of various hazardous substances. EPA has delegated much of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) created a trust fund to provide broad federal authority for releases or threatened release of hazardous substances that could endanger public health or the environment. CERCLA imposes hazardous-materials planning requirements to help protect local communities in the event of accidental release of hazardous substances.

Worker Safety Requirements

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances and addressing other potential hazards. OSHA also establishes criteria by which each state can implement its own health and safety program.

Regulation of Polychlorinated Biphenyls

The Toxic Substances Control Act of 1976 (Title 15 of the U.S. Code, Section 2605) banned the manufacture, processing, distribution, and use of PCBs in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity. They have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans (EPA 2004). The EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California. Title 40 of the CFR, Section 761.30(a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with EPA. Specified electrical equipment manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs must be marked by the manufacturer with the

statement “No PCBs” (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978, and containing PCBs must be marked as such.

Asbestos

The federal Clean Air Act (CAA) was enacted in 1970. The most recent major amendments by Congress were made in 1990. The CAA required EPA to establish primary and secondary national ambient air quality standards. The CAA also required each state to prepare an air quality control plan, referred to as a State Implementation Plan. Section 112 of the CAA defines “hazardous air pollutants” and sets threshold limits. Asbestos-containing substances are regulated by EPA under the CAA. Additional information about the CAA is contained in Section 3.3, “Air Quality.”

Lead-Based Paint

The Residential Lead-Based Paint Hazard Reduction Act of 1992 amended the Toxic Substances Control Act to include Title IV, Lead Exposure Reduction. EPA regulates renovation activities that could create lead-based paint hazards in target housing and child-occupied facilities and has established standards for lead-based paint hazards and lead dust cleanup levels in most pre-1978 housing and child-occupied facilities.

Airport and Airspace Safety

Part 77 of the FAR, “Objects Affecting Navigable Airspace,” has been adopted as a means of monitoring and protecting the airspace required for safe operation of aircraft and airports. Part 77 establishes:

- the requirements to provide notice to the Federal Aviation Administration (FAA) of certain proposed construction, or the alteration of existing structures;
- the standards used to determine obstructions to air navigation, and navigational and communication facilities;
- the process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities, or equipment; and
- the process to petition FAA for discretionary review of determinations, revisions, and extensions of determinations.

Objects that exceed certain specified height limits constitute airspace obstructions. FAR Section 77.13 requires that FAA be notified of proposed construction or alteration of certain objects within a specified vicinity of an airport, among them the following:

- any construction or alteration of more than 200 feet in height above the ground level at its site; and
- any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public-use airport, public-use airport under construction, or military airport with at least one runway more than 3,200 feet in actual length, excluding heliports.

However, a notice need not be filed with FAA for construction of an object that would be shielded by existing permanent, substantial structures or by natural terrain or topographic features of equal or greater height, and that

would be located in the congested area of a city, town, or settlement where the shielded structure would not adversely affect safety in air navigation.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

State regulations that govern hazardous materials are equal to, or more stringent than federal regulations. California has been granted primary oversight responsibility by EPA to administer and enforce hazardous waste management programs. DTSC, SWRCB, and the Integrated Waste Management Act also regulate the generation of hazardous materials. State regulations have detailed planning and management requirements to ensure that hazardous wastes are handled, stored, transported, and disposed of properly to reduce risks to human health and the environment. Key elements of State laws pertaining to hazardous wastes are highlighted below, with references to California Code sections for those interested in more detail.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires the preparation of hazardous materials business plans and disclosure of hazardous materials inventories. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code Sections 25500, et seq.). The business plan program is administered by the California Emergency Management Agency (CalEMA). A business plan is required if a hazardous substance would be stored more than 30 days in any of the following quantities:

- 500 gallons or more of any solid,
- 55 gallons or more of any liquid,
- 200 cubic feet or more of any compressed gas,
- Any acutely hazardous substance or radiological material that meets the federal threshold planning quantities listed in 40 Code of Federal Regulations (CFR) Park 355, Subpart A.

Hazardous Waste Control Act

The Hazardous Waste Control Act is implemented by regulations contained in Title 26 of the California Code of Regulations that describe requirements for the proper management of hazardous wastes. This legislation created the State hazardous waste management program, which is similar to, but more stringent than the federal RCRA program. The program includes hazardous waste criteria for:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

The Hazardous Waste Control Act and Title 26 regulations list more than 800 potentially hazardous materials and establish criteria for identifying, packaging, and disposal. Under these regulations, the generator of hazardous waste must complete a manifest that accompanies the material from the point of generation to transportation to the ultimate disposal location, with copies of the manifest filed with DTSC.

Hazardous Materials Transport

The California Highway Patrol (CHP), the California Department of Transportation (Caltrans), and DTSC have the responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies.

Regulations governing hazardous materials transport are included in the California Vehicle Code (Title 13 of the California Code of Regulations, the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations.

Transport of hazardous materials can only be conducted under a registration issued by DTSC. Identification numbers are issued by DTSC or EPA for tracking hazardous waste transporters and treatment, storage, and disposal facilities for hazardous materials. The identification number is used to identify the hazardous waste handler and to track waste from point of origin to final disposal. All material transport takes place under manifest and compliance with Title 22 requires that transporters take immediate action to protect human health and the environment in the event of spill, release, or mishap.

Emergency Services Act

Under the Emergency Services Act (Government Code Section 8850 et seq.), the State developed an emergency response plan to coordinate emergency services provided by federal, State, and local agencies. Quick response to incidents involving hazardous materials or hazardous waste is a key part of the plan. The Governor's Office of Emergency Services administers the plan, coordinating the responses of other agencies, including EPA, the CHP, Regional Water Quality Control Boards (RWQCBs), air quality management districts, and county disaster response offices.

Government Code Section 65962.5 (Cortese List)

The provisions of Section 65962.5 of the Government Code are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements by providing information about the locations of hazardous-materials release sites. Section 65962.5 requires the California Environmental Protection Agency to develop an updated Cortese List at least annually. DTSC is responsible for a portion of the information contained on the Cortese List. Other State and local government agencies are required to provide additional information about hazardous-material releases for the Cortese List.

Underground Storage Tank Program

The California Department of Public Health (formerly the California Department of Health Services) and the SWRCB list hazardous sites of Underground Storage Tanks (USTs) listed for remedial action because of unauthorized release of toxic substances. Leak prevention, cleanup, enforcement, and tank testing certification are the elements of the UST Program, which is administered by the SWRCB.

Unified Program

The California Environmental Protection Agency (Cal/EPA) grants to qualifying local agencies oversight and permitting responsibility for certain State programs pertaining to hazardous waste and hazardous materials. This is achieved through the Unified Program, created in 1993 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following emergency and management programs:

- hazardous materials release response plans and inventories (business plans);
- California Accidental Release Prevention Program (CalARP);
- UST Program;
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control and Countermeasure plans;
- Hazardous Waste Generator and On-site Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous material management plans and hazardous material inventory statements.

Cleanup of Contaminated Sites

The State of California has a number of different regulatory structures governing cleanup of contaminated sites. Many of these programs are regulated by DTSC, including RCRA corrective actions, State Superfund sites, brownfields programs, and voluntary cleanups. The SWRCB (through RWQCBs and some local agencies) regulates releases with the potential to affect water resources under programs, such as the Leaking Underground Storage Tanks program and the Spills, Leaks, Investigations, and Cleanups program. Regulatory authority for these programs may be delegated by the federal government (as with RCRA corrective actions directed by DTSC) or may be found in the California Health and Safety Code. These regulations vary, but in general require the reporting, investigation, and remediation of sites where releases of hazardous materials have occurred, followed by appropriate disposal of any hazardous materials. These programs govern a range of pollutants, such as solvents, petroleum fuels, heavy metals, and pesticides in surface water, groundwater, soil, sediment, and air.

Asbestos Abatement

The California Air Resources Board (ARB) Asbestos Program oversees implementation of, and compliance with the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Asbestos, and investigates all related complaints, as specified by the California Health and Safety Code Section 39658(b)(1). The ARB identifies districts that are “non-delegated,” which are areas without asbestos programs, and “delegated districts,” which are areas with asbestos programs. The Specific Plan Area is located within a “delegated” district (California Air Resources Board 2017).

Airport Land Use

The State regulates airports under the authority of the Airport Land Use Commission Law, Section 21670 et seq. of the California Public Utilities Code. The Airport Land Use Commission Law is implemented through individual airport land use commissions (ALUCs), which are required in every county with a public use airport or

with an airport served by a scheduled airline. Under the provisions of the law, each ALUC has certain responsibilities conferred upon it and specific duties to perform. Among these are preparing airport land use plans for each of the airports within its jurisdiction (California Public Utilities Code, Sections 21674[c] and 21675[a]).

Real Estate Disclosure Laws

Building and Professions Code Section 11010 and Government Code Sections 1103 and 1353 requires that the presence of a nearby airport or other hazards (flood, fire, and earthquake) be disclosed as part of residential real estate transactions for new subdivisions and existing residences. This requirement applies within the airport influence area, as defined by the airport land use commission in the county. The law provides the following specific language to be used in the disclosure:

> "This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you."

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Response to hazardous material incidents is one part of this plan. The plan is managed by the California Emergency Management Agency (Cal EMA), which coordinates the responses of other Stanislaus County Office of Emergency Services.

Regional and Local Plans, Policies, Regulations, and Ordinances

Modesto City-County Airport Land Use Compatibility Plan

The ALUCP for the Modesto City-County Airport was adopted by the Stanislaus County ALUC in 1978 and amended in 2016. The ALUCP sets forth policies to promote compatibility between the airport and future land uses in the surrounding area by establishing a set of compatibility criteria that is applicable to new development. The Stanislaus County ALUC has adopted FAR Part 77 imaginary surfaces (see "Federal Airport and Airspace Safety," above) to determine height restrictions for natural and artificial objects. Penetration of these imaginary surfaces by permanent structures would endanger pilots and passengers of aircraft operating at the airport and would pose a hazard to persons occupying those structures.

The ALUCP also outlines the State of California's noise standards. Airport land use compatibility as it pertains to noise standards is discussed in this EIR in Section 3.11, "Noise and Vibration."

The ALUCP designates a boundary for the airport planning area that is consistent with the airport's approach and clear zone plan. This plan establishes imaginary surfaces that define safe flying altitudes for aircraft and prevents obstructions to navigation (i.e., by towers, trees, and utility poles) that could pose hazards to air traffic. The airport planning area is divided into four separate categories. Two of those categories consist of land within the airport itself. The other two consist of "approach and transitional surfaces" and "other land within the planning area."

The Specific Plan Area is located within Referral Area 2. The ALUC must review the following types of land uses proposed in Referral Area 2 (Stanislaus County ALUC 2016:2-11):

- Any proposed object having a height of more than 200 feet above ground level (including buildings, poles, antennas, and other structures) that requires review by the FAA in accordance with Part 77 of the Federal Aviation Regulations.

- Any project or plan (e.g., Habitat Conservation Plan) proposing open water areas or landscaping features having the potential to cause an increase in the attraction of birds or other wildlife that can be hazardous to aircraft operations in the vicinity of the airport.

- Any project having the potential to create electrical or visual hazards to aircraft in flight, including:

    - electrical interference with radio communications or navigational signals;
    - lighting which could be mistaken for airport lighting;
    - glare in the eyes of pilots of aircraft using the airport; and
    - impaired visibility near the airport.

- Any project having the potential to create a thermal plume extending to an altitude where aircraft fly.

With regard to airspace hazards, the ALUCP defines six airport safety zones. Airport safety zones are locations where certain types of proposed development and infrastructure and the use of flammable or hazardous materials may be restricted on the basis of safety compatibility with the airport. The project site is not within an airport safety zone.

Stanislaus County Local Hazard Mitigation Plan

The *Stanislaus County Local Hazard Mitigation Plan* was developed by a group of cooperating agencies that included various Stanislaus County departments, incorporated cities (including the City of Ceres), school and community services districts, and fire protection districts. The plan includes a risk assessment of existing hazards (earthquakes, landslides, dam failure, flooding, and wildfire), a mitigation plan, and a monitoring plan (Stanislaus County Office of Emergency Services 2017). The plan includes countywide hazard mitigation goals to reduce the economic effects of and reduce the loss of life and property from wildfires. Objectives include maintaining safe evaluation routes, discouraging development in areas of high wildfire hazard, and provision of fire protection services.

San Joaquin Air Pollution Control District Asbestos Program

The Specific Plan Area is located within an area under the purview of the San Joaquin Air Pollution Control District (SJAPCD). The purpose of the SJAPCD's Asbestos Program is to protect the public from uncontrolled emissions of asbestos. SJVAPCD Rule 4002 requires compliance with the National Emission Standards for Hazardous Air Pollutants regulation, 40 CFR, Part 61, Subpart M developed by EPA.

The SJAPCD's asbestos program requires a Certified Asbestos Consultant to perform an asbestos survey prior to the demolition of a regulated facility.[4] If ACM is discovered, the ACM must be removed prior to undertaking of projects that will disturb the ACM. For any demolition (regulated or not), a completed Asbestos Notification Form must be submitted to the SJAPCD 10 working days before the activity begins. The SJAPCD will complete a Demolition Permit Release form indicating compliance with or exemption from the Federal Asbestos Standard.

Hazardous Material Storage, Handling, and Management

The Stanislaus County Department of Environmental Resources (DER) is the lead local regulatory agency (i.e., Certified Unified Program Agency [CUPA]) and is responsible for a variety of tasks related to the storage, handling, and management of hazardous materials. The Stanislaus County DER has a hazardous materials incident response team and responds to incidents involving chemical releases, as well as other hazardous materials situations.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (2018) related to hazards and hazardous materials are applicable to the proposed Specific Plan.

Land Use and Community Design

- **Policy 2.J.1 Compatibility**. Require compatibility between urban development and airport facilities to ensure the availability of local air transportation services and a quality living environment.
- **Policy 2.J.4 Building Heights**. Limit building heights for airspace protection in accordance with Federal Aviation Regulations Part 77.
- **Policy 2.J.5 Overflight Easements**. Require Avigation Easement Dedication, Recorded Deed Notice, and Real Estate Disclosure as required by the Stanislaus County Airport Land Use Compatibility Plan.

Health and Safety

- **Policy 5.I.1 Hazardous Materials Standards**. Ensure that the use and disposal of hazardous materials in the city comply with local, State, and federal safety standards. Ensure that industrial facilities are constructed and operated in accordance with current safety and environmental protection standards and best practices.
- **Policy 5.I.2 Soil Investigations**. Require preliminary (Phase 1) soil investigations in conjunction with areawide plans and/or prior to approving residential development plans or tentative maps.
- **Policy 5.I.3 School Siting.** Discourage the development of schools near known hazardous waste disposal or handling facilities. Prohibit the siting of new schools within a quarter-mile of any active hazardous sites identified on the State's Cortese List (pursuant to Government Code Section 65962.5).

[4] All commercial building, residential buildings with more than four dwelling units, other structures and non-portable equipment are considered regulated facilities. A single-family dwellings or residential buildings with four or fewer units may be exempt, depending on its past use and future use of the property.

- **Policy 5.I.5 Hazardous Materials Projects**. Review all proposed development projects that would manufacture, use, or transport hazardous materials to ensure compliance with the County's Hazardous Materials Disclosure Program.

- **Policy 5.I.13 Hazardous Household Waste**. Work with the County to provide for the education of small quantity, household, and agricultural generators regarding their responsibilities for source reduction and proper and safe hazardous waste management.

- **Policy 5.J.1 Flight Hazard Reduction**. Work with the City of Modesto and Stanislaus County to ensure that new development in the Modesto City-County Airport Influence Area does not create safety hazards such as lights from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.

- **Policy 5.J.2 Airport Land Use Compatibility Plan**. Ensure that new development within the Modesto City-County Airport Influence Area complies with the policies of the Stanislaus County Airport Land Use Compatibility Plan by coordinating the review of development proposals within the Airport Influence Area with the Stanislaus County ALUC.

3.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODOLOGY

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from implementation of the proposed project and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks. As discussed above, compliance with applicable federal, State, and local health and safety laws and regulations would generally protect the health and safety of the public.

A preliminary review of environmental risk databases was conducted, including the EPA's Envirofacts web site the SWRCB's GeoTracker web site, and DTSC's EnviroStor web site. In addition, the following reports documenting potential hazardous conditions at the project site were reviewed for this analysis:

- *Ceres 2035 General Plan* (City of Ceres 2018);

- *Ceres General Plan Update Existing Conditions Report* (Dyett & Bhatia 2016);

- *Stanislaus County Airport Land Use Compatibility Plan* (Stanislaus County ALUC 2016);

- *Phase I Environmental Site Assessment, 3604 E Whitmore Avenue, California, Ceres Unified School District* (Rincon Consultants 2008); and

- *City of Ceres Whitmore Ranch Specific Plan Area Phase I Environmental Site Assessment* (AECOM 2016).

The information obtained from these sources was reviewed and summarized to establish existing conditions and to evaluate the significance of potential environmental effects, based on the thresholds of significance presented below. In determining the level of significance, this analysis assumes that development in the Specific Plan Area would comply with relevant federal, State, regional, and local ordinances and regulations.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, an impact related to hazards and hazardous materials is considered significant if the proposed project would:

- 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 or through the routine transport, use, or disposal of hazardous materials;
- 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 create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or within 2 miles of a public airport, result in a safety hazard for people residing or working in the project area;
- for a project located in the vicinity of a private air strip, 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; or
- 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 residences are intermixed with wildlands.

ISSUES NOT CONSIDERED FURTHER IN THIS EIR

- **Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5**—The Specific Plan Area is not listed on a hazardous waste and substances site list (Cortese list) pursuant to Government Code Section 65962 (DTSC 2017). This issue is not evaluated further in this EIR.
- **Safety Hazards Associated with Private Airstrips**—The Specific Plan Area is not located in the vicinity of a private airstrip. Therefore, no impacts associated with safety hazards for people residing in the vicinity of a private airstrip would occur. This issue is not evaluated further in this EIR.
- **Risk of Loss, Injury, or Death Associated with Wildfires**—The Specific Plan Area and surrounding area is an unzoned fire hazard severity zone and there are no areas identified as moderate, high, or very high fire hazard severity zones near the Specific Plan Area. Because development of the proposed project would occur in areas rated as not susceptible to wildfires, the project would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires. Therefore, this issue is not evaluated further in the EIR.

IMPACT ANALYSIS

IMPACT 3.8-1 Routine Transport, Use, or Disposal of Hazardous Materials. *Implementation of the proposed project would involve the storage, use, and transport of hazardous materials at the project site during demolition and construction activities. Because the proposed project would be required to implement and comply with existing hazardous materials regulations, and because each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies, impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset is considered* ***less than significant****.*

Project construction would involve the storage, use, and transport of small amounts of hazardous materials (e.g., asphalt, fuel, lubricants, paint, and other substances) on roadways, such as Whitmore Avenue, Moore Road, and regional highways, such as State Route 99. Regulations governing hazardous materials transport are included in CCR Title 22, the California Vehicle Code (CCR Title 13), and transportation of hazardous materials on area roadways is regulated by CHP and Caltrans.

Construction contractors would be required to comply with Cal/EPA's Unified Program; regulated activities would be managed by Stanislaus County DER, the designated CUPA for Stanislaus County, in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous material management plans and inventories). Such compliance would reduce the potential for accidental release of hazardous materials during construction of the proposed project.

Residential development would result in use, storage, and disposal of household hazardous materials within the Specific Plan Area and central park blocks and open space areas could require the use of fertilizers and pesticides. The EPA and DTSC considers household hazardous wastes as those that can ignites, react, explode under certain circumstances, or that are corrosive or toxic (EPA 2017b, DTSC 2010). These can include, but are not limited to, household cleaners, electronic wastes, paint, oil, pool chemicals, fertilizers, and pesticides. The EPA and DTSC do not regulate wastes generated by normal household activities (EPA 2017b, DTSC 2010).

Many general household cleaning products are not used in sufficient quantities to pose a danger to residents or the environment. However, both the EPA and DTSC provide guidelines for the safe disposal of household hazardous wastes. The City provides educational material emphasizing the importance of proper household hazardous waste disposal, including disposal of motor oil, antifreeze, paint, thinners, and solvents. Stanislaus County operates a hazardous waste collection center located at County Center IV in Modesto that offers free disposal of household hazardous wastes to all county residents (Stanislaus County 2017).

Project construction contractors are required by law to implement and comply with existing hazardous material regulations. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. With incorporation of existing regulations, impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset is considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.8-2 **Potential Human Health Hazards from Exposure to Existing On-Site Hazardous Material.** *The project site contains several steel and plastic drums, potentially an UST, water wells, and septic systems. Further, lead-based paint could be present in on-site buildings proposed for demolition. Construction workers could be exposed to hazardous materials present on-site during construction activities and hazardous materials on-site could create an environmental or health hazard for later residents or occupants, if left in place. This impact would be* ***potentially significant****.*

AECOM searched the EPA's Envirofacts, the SWRCB's GeoTracker, and DTSC's Envirostor web sites to identify toxic releases, hazardous waste, or other violations that could affect the site. The Specific Plan Area is not listed in the Envirofacts database as a hazardous waste site (EPA 2017a). As discussed in Section 3.8.1, "Environmental Setting," the La Rosa Elementary School and Cesar Chavez Junior High School were identified in the GeoTracker and EnviroStor databases as a DTSC school investigation and clean-up sites. PEAs were prepared for both school sites, and the DTSC approved the PEAs for La Rosa Elementary School and Cesar Chavez Junior High School and granted no further action on September 12, 2003 and April 13, 2009, respectively.

The project site contains several steel and plastic drums, potentially an UST, water wells, and septic systems. Further, ACMs or lead-based paint could be present in on-site buildings proposed for demolition. Because several parcels were inaccessible during AECOM's site visit, it cannot be determined with certainty if additional hazardous materials or wastes are located on the project site (Exhibit 3.8-1).

According to AECOM's Phase I ESA, parcel 069017007 in the southwestern corner of the Specific Plan Area maintained one 300-gallon UST used to store paint thinner. Whether the UST has been removed from property is unknown. The parcel was inaccessible at the time of AECOM's site reconnaissance; therefore, no additional information regarding the UST was obtained. The reported presence of the UST represents a REC.

As shown on Exhibit 3.8-1, two 55-gallon plastic drums were observed immediately south of Whitmore Avenue near the eastern boundary of parcel 069017008 and several steel drums were observed in a corrugated metal building on parcel 069017004 in the northwest portion of the Specific Plan Area. The contents of the drums are unknown. The ground surface beneath and surrounding the drums was not observed; thus, soil conditions in the immediate area of the drums could not be evaluated.

Based on its past and current agricultural use and review of previous reports prepared for portions of the project site, the likely presence of organochloride pesticides and other agrochemicals in site soil exists. Pesticides may have been stored in the current and former shop buildings and mixing of pesticides may have occurred near the irrigation wells (AECOM 2016:7-1). Conversion of areas historically or currently used for agricultural production to developed land uses could potentially expose future workers and residents of the proposed project to hazardous concentrations of pesticides.

According to records maintained at the Stanislaus County Environmental Health Department, multiple septic tanks are located on the project site (AECOM 2016:7-2). One domestic well was observed on parcel 069017003 in the northern corner of the project site. Because of the setting of the project site and existing uses, the presence of additional domestic and/or irrigation wells are likely (AECOM 2016:7-2). Septic systems would need to be

abandoned following the guidance of a geotechnical engineer, and water wells would need to be properly abandoned before initiation of any construction or grading activities.

During ground preparation, demolition, and construction activities, construction workers could come in contact with, and be exposed to the hazardous materials listed above that are present in on-site buildings or soils. Further, the presence of contamination in on-site soils could create a significant environmental or health hazard to later residents, if left in place. Because construction workers could be exposed to hazardous materials present on-site during construction activities and hazardous materials on-site could create an environmental or health hazard for later residents, if left in place, this impact is **potentially significant**.

Mitigation Measure

Mitigation Measure: 3.8-2: Retain a Licensed Professional to Investigate Known or Unknown Hazards and Hazardous Materials and Implement Required Measures, as Necessary.

To reduce health hazards associated with potential exposure to hazardous substances, the project applicant and/or construction contractor(s) shall implement the following measures before the start of ground-disturbing activities within each phase of project development:

- Prepare a Phase I ESA covering all areas prior to development. If recommended by the Phase I(s), a Phase II ESA investigation is also required.

- If, during site preparation and construction activities, evidence of hazardous materials contamination is observed or suspected (e.g., stained or odorous soil or groundwater), construction activities shall cease immediately in the area of the find. If such contamination is observed or suspected, the contractor shall retain a qualified hazardous materials specialist to assess the site and collect and analyze soil and/or water samples, as necessary. If contaminants are identified in the samples, the contractor shall notify and consult with the appropriate federal, state, and/or local agencies. Measures to remediate contamination and protect worker health and the environment shall be implemented in accordance with federal, State, and local regulations before construction activities may resume at the site where contamination is encountered.

- Retain a licensed contractor to remove all domestic and irrigation wells in accordance with applicable local, State, and federal regulations, including the City of Ceres Municipal Code Chapter 13.05.

- Abandon all septic tanks on the project site under permit from the Stanislaus County Department of Environmental Resources.

- Prepare a Limited Phase II ESA to determine the presence and extent of any residual herbicides, pesticides, termiticides, and fumigants on historically-farmed land in agricultural areas that would be disturbed during construction of the proposed project. The soil sampling and analysis shall be conducted by a qualified Phase II Environmental Assessor. The Limited Phase II ESA shall document the areas proposed for sampling; the procedures for sample collection; the laboratory analytical methods to be used; and the pertinent regulatory threshold levels for determining proper excavation, handling, and, if necessary, treatment, or disposal of any contaminated soils. The Limited Phase II ESA shall be submitted to the City of Ceres for review and approval before the start of ground-

disturbing activities. If samples reveal concentrations of pesticide residue in excess of acceptable thresholds, actions shall be taken to remediate soil contamination to within ASTM International standards. Such actions could include excavation and disposal of contaminated soils from the site or bioremediation. A qualified Phase II Environmental Assessor shall be retained to develop and carry out a remediation plan, if necessary.

- Retain a Cal-OSHA-certified Asbestos and/or Lead-Based Paint Inspector/Assessor before demolition of any on-site buildings to investigate whether any asbestos-containing material or lead-based paints are present, and could become friable or mobile during demolition activities. The construction contractor shall provide a completed San Joaquin Air Pollution Control District Asbestos Notification Form must be submitted to the district 10 working days before the activity begins. If any materials containing asbestos or lead are found, they shall be removed by an accredited contractor in accordance with CCR 17 Section 36000 and 36100 (lead based paint) and Section 39658(b)(1) of the Health and Safety Code (asbestos). In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with EPA, Cal-OSHA, and San Joaquin Air Pollution Control District standards. The materials containing asbestos and lead shall be disposed of properly at an appropriately permitted off-site disposal facility.

Significance after Mitigation

Implementation of Mitigation Measure 3.8-2 would reduce the potentially significant impacts related to exposure to hazardous substances to a **less-than-significant** level because previously undiscovered and known hazardous substances would be removed and properly disposed of by a licensed contractor in accordance with federal, State, and local regulations, which are specifically designed to protect the public from human health hazards.

IMPACT 3.8-3 Emission or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing School. *La Rosa Elementary School and Cesar Chavez Junior High School are located on the project site. Construction of the proposed project would be required to implement and comply with existing hazardous materials regulations, and because each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. No land uses are proposed that would emit hazardous emissions or handle acutely hazardous materials. Impacts related to handling hazardous or acutely hazardous materials in the vicinity of the La Rosa Elementary School and Cesar Chavez Junior High School are considered* less than significant.

The Specific Plan proposes residential uses in an area adjacent to the Cesar Chavez Elementary School. In addition, the La Rosa Elementary School is located approximately 0.2 mile east of the proposed development. As discussed in Impact 3.8-1, project construction contractors are required by law to implement and comply with existing hazardous material regulations, including those outlined in CCR Title 22 and Cal/EPA's Unified Program. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies.

Residential land uses would not result in hazardous emissions or handle acutely hazardous materials (i.e., waste containing such dangerous chemicals that it could pose a threat to human health and the environment even when

properly managed). Many general household cleaning products are not used in sufficient quantities to pose a danger to students. In addition, the maintenance of the central park blocks would not result in hazardous emissions or handling of acutely hazardous materials. Therefore, impacts related to hazardous emissions and handling hazardous or acutely hazardous materials in the vicinity of the La Rosa Elementary School and Cesar Chavez Junior High School are considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.8-4 Safety Hazard for People Residing Near the Modesto City-County Airport. *The project site is located within the Modesto City-County Airport's AIA and identified in the Modesto City-County Airport ALUCP as located within Referral Area 2, the Airspace Protection Zone, and the Overflight Zone. Referral Area 2 or the Airspace Protection Zone identify locations where noise and public safety are not concerns, but where land uses in airspace protection zones and in overflight areas pose compatibility concerns. There are no land uses restrictions in the Overflight Zone; rather, the Overflight Zone establishes requirements for notification to potential buyers about airport proximity, aircraft overflights, and noise. In addition, the project site is not within an airport safety zone. This impact would be less than significant.*

The Modesto City-County ALUCP indicates that the project site is located within the AIA and is identified as being located within Referral Area 2, the Airspace Protection Zone, and the Overflight Zone. Referral Area 2 and the Airspace Protection Zone identify locations where noise and public safety are not concerns but where land uses in airspace protection zones and in overflight areas pose compatibility concerns. As discussed previously, land uses in the Airspace Protection Zone are restricted to prevent creation of physical, visual, or electronic hazards to flight and land uses in Referral Area 2 are subject to FAR Part 77 criteria height limits (i.e., 200 feet above ground level). The Specific Plan does not propose open water or landscape features that could attract birds, does not propose land uses that create light and glare which could be mistaken for airport lighting or visually impair pilots, and does not propose any antennas or communications facilities that could interfere with radio communications. Furthermore, building heights would not exceed applicable height limits. Airport land use compatibility as it pertains to noise standards is discussed in Section 3.11, "Noise and Vibration." Land use compatibility as it pertains to airspace protection and overflight policies is discussed in Section 3.10, "Land Use and Planning."

The project site is located within the Overflight Zone. In general, the Overflight Zone addresses the area where aircraft overflights can be intrusive and annoying to many people. Unlike the noise, safety, and airspace protection compatibility policies, the overflight policies do not restrict land uses in the Overflight Zone. Rather, the Overflight Zone establishes requirements for notification to potential buyers about airport proximity, aircraft overflights, and noise.

In addition, the ACLUP defines six airport safety zones that identify locations where certain types of proposed development and infrastructure may be restricted on the basis of safety compatibility. The project site is not within an airport safety zone.

Because the project site is not within an area where residential land uses present safety concerns or within an airport safety zone, this impact is considered **less than significant**. However, the mitigation measure below is provided for planning purposes.

Mitigation Measure

Mitigation Measure 3.8-4: Provide Real Estate Disclosure of Presence of Modesto City-County Airport.

Applicants shall prepare for review by the City a real estate disclosure noting the presence of the Modesto City-County Airport. This is required for proposed residential development in the northwestern corner of the Specific Plan Area, as shown in the ALUCP Map MOD-5 "Overflight Zones Policy Map," or as this map may be updated in the future. This disclosure shall be presented to prospective homebuyers. In addition, the applicant shall prepare for review by the City a real estate disclosure describing noise attributable to aircraft overflight according to the latest available mapping of noise contours associated with the Modesto City-County Airport. This disclosure shall be presented to prospective homebuyers.

IMPACT 3.8-5 Interference with Adopted Emergency-Response or Plans or Emergency Access. *Implementation of the Specific Plan would not result in interference with adopted emergency-response or emergency evacuation plans. However, local roadways would experience a higher traffic volume during construction that could potentially slow emergency access. In addition, proposed pedestrian and bicycle improvements along Whitmore Avenue and Moore Road and multi-modal extensions of Lunar Drive and Boothe Road would result in traffic delays during construction as a result of temporary lane closures, increased construction truck traffic, and other roadway effects that could slow emergency access. Therefore, this impact is considered* potentially *significant.*

Implementation of the proposed project would not conflict with any adopted emergency response or evacuation plans. The proposed project would require permits through the Ceres Fire Department and City of Ceres Building and Planning Division that ensure that the project provides sufficient hydrant locations, street width, circulation, and project access for fire and emergency response units consistent with the California Fire Code and City of Ceres *Improvement Standards* both of which identify minimum requirements for providing a reasonable level of life safety and property protection from fire hazards or other dangerous conditions and for providing a reasonable level of safety for fire fighters. Finally, the circulation plans for the proposed project, subject to review and approval of the City of Ceres, would include sufficient ingress and egress routes to ensure public safety, in the event of an emergency.

The project site contains sufficient land such that construction materials, equipment, and personnel would be staged on site. However, the proposed project includes construction of a multi-use path along Whitmore Avenue between Moore Road and Esmar Road and off-site roadway and intersection improvements. Ongoing construction activities along these roadways could result in temporary lane closures, increased construction truck traffic, and other roadway effects that could slow or interfere with emergency vehicles, temporarily increasing response times and impeding existing services. The impact is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.8-5: Prepare and Implement a Construction Traffic Control Plan.

The project applicant(s) and/or construction contractor(s) shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way during construction, in order to facilitate travel of emergency vehicles on affected roadways. The traffic control plan must follow applicable City of Ceres *Improvement Standards* (whichever edition is current as of the date of construction) and must be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to the existing surrounding land uses shall be maintained at all times, with detours used, as necessary, during road closures. The traffic control plan shall be submitted to the City of Ceres Engineering Division for review and approval before the approval of improvement plans and issuance of building permits by the City of Ceres Building Division where roadway improvements may cause impacts on traffic. The traffic control plan shall be implemented throughout construction.

Significance after Mitigation

Implementation of Mitigation Measure 3.8-5 would reduce the significant impact associated with decreased emergency response times during construction to a **less-than-significant** level by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities.

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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 ENVIRONMENTAL SETTING

SURFACE WATER HYDROLOGY

Tuolumne River

No natural watercourses flow through the Specific Plan Area. The Tuolumne River is located immediately north of, and adjacent to the City limits. It flows for approximately 150 miles from the Sierra Nevada and its foothills—through Hetch Hetchy, Don Pedro, and La Grange reservoirs—to its convergence with the San Joaquin River approximately 5.5 miles west of the city of Ceres.

Tuolumne River Watershed

The Tuolumne River watershed occupies approximately 1,958 square miles and includes portions of Stanislaus, Mariposa, and Tuolumne counties. It is the largest watershed in the San Joaquin River system. The sources of the Tuolumne River are Mt. Dana and Mt. Lyell in Yosemite National Park.

Climate and Precipitation

The inland Mediterranean climate of the San Joaquin Basin is characterized by hot, dry summers and cool, rainy winters. The local meteorology in the vicinity of the Specific Plan Area is represented by measurements recorded at the Western Regional Climate Center's (WRCC) Newman station. The normal annual precipitation, which occurs primarily from November through March, is approximately 10.7 inches (WRCC 2015). January temperatures range from an average minimum of 36.2 degrees Fahrenheit (°F) to an average maximum of 55.9°F. July temperatures range from an average minimum of 59.3°F to an average maximum of 97.3°F (WRCC 2015).

Flooding

Floodplain designations are important hydraulic engineering considerations when constructing buildings, roads, and bridges. Flood hazards in Ceres were last studied by Federal Emergency Management Agency (FEMA) in September 2008 as part of the Countywide mapping of Stanislaus County. The most recent FEMA Flood Insurance Study Flood Insurance Rate Map (2008) indicates that the Specific Plan Area is located in Flood Zone X (FEMA 2008). Areas identified as FEMA Flood Zone X are areas of minimal flood hazard that are subject to 0.2%-annual-chance flood events.

Senate Bill 5, implemented in October 2007, required the California Department of Water Resources to develop preliminary maps for the 200-year floodplains in the Sacramento–San Joaquin Valley Watershed by July 1, 2008. The maps provide the best available information on flood protection to cities and counties, showing areas protected by State and federal project levees and areas outside the protection of project levees. The best available maps, as provided by the California Department of Water Resources, show 200-year floodplains are located along the banks of the Tuolumne River. Based on these maps, the Specific Plan Area is not within the 200-year floodplain (Stanislaus County 2015).

Erosion and Stormwater Runoff Potential

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff producing characteristics. Hydrologic soil groups are factored into calculations of erosion and stormwater runoff potential when drainage plans are prepared.

As discussed in Section 3.6, "Geology, Soils, Minerals, and Paleontological Resources," the Specific Plan Area is composed of the Hanford sandy loam, moderately deep over silt, 0 to 1 percent slopes (U.S. Natural Resources Conservation Service [NRCS] 2017). Hanford sandy loam is classified by the NRCS as within hydrologic soil Group C.[1] Group C soils have a layer that impedes the downward movement of water or are soils with a moderately fine or fine texture. These soils have a slow infiltration rate when thoroughly wet and a slow rate of water transmission.

GROUNDWATER HYDROLOGY

The Specific Plan Area is located in the Turlock Subbasin, which is part of the larger San Joaquin Valley Groundwater Basin California Department of Water Resources [DWR] Subbasin Number 5-22.03). The Turlock Subbasin lies between the Tuolumne and Merced Rivers and is bounded on the west by the San Joaquin River and on the east by the crystalline basement rocks of the Sierra Nevada foothills. The climate is Mediterranean in nature, with hot, dry summers and mild winters; most of the yearly rainfall occurs during winter. The average annual precipitation is approximately 11–13 inches, increasing to approximately 15 inches in the Sierra Nevada foothills.

Several consolidated and unconsolidated hydrogeologic units are located in the Turlock Subbasin. The Mehrten Formation (consolidated) and unconsolidated continental deposits and older alluvium (the Modesto, Riverbank, and Turlock Lake formations) are the highest in terms of aquifer yield (DWR 2006).

Three groundwater bodies are located in the Turlock Subbasin: an unconfined water body, a semiconfined and confined water body in the consolidated rocks, and a confined water body below the Corcoran Clay layer (in the western portion of the subbasin). The unconfined water body is used for both domestic and agricultural supply; wells less than 200 feet deep generally draw from this aquifer. The confined aquifer beneath the Corcoran Clay provides extensive municipal and agricultural water supply for the subbasin; wells greater than 200 feet generally draw from this aquifer. A deeply buried, confined aquifer is located beneath the principal water bodies discussed above. This aquifer contains saline brine and is under hydraulic pressure sufficient to push the saline brine up toward the land surface. In certain areas, this results in high concentrations of total dissolved solids (TDS), which has an adverse effect on water quality (Turlock Groundwater Basin Association [TGBA] 2008:2, 3).

Groundwater flow in the unconfined aquifer occurs primarily to the southwest, following the regional dip of sedimentary and basement rocks downward from the foothills to the axis of the San Joaquin Valley. Groundwater flow beneath the Specific Plan Area is generally northwest toward the Tuolumne River. The direction of groundwater flow is controlled by the Tuolumne, Merced, and San Joaquin rivers (West Yost Associates 2011:4-3).

[1] Hydrologic soil groups rate water infiltration when soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Hydrologic soil groups are factored into calculations of erosion and stormwater runoff potential when drainage plans are prepared.

The Turlock Subbasin underlies approximately 347,000 acres of land. The predominant land uses are irrigated crops (245,000 acres), native vegetation (69,000 acres), and urban development (20,000 acres). The overall land use trend has been one of increased urbanization, from approximately 4,000 acres in 1952 to 20,000 acres in 2006, and most of the urban growth has occurred in the in the Turlock Irrigation District (TID) area (where the Specific Plan Area is located) (City of Ceres 2016).

Groundwater Wells

Ceres supplies potable water to approximately 11,000 municipal, industrial, and residential users to meet nearly all the demands within the City limits, as well as demands outside of the City limits in the Specific Plan Area and areas generally southwest of State Route 99, east of Blaker Road, and north of the southern boundary of the City's sphere of influence. Ceres maintains 12 active municipal supply wells with a reliable source capacity of approximately 10,000 gallons per minute (gpm) and a peak capacity of 14,500 gpm. The active wells have been constructed to a total depth ranging from 180 feet to 425 feet. Ceres also has three additional municipal supply wells that are inactive due to concentrations of nitrate, uranium and manganese, or specific conductance and manganese that exceed the maximum contaminant level (MCL). Ceres also uses nonpotable groundwater pumped from shallow wells to irrigate all of its public parks with the exception of Roeding Park (West Yost Associates 2011:2-2 and 2-4).

Groundwater Levels

A water balance study of the Turlock Subbasin was prepared in 2003 and updated in 2007 to estimate the inflows and outflows from the subbasin between 1952 and 2006. Outflows from the subbasin result from municipal, domestic, and agricultural supply and drainage well pumping; discharge to the local rivers; discharges from subsurface agricultural drains; and consumption by riparian vegetation. The estimated average total outflow for the 1997–2006 period was 541,000 acre-feet per year (afy). Most of the outflow is related to agricultural, municipal, and rural residential supply and drainage well pumping, which collectively averaged 457,000 afy for the 1997–2006 period. Inflows to the subbasin result primarily from deep percolation of agricultural and landscape irrigation water and infiltration of precipitation. The estimated average total inflow for the 1997–2006 period was 519,000 afy (TGBA 2008:3).

The contour maps used in the water balance study indicate that estimated groundwater storage decreased by approximately 21,500 afy between 1997 and 2006. However, the magnitude and direction of changes in groundwater storage cannot be fully characterized using an analysis based solely on groundwater contours. The Turlock Subbasin groundwater model was used to supplement this analysis and confirm that groundwater storage has decreased slightly, particularly between 2002 and 2006. The estimated reduction in storage between 2002 and 2006 suggests that the subbasin may have not been in the equilibrium state that existed in the 1990s. Increases in land use types that rely on groundwater for supply increased the net discharge from the subbasin (TGBA 2008:4).

In late 2006, the TGBA commissioned a study, completed in 2008, to predict the impact on the subbasin's groundwater conditions as a result of expected land use changes. Many water use patterns in the subbasin are changing because of increased urbanization, changing agricultural cropping patterns, expansion of agriculture in areas east of the TID service area that depend on groundwater for their supplies, the expanded use of efficient irrigation practices, and increased conservation in urban areas. The study updated the TID groundwater model to include data through 2006 and to simulate land- and water-use changes into the future.

Between 1992 and 2012, groundwater levels were in balance with about the same amount of outflow as inflow (Dyett & Bhatia 2016:65). However, groundwater levels in the subbasin underlying the City have dropped 15 to 20 feet between 2014 and 2016 as a result of the drought.

The City's existing wells have a reliable pumping capacity of 10,492 gallons per minute (gpm). In 2015, the City pumped 2,104 million gallons, with an average of 5.8 million gallons per day (mgd) (City of Ceres 2015). The pumping capacity for the City during 2015 was 11,566 gpm (City of Ceres 2016). The City's water master plan assumes that the City's historic yearly pumping rate of approximately 10,000 afy is at or near the limit of safe yield of the Turlock Subbasin underlying the City (West Yost Associates 2011:4-4, 4-18, 4-23). The City anticipates groundwater supplies will be used to meet all of the City's current water needs through 2020 (City of Ceres 2016:7-5). The City, as a member of the Stanislaus Regional Water Authority (SRWA), has entered into a water sales agreement for delivery of 1,825 million gallons per year (5,600 afy) of TID surface water (City of Ceres 2016:6-5). The SRWA's Regional Surface Water Supply Project will include numerous improvements within the cities of Turlock and Ceres to pump water from the Tuolumne River, treat it to drinking water standards, and then deliver it to the City's service area (Dyett & Bhatia 2016:129). TID anticipates providing the City with surface water supply starting in 2022 (City of Ceres 2016:6-1).

Groundwater Recharge

Groundwater in the Turlock Subbasin is recharged by percolation of precipitation, return flows from irrigation of crops and landscaping, percolation from the Tuolumne and Merced Rivers, leakage from Turlock Lake, underflow from the Sierra Nevada foothills, and upward seepage from deep geologic fractures. Deep percolation of irrigation water is the largest source of recharge in the subbasin, accounting for approximately 72 percent of total recharge. Surface water primarily from TID, but also from the Merced Irrigation District, supplies more than half of the total irrigation water applied within the subbasin. As stated above, the estimated average total inflow (recharge) to the subbasin for the 1997–2006 period was 519,000 afy. Of this amount, approximately 375,000 afy is estimated to come from agricultural irrigation (West Yost Associates 2011:4-15; TGBA 2008:3, 36).

WATER QUALITY

The existing beneficial uses of water in the lower Tuolumne River watershed (from Don Pedro Reservoir to the San Joaquin River) are agriculture, recreation, freshwater habitat, cold and warm water migration and spawning for anadromous species, and wildlife habitat (Central Valley Regional Water Quality Control Board [RWQCB] 2011). For agricultural irrigation, the primary constituents of concern for maintaining the health of crops and soils are TDS and boron. Water quality constituents and conditions that can affect aquatic and terrestrial organisms include elevated concentrations of heavy metals, nutrients (nitrogen and phosphorus), suspended sediment, and turbidity, as well as elevated water temperature or decreased dissolved oxygen content.

Surface Water

As with most of the watersheds in the state, historical and ongoing land uses such as agricultural production, residential and commercial development, and industrial activities (including historic mining operations) have had an effect on surface water quality within the Tuolumne River watershed. Fertilization of croplands and application of pesticides has introduced elevated levels of nitrogen compounds and pesticide residues to both surface water and groundwater, and evapotranspiration by agricultural crops has increased the salinity of water that percolates below the root zone to groundwater. Sand and gravel mining activities have altered the geomorphology of the

riverbed of the Tuolumne River and its tributaries in some cases, resulting in accelerated erosion and sedimentation. Abandoned mines in the upper Tuolumne River watershed are also a source of mercury and other heavy metals.

In developed parts of the Tuolumne River watershed, nonpoint-source pollutants are washed from streets, construction sites, parking lots, and other exposed surfaces into storm drains. Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in fall. The amount of contaminants discharged in stormwater from developed areas varies, based on a variety of factors: the intensity of urban uses such as vehicle traffic, the types of activities occurring on-site (e.g., office, commercial, and industrial), the types of contaminants used on-site (e.g., pesticides, herbicides, cleaning agents, and petroleum byproducts), the contaminants deposited on paved surfaces, and the amount of rainfall.

The lower Tuolumne River (from Don Pedro Reservoir to the San Joaquin River) is included in the *2012 Section 303(d) List of Impaired Waters* for California issued by the State Water Resources Control Board (SWRCB 2016) as an impaired water body under Section 303(d) of the federal Clean Water Act (CWA) for the following constituents: chlorpyrifos, diazanon, Group A pesticides, mercury, and water temperature. Most of these contaminants are present as a result of agricultural operations; however, mercury is present as a result of historic mining operations. Table 3.9-1 shows the list of pollutants, potential sources, and the proposed total maximum daily loads limits (TMDLs) completion dates.

Table 3.9-1. Section 303(d)-Listed Pollutants for the Lower Tuolumne River[1]

Pollutant/Stressor	Pollutant Category	Potential Sources	Proposed TMDL Completion Date
Chlorpyrifos	Pesticides	Source Unknown	2021
Diazanon	Pesticides	Source Unknown	2010[2]
Group A Pesticides[3]	Pesticides	Source Unknown	2011[2]
Mercury	Metals/Metalloids	Source Unknown	2021
Water Temperature	Miscellaneous	Source Unknown	2021

Notes: TMDL = total maximum daily load

[1] From Don Pedro Reservoir to the San Joaquin River

[2] The Central Valley Regional Water Quality Control Board determine that the water body-pollutant should not be removed from the section 303(d) list because applicable water quality standards for the pollutant are being exceeded.

[3] Human carcinogens

Source: SWRCB 2016

Groundwater

The *Turlock Subbasin Groundwater Management Plan* (TGBA 2008) found that overall groundwater quality in the subbasin is high, although salinity, nitrates, iron, manganese, boron, arsenic, radionuclides, bacteria, pesticides, trichloroethylene, and other trace organic compounds have been detected. Some of these compounds are naturally occurring, while others have been introduced by human activity. As previously discussed, the groundwater pumping capacity of Ceres wells is approximately 10,492 gpm, and approximately 2,044 gpm of this total capacity (or 19%) consists of groundwater that is treated as of 2017.

The water quality of nearly all of the City's wells is affected by a combination of inorganic contaminants consisting of uranium, nitrate, arsenic, manganese, trichloropropane, and specific conductance (which is a measure of how effectively the water will conduct electricity). Nitrate, uranium, and arsenic are regulated primary contaminants, meaning that adverse health effects could occur if levels exceed the MCLs. Specific conductance is monitored as a measurement of TDS. Manganese and TDS are considered secondary contaminants that have negative impacts on the aesthetic appearance of water at levels above the MCLs (West Yost Associates 2011:2-3, 4-4, 4-6). Nitrates in the City's groundwater wells are below the MCL. Two of the City's groundwater wells are being treated – one for arsenic and manganese and the other for uranium. These wells are continually monitored to ensure these contaminants do not exceed MCLs (City of Ceres 2016).

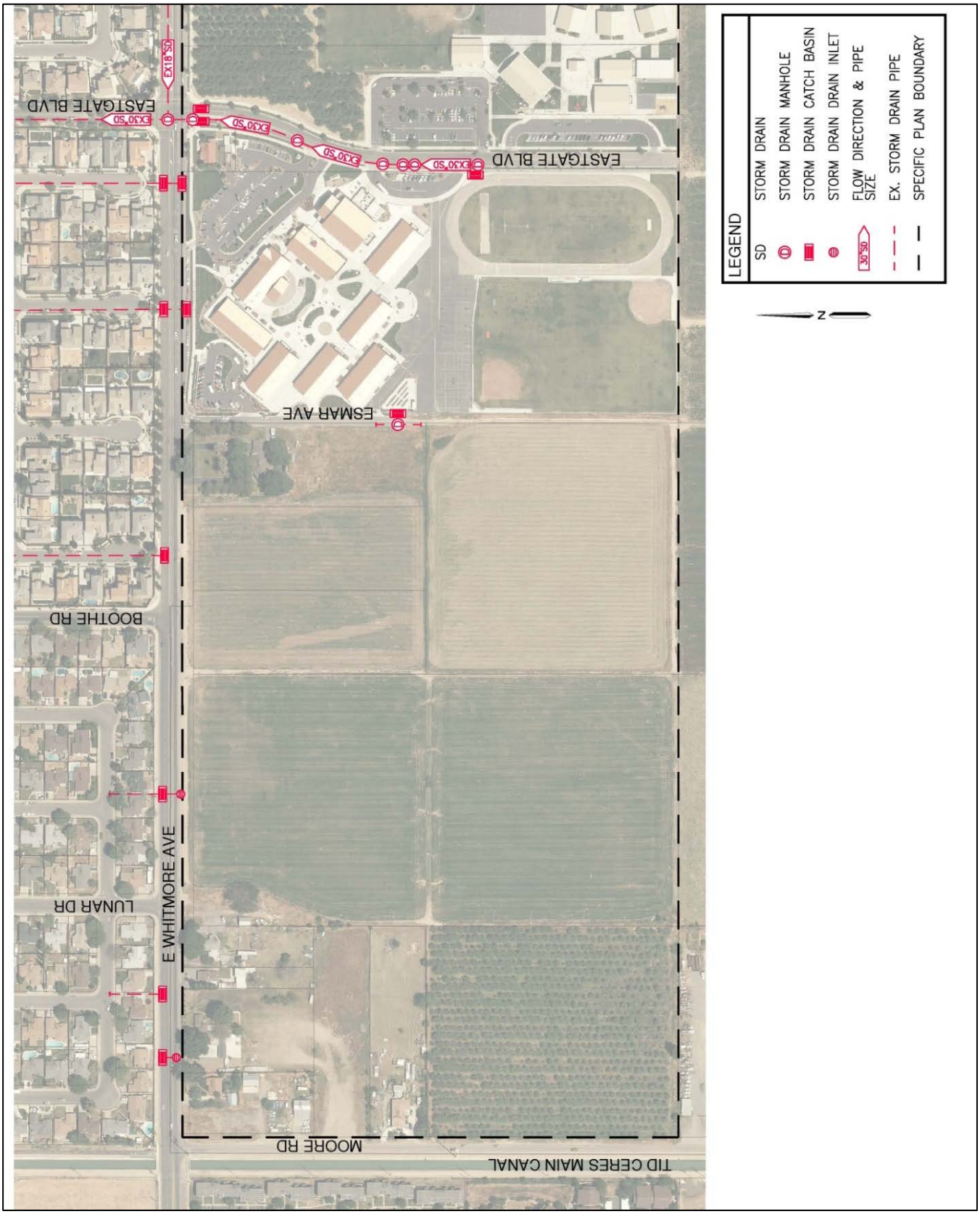
Many of the existing wells are nearing the end of their service life and may need to be replaced to maintain the City's groundwater pumping capacity through full Ceres 2035 General Plan buildout. Because of water quality concerns, wellhead treatment and/or blending of well water is expected to be necessary in the future (West Yost Associates 2011).

STORMWATER DRAINAGE SYSTEMS

The City's storm drain system includes over 1,540 drain inlets, over 80 miles of storm drain pipe, 40 retention/detention ponds, 40 pump stations, 25 French drains, and 80 rock (dry) wells. There is not a single city-wide storm drainage system, but rather several individual smaller storm drainage systems. The majority of stormwater runoff flows into detention basins, with only a limited number of neighborhoods discharging directly to a TID canal or to the Tuolumne River. Stormwater runoff is disposed of by percolation, by discharge to four TID canals at a total of 25 locations via detention basins, and by discharge in four locations to the Tuolumne River (Dyett & Bhatia 2016:138). Stormwater ultimately discharges to the San Joaquin River.

The La Rosa Elementary School and Cesar Chavez Junior High School are served by on-site stormwater drainage systems. La Rosa Elementary School has an on-site retention basin and French drain that collects and percolates stormwater runoff water. Cesar Chavez Junior High School has a system of on-site drain inlets and pipes that drain to a 30-inch storm drain pipe in Eastgate Boulevard (Exhibit 3.9-1). This pipeline discharges into the Tuolumne River.

In 2002, an Eastgate Storm Drain Benefit District was established to share the costs of the storm drain system among the properties using and benefitting from it. The first phase of this District was established for the area north of Whitmore Avenue (Area 1). The area south of Whitmore Avenue (which contains the Specific Plan Area), part of Area 2, was considered a future phase of development. A description developed for the Eastgate Storm Drain Benefit District established the drainage system for the area that includes the Specific Plan Area. A 30-inch pipeline exists in Eastgate Boulevard, which flows north, eventually discharging into the Tuolumne River. This pipe is sized to accept seven cubic foot per second (cfs) from the future development to the south and southwest (including the Specific Plan Area) and 3.7 cfs from the future development to the southeast.



Source: O'Dell Engineering 2017

Exhibit 3.9-1 Existing Storm Drainage Facilities

3.9.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for managing water quality. The Clean Water Act (CWA) of 1972 is the primary federal law that governs and authorizes EPA and the individual states to implement activities to control water quality. The various elements of the CWA that address water quality and are applicable to the project are discussed below. Wetland protection elements administered by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA, including permits for the discharge of dredged and/or fill material into waters of the United States, are discussed in Section 3.4, "Biological Resources."

Water Quality Criteria and Standards

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the U.S. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Where multiple uses exist, water quality standards must protect the most sensitive use. EPA is the federal agency with primary authority for implementing regulations adopted under the CWA. EPA has delegated the State of California as the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. A discharge from any point source is unlawful unless the discharge is in compliance with an NPDES permit. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects that disturb 1 acre or more. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [MS4s]) required small municipal areas of less than 100,000 persons to develop stormwater management programs. The nine RWQCBs in California are responsible for implementing the NPDES permit system (see additional information below).

Ceres is an automatically designated small MS4 operator. Ceres is a co-participant, along with cities of Oakdale, Patterson, and Riverbank in a Storm Water Management Program (City of Ceres 2003) prepared in compliance with the SWRCB General Permit for MS4s (see "Storm Water Management Program" under "Regional and Local Plans, Policies, Regulations, and Laws," below).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certificate from the appropriate State agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the SWRCB to the nine RWQCBs.

Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected.
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Safe Drinking Water Act

- Under the Safe Drinking Water Act (Public Law 93-523), EPA regulates contaminants of concern to domestic water supply, defined as contaminants that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA's primary and secondary MCLs, which are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act, enacted in 1986, established an accelerated schedule for setting MCLs for drinking water.
- EPA has delegated to the California Department of Public Health (DPH) the responsibility for administering California's drinking water program. DPH is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable State primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows links between loading reductions and the attainment of water quality objectives. The EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is California's statutory authority for the protection of water quality. Under the act, the State must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update Basin Plans. Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California.

The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge (RWDs) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to RWDs and/or WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions. The Central Valley RWQCB Basin Plan applies to the Specific Plan Area.

Central Valley Basin Plan

The *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan) (Central Valley RWQCB 2011) describes the officially designated beneficial uses for specific surface water and groundwater resources and the enforceable water quality objectives necessary to protect those beneficial uses. Basin Plans are generally updated every three years by the Central Valley RWQCB in compliance with the Porter-Cologne Act.

The Basin Plan includes numerical and narrative water quality objectives for physical and chemical water quality constituents. Numerical objectives are set for temperature; dissolved oxygen; turbidity; pH (i.e., acidity); total dissolved solids; electrical conductivity; bacterial content; and various specific ions, trace metals, and synthetic organic compounds. Narrative objectives are set for parameters such as suspended solids, biostimulatory substances (e.g., nitrogen and phosphorus), oils and grease, color, taste, and aquatic toxicity. Narrative objectives are often precursors to numeric objectives. The RWQCB issues WDRs for projects that may discharge wastes to

land or water uses to ensure conformance with Basin Plan water quality objectives and implementation policies. WDRs specify terms and conditions that must be followed during the implementation and operation of a project.

NPDES Permit System and Waste Discharge Requirements for Construction

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits for a variety of activities that have the potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater general permit for construction activity (Order 2009-009-DWQ as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) is applicable to all land-disturbing construction activities that would disturb 1 acre or more. The Central Valley RWQCB's general NPDES permit for construction dewatering activity (Order No. R5-2013-0074) authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year. All of the NPDES permits involve similar processes, which include submitting notices of intent to discharge to the Central Valley RWQCB and implementing storm water pollution prevention plans (SWPPPs) that include BMPs to minimize those discharges. As mentioned above, the Central Valley RWQCB may also issue site-specific WDRs or waivers to WDRs for certain waste discharges to land or waters of the state. In particular, Central Valley RWQCB Resolution R5-2003-0008 identifies activities subject to waivers of RWDs and/or WDRs, including minor dredging activities and construction dewatering activities that discharge to land.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider using permanent post-construction BMPs that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

In addition, the Central Valley RWQCB requires water quality sampling if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under CWA Section 303(d) because of sediment or siltation, or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis is required.

The applicant for a Construction General Permit must prepare and implement a SWPPP. The SWPPP must include a site map and description of construction activities, and must identify BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources. Examples of construction BMPs typically included in SWPPPs include using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment-control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutant discharges to drainage systems or receiving waters.

NPDES Municipal Storm Water Permitting Program

The SWRCB's Municipal Storm Water Permitting Program regulates stormwater discharges from MS4s. An MS4 is defined by the EPA in 40 Code of Federal Regulations (CFR) 122.26(b)(8) as:

> …a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) designed or

used for collecting or conveying storm water; (ii) which is not a combined sewer; and (iii) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. (SWRCB 2013.)

MS4 permits are issued in two phases. Under Phase I, which started in 1990, the RWQCBs adopted NPDES stormwater permits for medium and large municipalities (serving 100,000–250,000 people and 250,000 or more people, respectively). Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area.

As part of Phase II, the SWRCB adopted the General Permit for the Discharge of Storm Water from Small MS4s (Order No. 2003-0005-DWQ, as amended by Order No. 2013-0001 DWQ) to provide permit coverage for smaller jurisdictions. A small MS4 is not permitted under the Phase I regulations and is owned or operated by the United States or a state, city, town, borough, county, district, association or other public body having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States (SWRCB 2013). Ceres is an automatically designated small MS4 operator.

The MS4 permits require the discharger to develop and implement a stormwater management plan with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). "Maximum extent practicable" is the performance standard specified in Section 402(p) of the CWA. The management plans specify what BMPs will be used to address certain program areas—namely, public education and outreach, detection and elimination of illicit discharges, construction and post-construction, and municipal operations. Ceres is a co-participant along with cities of Oakdale, Patterson, and Riverbank in a Storm Water Management Program (City of Ceres 2003) prepared in compliance with SWRCB General Permit for MS4s (see "Storm Water Management Program" under "Regional and Local Plans, Policies, Regulations, and Laws," below).

Landowners are responsible for applying for coverage under the permit and complying with permit requirements, but may delegate specific duties to developers and contractors by mutual consent. Permit applicants are required to prepare and implement a SWPPP which describes the site; erosion and sediment controls; means of waste disposal; implementation of local plans; control of post-construction sediment and erosion control measures and maintenance responsibilities; and non-stormwater management control.

There are two types of small MS4 permittees: regular and non-traditional. A non-traditional small MS4 consists of a stormwater system serving public campuses, municipalities, military bases, prisons, or hospitals that are located within or discharge to a permitted MS4, or which pose a "significant threat" to receiving water quality. The SWRCB and Central Valley RWQCB have not officially designated any MS4s as "non-traditional."

Title 22 Standards

Water quality standards are enforceable limits composed of two parts: (1) the designated beneficial uses of water, and (2) criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply (MUN) is among the "beneficial uses" as defined in Section 13050(f) of the Porter-Cologne Act, which defines them as uses of surface water and groundwater that must be protected against water quality degradation. MCLs are components of the drinking water standards adopted by the California Department of Public Health pursuant to the California Safe Drinking Water Act. California MCLs may be found in Title 22 of the California Code of Regulations, Division 4, Chapter 15, Domestic Water Quality and Monitoring. The California Department of

Public Health is responsible for Title 22 of the California Code of Regulations (Article 16, Section 64449) as well, which also defines secondary drinking water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues.

California MCLs, both Primary and Secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent Basin Plan. In such cases, MCLs become enforceable limits by the SWRCB and the RWQCBs. When fully health protective, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water (MUN) in the Basin Plan.

There are no constituents above the California Toxics Rule standards for the portion of the Tuolumne River in the City of Ceres (Central Valley RWQCB 2011). Nitrates in the City's groundwater supply wells are below the MCL. Two of the City's groundwater wells are being treated for arsenic and manganese and these wells are continually monitored to ensure these contaminants do not exceed MCLs (City of Ceres 2016).

California Toxics Rule and State Implementation Plan

The California Toxics Rule was issued in 2000 in response to requirements of the EPA National Toxics Rule (NTR), and establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The California Toxics Rule criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are subject CWA Section 303(c). The California Toxics Rule includes criteria for the protection of aquatic life and human health. Human health criteria (water and organism based) apply to all waters with a Municipal and Domestic Water Supply Beneficial Use designation as indicated in the Basin Plans.

The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, also known as the State Implementation Plan, was adopted by the SWRCB in 2000. It establishes provisions for all of the following efforts:

- translating California Toxics Rule criteria, NTR criteria, and Basin Plan water quality objectives for toxic pollutants into NPDES permit effluent limits;
- effluent compliance determinations;
- monitoring for 2,3,7,8-TCDD (dioxin) and its toxic equivalents;
- chronic (long-term) toxicity control provisions;
- initiating site-specific water quality objective development; and
- granting of exceptions for effluent compliance.

The goal of the State Implementation Plan is to establish a standardized approach for the permitting of discharges of toxic effluents to inland surface waters, enclosed bays, and estuaries in a consistent fashion throughout the state.

California State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described above, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements, which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

Sustainable Groundwater Management Act

In 2014, the California Legislature enacted a three-bill law (Assembly Bill-1739, Senate Bill [SB]-1168, and SB-1319), known as the Sustainable Groundwater Management Act (SGMA). The SGMA was created to provide a framework for the sustainable management of groundwater supplies, and to strengthen local control and management of groundwater basins throughout the state with little state intervention. The SGMA is intended to empower local agencies to adopt groundwater management plans that are tailored to the resources and needs of their communities, such that sustainable management would provide a buffer against drought and climate change, and ensure reliable water supplies regardless of weather patterns. The SGMA is considered part of the statewide, comprehensive California Water Action Plan that includes water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. The SMGA protects existing surface water and groundwater rights and does not affect current drought response measures.

The SGMA requires that local agencies form a local groundwater sustainability agency within two years (i.e., by 2017). Agencies located within high- or medium-priority basins must adopt groundwater sustainability plans within five to seven years. The time frame for basins determined by DWR to be in a condition of “critical overdraft” is five years (i.e., by 2020). Local agencies will have 20 years to fully implement groundwater sustainability plans after the plans have been adopted. Intervention by the SWRCB would occur if a groundwater sustainability agency is not formed by the local agencies, and/or if a groundwater sustainability plan is not adopted or implemented.

The SGMA requires local agencies to develop and implement groundwater sustainability plans in high and medium priority groundwater basins throughout the State of California. The Turlock Subbasin has been ranked as a high priority basin and its basin plan is required to be completed by 2020 (City of Ceres 2016:6-4).

Designation of a groundwater sustainability agency is not required until 2017, and groundwater sustainability plans are not required until 2020 at the earliest. Per a Memorandum of Understanding (MOU) was adopted in September 2015 of by 10 local agencies, including the City, the Turlock Groundwater Basin Association is the

groundwater sustainability agency for the purpose of developing a basin-wide groundwater management plan to meet compliance at the state level (City of Ceres 2016:6-3).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Turlock Groundwater Basin Groundwater Management Plan

The TGBA was originally formed in 1995, and the first *Turlock Groundwater Basin Groundwater Management Plan* was adopted in 1997. At that time, the original TBGA was terminated by its founding provisions. However, the agencies that were involved in the TGBA continued to meet, and the TGBA officially re-formed in 2001. The *Turlock Groundwater Basin Groundwater Management Plan* describes the formation and purpose of the TGBA as follows (TGBA 2008):

> The following purposes and goals were set forth in the resulting MOU:
>
> > "To provide a mechanism to coordinate the implementation of the Plan and other groundwater management activities;
> >
> > To create an association of the Parties to enhance the ability to obtain funding to carry out the Plan and related groundwater management projects; and
> >
> > To provide information and guidance for the management, preservation, protection and enhancement of the Basin."

The MOU is based upon the premise that "non-coordinated action by water providers and users within the Basin could result in counterproductive competition for finite resources resulting in adverse impacts to the groundwater and surface water supplies within the Basin," and that the "creation of an Association for water suppliers within the Basin is important to protect the groundwater and surface water resources and will assist in meeting the needs of all users of such resources within the Basin." In addition, it was clear that local management of water resources was desirable in order to maintain local control of these resources. The purpose of the TGBA is to provide a forum in which the local public agencies can work cooperatively, to combine the available talent of the respective agency staffs, and to accomplish the purposes of the MOU. As such, the TGBA is not a separate governmental entity. It is designed such that it does not duplicate any services, duties, or authority of any other agency. The TGBA does not have any enforceable regulatory authority over any local agency's facilities or their respective surface water or groundwater supplies or water rights. The local water agencies, individually and collectively, are pursuing water management strategies outlined in [the Groundwater Management Plan] to ensure that groundwater continues to be a reliable, safe, efficient, and cost-effective water supply. The current version of the *Turlock Groundwater Basin Groundwater Management Plan* was adopted in 2008.

Storm Water Management Program

Ceres is a co-participant along with cities of Oakdale, Patterson, and Riverbank in a Storm Water Management Program (City of Ceres 2003) prepared in compliance with SWRCB General Permit for Small Cities No. CAS000004. Ceres is an automatically designated small MS4 operator. MS4 operators are required to develop a plan to undertake Minimum Control Measures, performance standards, work plan, and budget. The six categories of Minimum Control Measures that are included in the program consist of public outreach and education, public

participation and involvement, illicit discharge elimination, construction site BMPs over 1 acre, post-construction BMPs, and municipal activities. The program contains specific objectives for each measure.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to hydrology and water quality are applicable to the proposed Specific Plan.

Agricultural and Natural Resources

- **Policy 4.B.2 Recreational Open Space**. Site and design City parks to include natural open space areas for passive recreation, wildlife study and enjoyment, increasing biodiversity, and stormwater management.
- **Policy 4.F.3 Contamination Prevention**. Protect surface water and groundwater resources from contamination from point and non-point sources by pursuing strategies to minimize the pollutant and sediment levels entering the hydrological system through stormwater, agricultural, and other urban runoff.
- **Policy 4.F.4 Impervious Surfaces**. Minimize the amount of impervious surface in the Planning Area in order to reduce stormwater flows that may have a negative impact on the hydrology of the Tuolumne River and other downstream water bodies.
- **Policy 4.F.5 Permeable Surfaces**. Maximize the amount of permeable surfaces in public spaces to permit the percolation of urban runoff.
- **Policy 4.F.6 Green Infrastructure**. Require the use of feasible and practical best management practices (BMPs) and low-impact development (LID) strategies to protect receiving waters from the adverse effects of construction activities and urban runoff.
- **Policy 4.F.7 Hydrologically Friendly Development**. Encourage development that reflects an integrated approach to building design, civil engineering, and landscape architecture that maximizes rainwater harvesting and stormwater retention for landscape irrigation. Ensure that new development avoids causing significant changes in the Planning Area's hydrology and drainage patterns through activities such as grading, removing vegetation, increasing impervious surface cover, and introducing barriers to drainage flows.
- **Policy 4.F.8 Graded and Disturbed Areas**. Require that new development provides landscaping and re-vegetation of graded or disturbed areas with drought-tolerant native or non-invasive plants.
- **Policy 4.F.9 Construction Best Management Practices**. Require measures during construction and post construction to limit land disturbance activities such as clearing and grading and cut-and-fill; avoid steep slopes, unstable areas, and erosive soils; and minimize disturbance of natural vegetation and other physical or biological features important to preventing erosion or sedimentation.
- **Policy 4.F.11 Stormwater Pollution Prevention**. Ensure that public areas, including streets and recreational areas, are routinely cleaned of litter, debris, and contaminant residue. Coordinate with and support efforts by other organizations or volunteer groups to promote cleanups of parks and public open spaces. Require the City, property owners, or homeowners' associations, as applicable, to sweep permitted parking lots and public and private streets frequently to remove debris and contaminated residue.

Public Facilities and Services

- **Policy 6.F.1 Storm Drainage Capacity**. Ensure that increased storm drainage system capacity is sufficient to serve the existing Ceres community and planned urban development within the Planning Area.

- **Policy 6.F.2 Reducing Stormwater Runoff**. Encourage project designs that minimize drainage concentrations, minimize impervious coverage, utilize pervious paving materials, utilize low impact development (LID) strategies, and utilize Best Management Practices (BMPs) to reduce stormwater runoff.

- **Policy 6.F.3 Low Impact Development**. Promote the use of low impact development (LID) strategies in new development and redevelopment projects, including but not limited to the use of canopy trees and shrubs, vegetated swales, and permeable paving.

- **Policy 6.F.4 New Development Stormwater Mitigation**. Require new development to mitigate increases in stormwater peak flows and/or volume. Mitigation measures, such as low impact development (LID) strategies, should take into consideration impacts on adjoining lands in the city and immediately adjacent to the city in unincorporated Stanislaus County.

- **Policy 6.F.5 Drainage System Design**. Design all drainage systems to be in accordance with the accepted principles of civil engineering, adopted Storm Drainage Master Plan, and adopted storm drainage design standards and specifications.

- **Policy 6.F.6 Surface Drainage Disposal**. Require that new development have surface drainage disposal accommodated in one of the following ways:

    - Positive drainage. Positive drainage to a river, stream, creek, or other natural water course;

    - Irrigation facility. Drainage into an irrigation district facility, either by gravity or pumping, pursuant to the City of Ceres – Turlock Irrigation District agreement;

    - Drainage ponds. Ponds, either in individual lots within a subdivision or in the case of larger developments, within a drainage basin;

    - Drainage unit. Use of French drains within depressed areas of the street right-of-way for those subdivisions or portions of subdivisions of such size that positive drainage, irrigation into a facility, or drainage ponds is not feasible, as determined by the City Engineer; or

    - On-site drainage. Drainage retained on-site within the development.

    - Commercial development must accommodate drainage on-site unless positive drainage or irrigation facility methods described above are available and the development participates in a system to address on-site drainage as approved by the City Engineer. All on-site industrial drainage must remain on-site and require full paving improvements. Encourage commercial and industrial development to integrate on-site storm drainage facilities with landscaping.

- **Policy 6.F.7 Grading**. Require appropriate mitigation, such as temporary mulch or revegetation, for grading activities during the rainy season to avoid sedimentation of storm drainage facilities. See Municipal Code Chapter 13.18.120.

- **Policy 6.F.8 Surface Water Runoff**. Require projects that have significant impacts on the quality of surface water runoff to incorporate mitigation measures as described in Municipal Code Chapter 13.18.120.

- **Policy 6.F.9 Pollutant Discharge Requirements**. Ensure future drainage system requirements comply with applicable State and federal pollutant discharge requirements.

- **Policy 6.F.11 Stormwater Detention Facilities**. Allow stormwater detention facilities to mitigate drainage impacts and reduce storm drainage system costs. To the extent practical, design stormwater detention facilities for multiple purposes, including recreational and/or stormwater quality improvement. See Policy 6.C.14.

- **Policy 6.F.12 Stormwater Reuse**. Use stormwater of adequate quality to replenish the local groundwater basin, restore wetlands and riparian habitat, and irrigate agricultural lands, or as open space or recreational enhancements.

City of Ceres Municipal Code Chapter 13.18—Storm Water Management and Discharge Control

The purpose of Chapter 13.18 in Title 13 of the City of Ceres Municipal Code is to protect and promote the health, safety, and general welfare of the citizens of City of Ceres by controlling non-storm water discharges to the storm water conveyance system from spills, dumping or disposal of materials other than storm water, and by reducing pollutants in urban storm water discharges to the maximum extent practicable. This chapter is intended to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the federal Clean Water Act by reducing pollutants in storm water discharges to the maximum extent practicable and by prohibiting non-storm water discharges into the storm drain system. The provisions of Chapter 13.18 require that stormwater and associated pollutants be controlled to minimize adverse effects on groundwater and surface water quality. Regulations include the following:

- Eliminating other discharges to the municipal separate storm sewers that do not receive treatment before discharge to waters of the state;

- Controlling the discharge to municipal separate storm drains from spills, dumping, or disposal of materials other than stormwater;

- Reducing pollutants in stormwater discharges to the maximum extent practicable;

- Regulating the amount, pollutants, and timing of stormwater discharges leaving private property that has an on-site stormwater system; and

- Ensuring that the storm drain system is clean and functioning to reduce the amount of stormwater that may enter the sanitary sewer system.

The enforcement official may require controls as appropriate to minimize the long-term, post-construction activity discharge of storm water pollutants from new development(s) or modifications to existing development(s).

Controls may include source control measures to prevent pollution of stormwater, treatment controls designed to remove pollutants from storm water, low-impact development measures, and/or hydro modification measures to offset the difference between the pre- and post-construction peak flow runoff rates and volumes. Proponents of all applicable development and redevelopment projects are required to meet the requirements and design standards specified in the current State of California Phase II MS4 NPDES Permit and as described in further detail in the City's Storm Water Design Standards Manual for New Development and Redevelopment.

The project proponents must assess and evaluate how site conditions, such as soils, vegetation, and flow paths, will influence the placement of buildings and paved surfaces. The evaluation will be used to optimize the site layout to meet the goals of capturing and treating runoff. Each project proponent must submit a map of the project dividing the site into discrete drainage management areas to show in each how runoff will be managed using site design measures, source controls, treatment controls, and hydromodification measures as defined by the current MS4 permit. All site design measures, source controls, treatment controls, and hydromodification measures must be selected, sized, and situated in accordance with the guidance provided in the current MS4 permit and the City's Storm Water Design Standards Manual for New Development and Redevelopment. Documentation of the site's post-construction stormwater design measures must be submitted to the City's Engineering Division for review and approval prior to the commencement of the project.

Project proponents must sign an operation and maintenance agreement in which they legally bind themselves to maintain the installed post-construction design measures in an effective and good operational condition until the property ownership is transferred. A written operation and maintenance plan for the proposed stormwater design measures is required to be submitted to and approved by the City with the signed agreement. The agreement will be recorded with the deed by the County Clerk making it transferrable to the new owner; or, when there are multiple property owners responsible for the maintenance of the control measures, the agreement will consist of a legally binding covenant between the City and the homeowners' association or maintenance district. The owner or association responsible for the maintenance of the control measures may be required by the City to submit an annual self-certification that the storm water control measures are effective and are being maintained in accordance with the submitted and approved operation and maintenance plan.

3.9.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODOLOGY

This analysis relies on various publicly available hydrology and water quality studies, as well as preliminary drainage designs provided in Chapter 7, "Infrastructure and Public Services," of the Whitmore Ranch Specific Plan. Hydrology, drainage, and groundwater-related studies reviewed in support of this analysis include the following:

- *Ceres 2035 General Plan* (City of Ceres 2018),
- *City of Ceres General Plan Update* (Dyett & Bhatia 2016),
- *Turlock Groundwater Basin Groundwater Management Plan* (TGBA 2008),
- *City of Ceres 2015 Urban Water Management Plan* (City of Ceres 2016),
- *City of Ceres Water Management Plan* (West Yost 2011), and
- *Whitmore Ranch Specific Plan Area Phase I Environmental Site Assessment* (AECOM 2016).

Impacts associated with drainage, hydrology, and water quality that could result from construction and operational activities related to buildout of the Specific Plan were evaluated based on expected construction practice, the materials used, and the duration of the activities. The effects of the proposed Specific Plan were compared to environmental baseline conditions (i.e., existing conditions) to determine the duration and magnitude of adverse impacts. Impacts related to water supply are addressed in Section 3.13, "Public Services and Utilities, Including Recreation and Energy."

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, an impact related to hydrology and water quality is considered significant if the proposed project would:

- violate any water quality standards or waste discharge requirements, including NPDES waste discharge or stormwater runoff requirements, State or federal antidegradation policies, enforceable water quality standards contained in the Central Valley RWQCB Basin Plan or statewide water quality control plans, or federal rulemakings to establish water quality standards in California;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a substantial lowering of the level of the local groundwater table;
- 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 or siltation on-site or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- create or contribute runoff water that would exceed the capacity (peak flow) 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 (0.01 AEP) flood hazard area housing, or structures that would impede or redirect flood flows;
- 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; or
- result in inundation by seiche, tsunami, or mudflow.

ISSUES NOT CONSIDERED FURTHER IN THIS EIR

- **Place Housing or Other Structures within a 100-Year Flood Hazard Area—**The proposed Specific Plan would not entail development within a 100-year flood hazard area (FEMA 2008). Thus, there would be no impact, and this issue is not evaluated further in this EIR.

- **Flooding from Levee or Dam Failure**—Based on a review of data contained in the *Stanislaus County General Plan* (Stanislaus County 2015), the Specific Plan Area would not be subject to inundation in the event of failure of Don Pedro Dam, and the proposed Specific Plan would not involve modification of any levees or dams. Thus, there would be no impact related to flooding from a levee or dam failure, and this issue is not evaluated further in this EIR.

- **Inundation by Seiche, Tsunami, Or Mudflow**—Because of the distance of the Specific Plan Area from water bodies, the site would not be expected to be affected by coastal flooding hazards, including tsunami, extreme high tides, or sea level rise. There are no surface water bodies in the vicinity of the Specific Plan Area that could generate damaging seiches (waves generated within enclosed surface water bodies); therefore, no effects are expected. In addition, the Specific Plan Area is relatively flat and no effects related to mudflows would occur. There would be no impact related to seiche, tsunami, or mudflow and these issues are not discussed further in this EIR.

IMPACT ANALYSIS

IMPACT 3.9-1 Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. *Construction activities during Specific Plan implementation would involve grading and movement of earth, which would substantially alter on-site drainage patterns and could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater that could drain to off-site areas and degrade local water quality. In addition, groundwater well abandonment and septic system removal could result in contamination of groundwater. This impact is considered* ***potentially significant****.*

Implementing the proposed Specific Plan would require earthmoving activities for development and installation of utilities. There are no on-site drainage channels. A TID irrigation canal parallels Moore Road, approximately 30 feet west of the Specific Plan Area (AECOM 2016).

Although the Specific Plan Area is level, the potential would exist for erosion to occur during and after construction activities, particularly during the rainy season. Construction activities associated with the proposed Specific Plan, including vegetation removal, grading, staging, trenching, and foundation excavation, would expose soils to erosive forces and could transport sediment into local drainages, thereby increasing turbidity, degrading water quality, and resulting in siltation to local waterways. Intense rainfall and associated stormwater runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could cause sedimentation and blockage of drainage channels. Further, the compaction of soils by heavy equipment may further reduce the infiltration capacity of soils and increase the potential for runoff and erosion.

Non-stormwater discharges could result from activities such as discharge or accidental spills of hazardous substances such as fuels, oils, petroleum hydrocarbons, concrete, paints, solvents, cleaners, or other construction materials. This contaminated runoff could enter the TID irrigation canal west of the Specific Plan Area, which may be ultimately discharged to the San Joaquin River. Erosion and construction-related wastes have the potential to temporarily degrade existing water quality and beneficial uses by altering the dissolved oxygen content, temperature, pH, suspended sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Therefore, if uncontrolled, Specific Plan-related construction activities could violate water quality standards or cause direct harm to aquatic organisms.

Historical research indicates that the Specific Plan Area and adjacent properties have been used to grow various crops or orchards since before the 1930s. Based on its past and current agricultural use and review of previous reports prepared for portions of the Specific Plan Area, the likely presence of organochloride pesticides and other agrochemicals in site soil exists (AECOM 2016:7-2). Certain organochlorine pesticides, such as DDT, can remain persistent in soils and there is the potential for these chemicals to be transported during construction to drainage ways in stormwater runoff.

There are no on-site wells that are part of the City's domestic well system. One private well is located in the northwestern corner of the Specific Plan Area. The presence of additional domestic wells is likely (AECOM 2016:7-2). [2] The water supply wells represent a direct conduit to groundwater and these wells would need to be properly abandoned to avoid contaminating groundwater (AECOM 2016:7-2). These wells can act as a conduit through which contaminants can reach an aquifer if the well casing has been removed, as is often done, or if the casing is corroded. These wells can allow contaminants, such as organochlorine pesticides and construction-related hazardous discharges, to enter groundwater (EPA 2015).

According to records maintained at the Stanislaus County Environmental Health Department, multiple septic tanks are located on the Specific Plan Area (AECOM 2016:7-2). These septic systems and their associated leach fields would require proper waste disposal and backfill to avoid discharge of domestic waste. Although each individual system releases a relatively small amount of waste into the ground, they are a potential contamination source. Septic systems that are improperly sited, designed, constructed, or maintained can contaminate groundwater with bacteria, viruses, nitrates, detergents, oils, and chemicals. Along with these contaminants, are the commercially available septic system cleaners containing synthetic organic chemicals. These cleaners can contaminate water supply wells and interfere with natural decomposition processes in septic systems (EPA 2015).

The Ceres 2035 General Plan Policy 6.F.7 requires appropriate mitigation for grading activities during the rainy season to avoid sedimentation of storm drainage facilities; Policy 4.F.9 requires the use of feasible and practical BMPs to protect receiving waters from the adverse effects of construction activities; and Policies 4.F.3 and 4.F.11 encourage the control of residual pesticides to prevent potential damage to water quality, vegetation, and wildlife.

Construction activities during Specific Plan implementation would involve grading and movement of earth, which would substantially alter on-site drainage patterns and could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater that could drain to off-site areas and degrade local water quality. In addition, groundwater well abandonment and septic system removal could result in contamination of groundwater. Furthermore, construction activities that are implemented without mitigation could violate water quality standards or cause direct harm to aquatic organisms. This impact is considered **potentially significant**.

[2] AECOM performed a visual inspection of the Specific Plan Area on September 21, 2016 during preparation of the Phase I ESA. Several parcels were inaccessible at the time of the site visit; therefore, it cannot be determined with certainty if additional water supply wells are located within the Specific Plan Area.

Mitigation Measures

Mitigation Measure 3.9-1a: Implement Mitigation Measure 3.6-3a (Prepare and Implement a Grading and Erosion Control Plan).

Mitigation Measure 3.9-1b: Implement Mitigation Measure 3.8-2 (Prepare and Implement a Soil and Groundwater Sampling and Remediation Plan and Acquire Appropriate Regulatory Approvals).

Mitigation Measure 3.9-1c: Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices.

Prior to the start of earth-moving activities, each project applicant for a project within the Specific Plan Area shall obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific stormwater pollution prevention plan (SWPPP) at the time the Notice of Intent to discharge is filed. The project applicant shall also prepare and submit erosion and sediment control and engineering plans and specifications for pollution prevention and control to the City of Ceres Engineering Division. The SWPPP shall identify and specify:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques accepted by the City at the time of construction, that would reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from construction sites. These may include, but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;

- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;

- the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;

- the means of waste disposal;

- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;

- personnel training requirements and procedures that would be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and

- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

- Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include, but are not limited to, silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.

- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.

- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

A copy of the approved SWPPP shall be maintained and available at all times on the construction site.

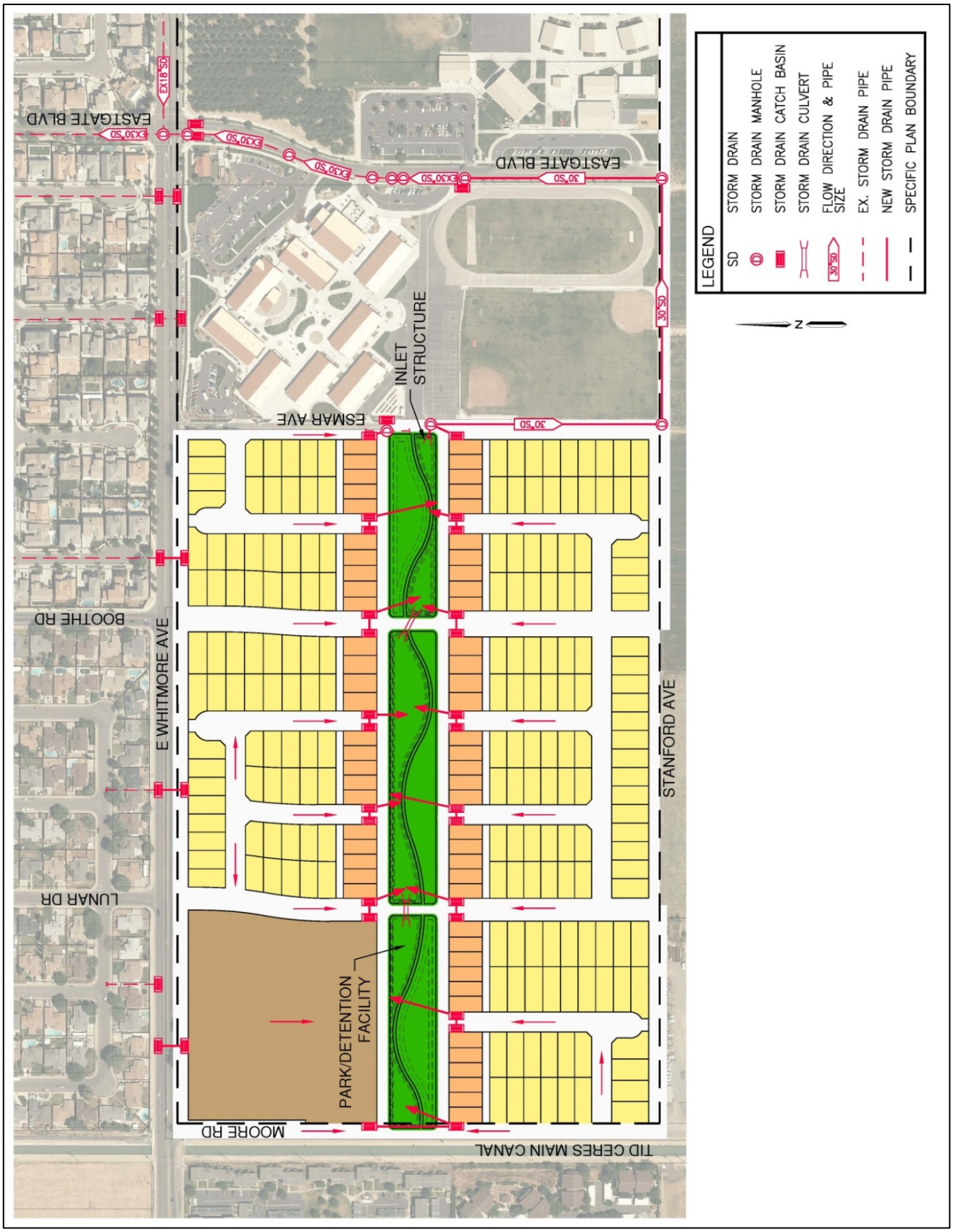
Significance after Mitigation

Implementation of Mitigation Measures 3.9-1a, 3.9-1b, and 3.9-1c would reduce the significant impact from short-term, temporary, construction-related drainage and water quality impacts to a **less-than-significant** level because a grading and erosion control plan and a SWPPP, both containing BMPs specifically designed to prevent erosion and protect water quality, would be prepared, approved by the City of Ceres Engineering Division and the SWRCB, and implemented. These plans are required by law to specify and implement water quality control measures pursuant to the SWRCB NPDES permit for construction activity (Order 2009-0009-DWQ) and the *Waste Discharge Requirements For Storm Water Discharges From Small Municipal Separate Storm Sewer Systems* (SWRCB 2013). Additionally, further evaluation of historical effects on groundwater and implementation of recommended remediation actions will avoid creating preferential pathways for contaminants that could be redistributed during construction.

IMPACT 3.9-2 **Potential Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff.** *Specific Plan implementation would increase the amount of impervious surfaces, thereby increasing surface water runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in a greater potential for on- and off-site flooding. This impact is considered* ***potentially significant.***

The proposed Specific Plan consists of housing with driveways; sidewalks; and supportive infrastructure, including roadway infrastructure. These elements of project construction would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface. This increase in impervious surfaces would increase the peak discharge rate of stormwater runoff generated on the project site.

The portion of the Specific Plan Area west of the schools would need to extend the 30-inch pipeline south on Eastgate Boulevard approximately 550 feet to future Stanford Avenue, then extend the pipe west on future Stanford Avenue to Esmar Road. The park/detention facilities in the Specific Plan Area would drain to the manhole at this location (Exhibit 3.9-2).



Source: O'Dell Engineering 2017

Exhibit 3.9-2 Proposed Storm Drainage Facilities

The proposed central park blocks, which will run from Moore Road at the west end, to Esmar Road at the east end, would be used for stormwater quality treatment and detention (Exhibit 3.9-2).[3] A portion (roughly 1,800 feet long by 35 feet wide) of the central park blocks will be depressed an average of 6 feet to provide the required detention volume. It will have a gentle slope to the east, with culverts under the roadways, in order for the facility to drain to the pipe outfall system. Detention facilities would be designed using a 100-year, 24-hour storm event and would be designed to empty within 48 hours.

The depressed area of the park will be primarily planted with grasses, plants, and trees suitable for use in stormwater management areas, which will provide filtration of the stormwater. Vegetation used for stormwater management would have a high evapotranspiration rate, meaning the roots absorb water out of the surrounding soil and the upper parts of the plants release that water into the air, thus "wicking" water from the soil to the environment. In addition, they would be able to tolerate the regionally generally dry conditions with periodic inundation of water upon the roots and other parts of the plant.

A drainage plan showing the final designs and specifications, including measures designed to protect long-term water quality, as required by the Ceres 2035 General Plan and Chapter 13.18 of the City of Ceres Municipal Code, has not yet been prepared, submitted, or accepted by the City of Ceres. Furthermore, permanent erosion control features, BMPs, and LID techniques, other than the use of the detention basin and vegetation to intercept stormwater, have not yet been finalized. This will occur through design of individual projects within the Specific Plan Area. The impact is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.9-2: Prepare and Submit A Final Drainage Plan and Implement Requirements.

Before the approval of grading plans and building permits, project applicants for projects proposed within the Specific Plan Area shall prepare and submit final drainage plans to the City of Ceres Engineering Division. The drainage plan shall demonstrate that off-site upstream runoff would be appropriately conveyed through the Specific Plan Area, and that Specific Plan-related on-site runoff would be appropriately contained in detention basins or managed through other improvements (e.g., source controls) to reduce flooding and hydromodfication impacts. The plan shall include, but not be limited to, the following items:

- a map dividing the site into discrete drainage management areas to show in each how runoff will be managed using site design measures, source controls, treatment controls, and hydromodification measures as defined by the current MS4 permit.

- site design measures, source controls, treatment controls, and hydromodification measures must be selected, sized, and situated in accordance with the guidance provided in the current MS4 permit and the City's Storm Water Design Standards Manual for New Development and Redevelopment;

- an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods consist with the *City of Ceres Public Works Department Engineering*

[3] The detention basin would function as a Low Impact Development feature. Low Impact Development features improve stormwater quality be encouraging natural processes, which reduce the pollutants in urban runoff, reducing impervious surfaces; and minimizing erosion by capturing low-intensity rainfall events.

Improvement Standards, that accurately evaluates potential changes to runoff, including increased surface runoff;

- runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase;

- a description of the proposed maintenance program for the on-site drainage system;

- identification of specifications for installing drainage systems consist with the *City of Ceres Public Works Department Engineering Improvement Standards*;

- a description of on-site features designed to treat Specific Plan Area or additional areawide development stormwater and maintain stormwater quality before it is discharged; and

- stormwater management BMPs that are designed to limit hydromodification. These may include, but are not limited to, the use of Low Impact Development (LID) techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; and impervious surfaces disconnection);

Per Chapter 13.18 of the City of Ceres Municipal Code, a legally binding operation and maintenance agreement is required for maintenance of the installed post-construction design measures. The agreement shall be recorded with the deed by the County Clerk making it transferrable to the new owner; or, when there are multiple property owners responsible for the maintenance of the control measures, the agreement shall consist of a legally binding covenant between the City and the homeowners' association or maintenance district. The owner or association responsible for the maintenance of the control measures may be required by the City to submit an annual self-certification that the stormwater control measures are effective and are being maintained in accordance with the submitted and approved operation and maintenance plan.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-2 would reduce the significant effect associated with increased risk of flooding and hydromodification from increased stormwater runoff to a **less-than-significant** level because project applicants will demonstrate to the City of Ceres Engineering Division that proposed projects will conform with applicable State and local surface water runoff regulations that were designed to avoid adverse effects.

IMPACT 3.9-3 Long-Term Operational Water Quality and Hydrology Effects from Urban Runoff. *Residential, open space, and related land use changes anticipated under the proposed Specific Plan could result in additional discharges of pollutants to receiving water bodies from nonpoint sources. Such pollutants* could *result in adverse changes to the water quality. This impact is considered* potentially *significant.*

Implementation of the Specific Plan would result in changes to land use, natural vegetation, and infiltration characteristics of the Specific Plan Area and would introduce new sources of water pollutants, thereby 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, all of which can degrade receiving water quality

The potential for long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash) into the stormwater drainage system and ultimate receiving waters would increase compared to existing conditions. However, some contaminants associated with past and existing on-site agricultural activities (e.g., sediment, nutrients, pathogens, and agricultural chemicals) would decrease as these uses are discontinued during Specific Plan implementation. The potential discharges of contaminated urban runoff from paved and landscaped areas would increase and could cause or contribute to adverse effects on water quality in receiving waters. Development would generate urban runoff from streets and driveways. Landscaped areas may produce fertilizer wastes and/or bacterial contamination from animal excrement.

Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a "first flush" of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including the intensity of urban uses, such as vehicle traffic, types of activities occurring on site (e.g., residential vs. commercial), types of contaminants used on site (e.g., pesticides, herbicides, cleaning agents, or petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

Chapter 13.18 of the City of Ceres Municipal Code requires that stormwater and associated pollutants be controlled to minimize adverse effects on groundwater and surface water quality. Regulations includes in Chapter 13.18 include eliminating other discharges to the municipal separate storm sewers that do not receive treatment before discharge to waters of the state; controlling the discharge to municipal separate storm drains from spills, dumping, or disposal of materials other than stormwater; reducing pollutants in stormwater discharges to the maximum extent practicable; regulating the amount, pollutants, and timing of stormwater discharges leaving private property that has an on-site stormwater system; and ensuring that the storm drain system is clean and functioning to reduce the amount of stormwater that may enter the sanitary sewer system.

Storm drains would be incorporated in streets, parks, and open spaces throughout the Specific Plan Area. The proposed central park, which will run from Moore Road at the west end, to Esmar Road at the east end, would be used for stormwater quality treatment and detention (Exhibit 3.9-2). Designs and specifications will need to be submitted to, or approved by the City showing that the drainage facilities would appropriately detain and convey on-site runoff. In addition, BMPs and LID measures designed to control stormwater quality will be designed and specified as specific projects are proposed within the Specific Plan. Implementation of the proposed Specific Plan could result in stormwater runoff and additional discharges of pollutants to receiving water bodies from nonpoint sources. This impact is considered **potentially significant.**

Mitigation Measure

> Mitigation Measure 3.6-3: Develop and Implement a Best Management Practice and Water Quality Maintenance Plan.
>
> Before approval of the final subdivision map for projects proposed within the Specific Plan, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by the project applicant. Drafts of the plan shall be submitted to the City of Ceres Engineering Division for review and approval concurrently with development of the final subdivision maps. The plan shall finalize the water

quality improvements and further detail the structural and nonstructural BMPs proposed for the project. The plan shall include the following elements described below.

- A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features, which shall include final water quality basin sizing and design configuration.

- Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Ceres and including details regarding the size, geometry, and functional timing of storage and release pursuant to the *City of Ceres Public Works Department Engineering Improvement Standards.*

- Source control programs to control water quality pollutants, which may include but are not limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.

- A pond management component for the proposed detention basin that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.

- LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:

    - surface swales;
    - replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement);
    - impervious surfaces disconnection; and
    - trees planted to intercept stormwater.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-3 would reduce the significant effect associated with long-term water quality effects of urban runoff to a **less-than-significant** level because projects proposed within the Specific Plan Area would develop and implement a BMP and water quality maintenance plan that would require preparation of quantitative hydrologic and water quality analysis, demonstrate proposed water quality BMPs meet or exceed requirements established by the City of Ceres, and identify source control programs to control water quality pollutants.

IMPACT 3.9-4 Depletion of Groundwater Supplies and Interference with Groundwater Recharge. *The development of additional Specific Plan-related impervious surfaces would reduce the amount of water available for local groundwater recharge. This impact is considered potentially significant.*

Groundwater recharge commonly occurs along natural stream channels where sand and gravel deposits are present, none of which are present within the Specific Plan Area. Other sources of recharge include deep percolation from applied surface water and precipitation. Induced recharge can occur from recharge basins and injection of water through wells. As discussed in Section 3.6, “Geology, Soils, Minerals, and Paleontological

Resources," the Specific Plan Area is primarily composed of a soil that are classified as hydrologic group C, which indicates a slow infiltration rate when thoroughly wet and low amounts of recharge occur from irrigation and stormwater runoff.

Most of the undeveloped areas of the site are currently used for agriculture (i.e., almond orchards, alfalfa, oats, and rye hay) or are fallow. Agricultural uses represent a potential source of groundwater recharge since irrigation water and stormwater percolates through the soil to the aquifer.

Historical records of groundwater pumped from the on-site private well to meet existing agricultural needs indicate that total average annual production was 156 afy (0.14 mgd) for agricultural use, as compared to a total projected domestic water demand for the proposed project of 214 afy (0.19 mgd) (see Section 3.13, "Public Services and Utilities, Including Recreation and Energy," for further discussion). Comparing the historic water use to the projected domestic water use attributable to the Specific Plan, the proposed Specific Plan would result in an estimated 37-percent increase in groundwater use as compared to the previous agricultural use.

There are no new wells proposed as part of the Specific Plan that would affect groundwater recharge. As discussed in Section 3.13, "Public Services and Utilities, Including Recreation and Energy," the City's Urban Water Management Plan has determined that the water supply is projected to be sufficient to meet demand through 2035 in normal, single-dry, and multiple-dry years (City of Ceres 2016). The water supply demands for the Specific Plan Area (214 afy) were accounted for in water demand projections contained in the City's Urban Water Management Plan (City of Ceres 2016). Therefore, the proposed Specific Plan would not substantially deplete groundwater supplies such that there would be a net deficit in aquifer volume or a substantial lowering of the level of the local groundwater table.

After development of the Specific Plan, much of the Specific Plan Area would consist of impervious surfaces (i.e., roof tops, walkways, patios, driveways, and roadways) that could reduce the amount of water available for local groundwater recharge. As discussed in Impact 3.9-2, the proposed Specific Plan includes LID measures that would allow for groundwater infiltration. The proposed central park blocks, which will run from Moore Road at the west end, to Esmar Road at the east end, would be used for stormwater quality treatment and detention and would also permit excess runoff to percolate through the soil to the groundwater table.

Final designs and specifications for drainage facilities will accompany individual projects proposed within the Specific Plan to show appropriate detention and infiltration stormwater, consistent with pre-project conditions. Implementation of the proposed Specific Plan could reduce percolation to the groundwater basin underlying the Specific Plan Area due to the conversion of irrigated agricultural land to urban land uses, if proper design methods are not used to allow for infiltration. This impact is considered **potentially significant**.

Mitigation Measures

Mitigation Measure 3.9-4a: Implement Mitigation Measure 3.9-2 (Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans).

Mitigation Measure 3.9-4b: Implement Mitigation Measure 3.9-3: (Develop and Implement a Best Management Practice and Water Quality Maintenance Plan).

Significance after Mitigation

Implementation of Mitigation Measures 3.9-4a and 3.9-4b would reduce potentially significant impacts associated with interference of groundwater recharge to a **less-than-significant** level because project applicants for projects proposed within the Specific Plan Area would demonstrate to the City of Ceres Engineering Division that the proposed Specific Plan includes development and implementation of BMPs and LID measures (e.g., the detention basin, plants appropriate for stormwater management) that would help to increase groundwater recharge following project site development.

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3.10 LAND USE AND PLANNING

This section describes the existing land uses and potential land use and planning-related effects associated with Specific Plan implementation on the site and its surrounding area. Descriptions and analysis in this section are based on review of the Ceres 2035 General Plan (2018) and City of Ceres Zoning Code, Stanislaus County General Plan and Zoning Code, and Stanislaus Council of Governments (StanCOG) Regional Transportation Plan (RTP). Consistency with relevant plans is not necessarily a CEQA issue, but can provide helpful background in understanding how potentially significant effects could be mitigated through the implementation of relevant policies (*The Highway 68 Coalition v. County of Monterey, et al.* [6th Dist. 2017] Cal.App.5th).

The relationship between the proposed project and any habitat conservation plans or natural community conservation plans is discussed in Section 3.4, "Biological Resources."

3.10.1 ENVIRONMENTAL SETTING

SPECIFIC PLAN AREA

The Specific Plan Area encompasses approximately 94 acres that is bounded by Whitmore Avenue on the north, Moore Road on the west, and the east side of La Rosa Elementary School on the east. The southern limit of the Specific Plan Area is approximately 1,300 feet south of Whitmore Avenue. Please refer to Exhibit 2-3.

SURROUNDING LAND USES

There are existing single-family residences north of the Specific Plan Area, north of North of Whitmore Avenue, in an area that is in the existing City limits. The area west of Moore Road, just west of the Specific Plan Area, is developed with both multi-family residences and commercial uses that are within the existing City limits.

Areas south and east of the Specific Plan Area consist largely of agricultural production, including commercial almond orchards and open field crops (mainly alfalfa), as well as farm structures, and single-family homes. There is also an existing labeling systems manufacturing facility approximately 1,000 feet south of the Specific Plan Area.

3.10.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws pertaining to topics addressed pertaining to land use planning are applicable to the proposed Specific Plan.

Various federal programs and regulations would indirectly relate to land use, such as the federal and California Endangered Species Acts, U.S. Army Corps of Engineers' enforced wetlands regulations, and other regulations. See Section 3.4 of this EIR, "Biological Resources," which provides detailed information on existing federal biological regulations and ongoing habitat conservation planning efforts.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Local Agency Formation Commissions

In 1963, the California Legislature established local agency formation commissions (LAFCO) in each county and gave them regulatory authority over local agency boundary changes. LAFCOs were created to ensure that changes in governmental organization occur in a manner that provides efficient and good-quality services and preserves open space and natural resources. The general policies of LAFCOs include:

- encourage planned, well-ordered, efficient urban development patterns;
- encourage the logical formation and determination of boundaries;
- ensure that affected populations receive efficient governmental services; and
- guide development away from open space and prime agricultural land uses unless such actions would not promote planned orderly and efficient development.

The Stanislaus LAFCO oversees the establishment or revision of boundaries for local municipalities and independent special districts for Stanislaus County, including any potential future annexation to the City of Ceres of the Specific Plan Area (see discussion below under "Regional and Local Plans, Policies, Regulations, and Ordinances").

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Stanislaus Council of Governments

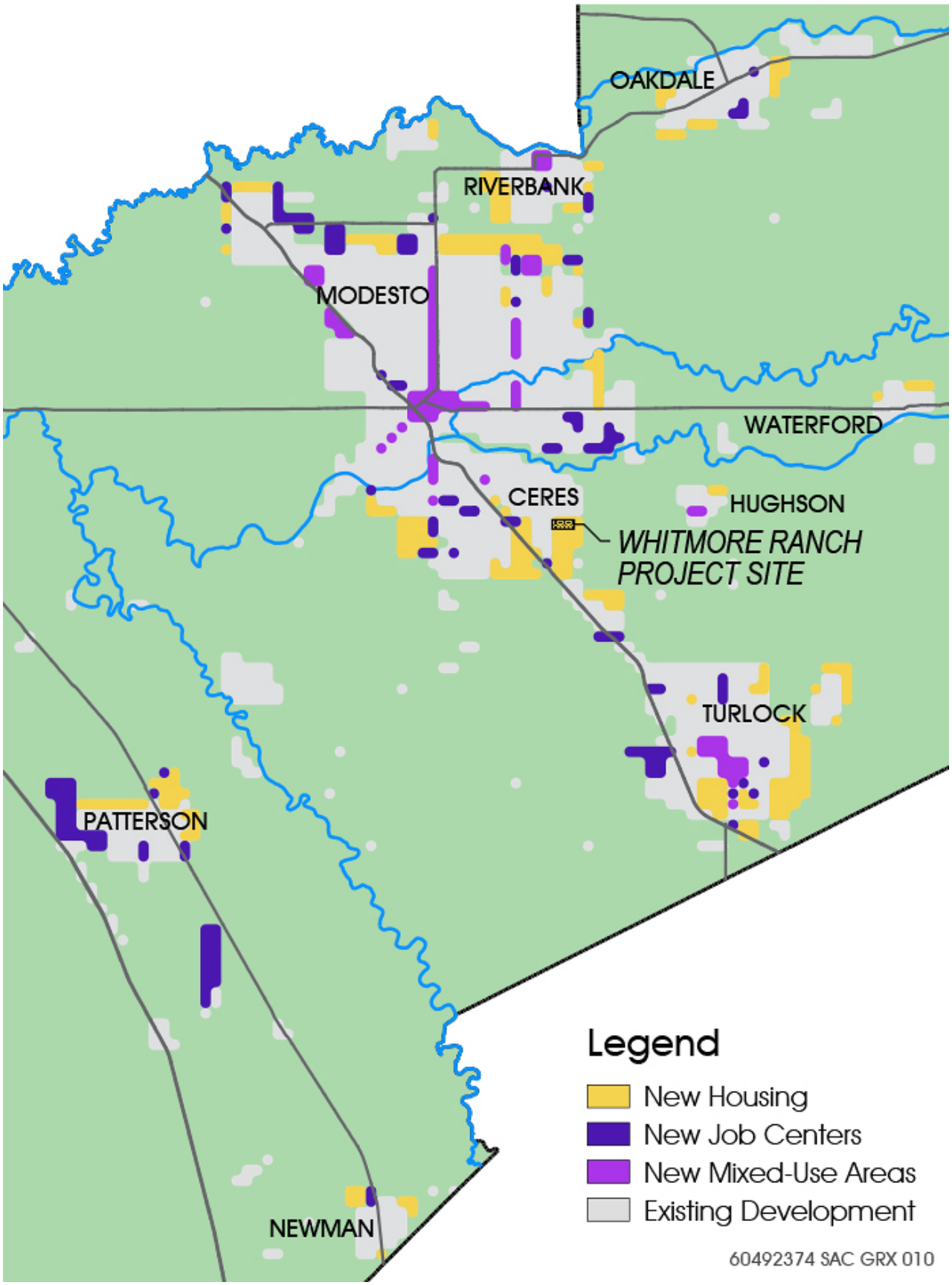
The Stanislaus Council of Governments (StanCOG) is a council of city and county governments comprised of the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford, and the County of Stanislaus, that was established in 1971to address regional transportation issues.

Regional Transportation Plan

The Regional Transportation Plan (RTP) is the region's 25-year planning blueprint for future transportation improvements and investments based on specific transportation goals and objectives (StanCOG 2014). The RTP covers all modes of a complete transportation system, including roadways, transit, bicycle/pedestrian improvements, and aviation. The RTP shows the Specific Plan Area as "New housing" as shown in Exhibit 3.10-1 (StanCOG 2014).

Stanislaus Local Agency Formation Commission

The Stanislaus LAFCO is responsible for coordinating changes in local governmental boundaries, including city, agency, and special district boundaries and spheres of influence. This includes establishing boundaries and spheres of influence for each city and special district within Stanislaus County. The Commission's efforts are directed at seeing that services are provided efficiently and economically while protecting agricultural and open-space lands. As a part of the Specific Plan, the City will apply to LAFCO for annexation.



Source: StanCOG 2014

Exhibit 3.10-1 StanCOG Regional Transportation Plan Preferred Alternative

Stanislaus County General Plan

The County's General Plan provides a blueprint to guide the physical development, preservation, and conservation of areas within the unincorporated areas of the county.

The Stanislaus County General Plan establishes land use designations within the Specific Plan Area. According to the Stanislaus County General Plan, the west (approximately 16 acres) portion of the Specific Plan Area is designated as Commercial, whereas the remainder to the east (including the schools) is designated as Urban Transition.

According to the General Plan, the purpose of the Urban Transition designation is to ensure that land remains in agricultural usage until urban development consistent with a city's (or unincorporated community's) general plan designation is approved. Generally, urban development will only occur upon annexation to a city, but such development may be appropriate prior to annexation provided the development is not inconsistent with the land use designation of the General Plan of the affected city.

The intent of the Commercial designation is to indicate areas best suited for retail, service, and wholesaling operations.

Stanislaus County Zoning Code

According to Stanislaus County, the estimated 16-acre portion on the west is zoned as Planned Development, whereas the larger portion to the east (including the schools) is zoned General Agriculture with a 10-acre minimum lot size (A-2-10). The Agriculture district is intended to support and enhance agriculture as the predominant land use in the unincorporated areas of the county. The Planned Development district is intended to apply to larger scale, integrated development as a means of providing opportunities for creative and cohesive design concepts. Applications for development within the Planned Development zone must be accompanied by a development plan.

City of Ceres 2035 General Plan

The Specific Plan Area lies entirely within the City of Ceres Primary Sphere of Influence and within the City of Ceres' Planning Area. The proposed Specific Plan land uses are included in the Ceres 2035 General Plan Land Use Diagram, which is shown in Exhibit 2-4 (see Chapter 2, "Project Description").

City of Ceres Zoning Code

The Specific Plan Area is outside of the City of Ceres City limits; thus, it does not have a designation.

3.10.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, a land use impact is considered significant if the proposed project would:

- conflict with any applicable habitat conservation plan or natural community conservation plan;
- physically divide an established community; or
- conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, adopted for the purpose of avoiding or mitigating an environmental effect.

The relationship between the proposed project and any habitat conservation plans or natural community conservation plans is discussed in Section 3.4, "Biological Resources." The proposed project's compatibility with nearby airports is discussed in Section 3.8, "Hazards and Hazardous Materials." Thus, this issue is not evaluated further in this section.

ISSUES NOT DISCUSSED FURTHER

- **Divide an Established Community—**Implementing the Specific Plan would not physically divide an established community. There are six existing single-family homes within the Specific Plan Area on lots between approximately ½ acre and 2 acres in land area. To the City's knowledge, these residences are not formally or informally known as a community. The Specific Plan Area is an undeveloped area of the county bordering the City limits. Therefore, this issue is not evaluated further in this EIR.

METHODOLOGY

The Specific Plan was analyzed versus existing, on-the-ground land uses to determine impacts related to land use and planning. The Specific Plan was also compared with a variety of adopted plans, policies, and regulations, with a focus on inconsistencies and conflicts that could relate to a significant environmental impact. Specific indirect impacts associated with land use changes are addressed in each technical section of this EIR, as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects as a result of development of the proposed Specific Plan. This section focuses on any additional impacts related to land use and planning not already fully addressed and mitigated, where appropriate, in other sections of this EIR.

IMPACT ANALYSIS

IMPACT 3.10-1 Inconsistency with Stanislaus County General Plan and Zoning. *The adverse physical environmental effects associated with implementation of the Specific Plan are comprehensively analyzed throughout this EIR. There are no impacts related to inconsistency with the Stanislaus County General Plan that are not already addressed in the topic-specific sections of this EIR. There is* no impact*.*

An EIR must discuss "any inconsistencies between the proposed project and the applicable general plans" (CEQA Guidelines Section 15125 [d]). Table 3.10-1 provides a consistency analysis with the County of Stanislaus General Plan policies, although it should be noted that in order to proceed with development of the Specific Plan, the Specific Plan Area must be annexed to the City of Ceres, due to the Measure E growth control limitation adopted by Stanislaus County voters in February 2008.[1]

1 Under Measure E, land that is designated as agricultural or open space in the County General Plan Land Use Element cannot be amended to residential or rezoned to residential without the approval of a majority of county voters. Measure E is intended to direct residential growth into the incorporated cities, which are more capable of serving such growth. Measure E will remain in effect until December 31, 2036, unless it is otherwise amended by a future voter initiative.

Table 3.10-1. Stanislaus County General Plan Consistency Analysis

Element	Policy Number	Text	Consistency Determination
Land Use	Policy Eleven	Development of residential areas shall be adjacent to existing compatible unincorporated urban development or, in the case of remote development, included as part of a specific plan.	**Consistent:** The Specific Plan Area is adjacent to development and will be included as part of a specific plan. The Specific Plan is proposed to the City of Ceres and not to the County.
	Policy Thirteen	Expansion of urban boundaries of unincorporated communities should be based on infilling and elimination of existing "islands" and should not permit leapfrog development or create new "islands."	**Consistent:** The Specific Plan Area is adjacent to development and will not leapfrog or create new islands. The Specific Plan is within the City's Primary Sphere of Influence and has been long planned for development in the City's General Plan.
	Policy Twenty-One	At least three net acres of developed neighborhood parks, or the maximum number of acres allowed by law, should be provided for every 1,000 residents, through land dedication and development, payment of in-lieu-of fees, or other methods acceptable to the Parks Department.	**Consistent:** At buildout, the proposed Specific Plan is estimated to provide up to 441 housing units. Considering the average household size in Ceres is 3.66, this could total 1,614 residents (DOF 2016). The Specific Plan Area will provide 5.2 acres of parks and open space. However, the County's policy does not apply to the proposed Specific Plan.
	Policy Twenty-Two	Future growth shall not exceed the capabilities/capacity of the provider of services such as sewer, water, public safety, solid waste management, road systems, schools, health care facilities, etc.	**Consistent:** The Specific Plan will not exceed the capabilities of service providers. See Section 3.13, Public Services & Utilities, Including Recreation and Energy, for more information.
	Policy Twenty-Three	New development shall pay its fair share of the cost of cumulative impacts on circulation and transit systems.	**Consistent:** Financing of Specific Plan-related improvements is summarized in Chapter 8 of the Specific Plan.
	Policy Twenty-Four	Development, other than agricultural uses and churches, which requires discretionary approval and is within the sphere of influence of cities or in areas of specific designation created by agreement (e.g., Sperry Avenue and East Las Palmas Corridors), shall not be approved unless first approved by the city within whose sphere of influence it lies or by the city for which areas of specific designation were agreed. Development requests within the spheres of influence or areas of specific designation of any incorporated city shall not be approved unless the development is consistent with agreements with the cities which are in effect at the time of project consideration. Such development must meet the applicable development standards of the affected city as well as any public facilities fee collection agreement in effect at the time of project consideration. (Comment: This policy refers to those development standards that are transferable, such as street improvement standards, landscaping, or setbacks. It does not always apply to standards that require connection to a sanitary sewer system, for example, as that is not always feasible.)	**Consistent:** The Specific Plan is a City project.

As noted above, if the Specific Plan is approved, this area must be annexed to the City in order for development to occur, and would therefore be outside of the County's jurisdiction. There is **no impact**.

Mitigation Measure

No mitigation measures would be required.

IMPACT 3.10-2 Inconsistency with Ceres 2035 General Plan. *The adverse physical environmental effects associated with implementation of the Specific Plan are comprehensively analyzed throughout this EIR. There are no impacts related to inconsistency with the Ceres 2035 General Plan that are not already addressed in the topic-specific sections of this EIR. The impact is considered* less than significant.

As previously stated, the Specific Plan Area does not have a City zoning designation. Pre-zoning would occur at the time of an annexation application to the Stanislaus County Local Agency Formation Commission to annex the Specific Plan into the City of Ceres. Ultimately, the City's Zoning Map would be revised to identify the Specific Plan Areas as a "Planned Community (PC)" zone.

The Ceres 2035 General Plan designates the Specific Plan Area as High-, Medium-, and Low-Density Residential, as well as School and Parks. The Ceres 2035 General Plan guidance was used to develop land use designations for the proposed Specific Plan. Specific Plan designations are consistent with the Ceres 2035 General Plan direction, but may make some adjustments based on parcel sizes, parcel configurations, and the need to incorporate open space, access, and circulation. In addition, part of the portion designated as residential is now used by the schools.

Table 3.10-2 provides a consistency analysis with the City of Ceres General Plan policies.

Table 3.10-2. Ceres 2035 General Plan Consistency Analysis

Number	Text	Consistency Determination
2.A.2	Prioritize growth within the Ceres Sphere of Influence. Permit development outside of the Sphere of Influence only when there is a demonstrated need for additional land and there is less than a five-year supply of appropriately-designated land within the existing Sphere of Influence, in accordance with Stanislaus Local Agency Formation Commission (LAFCO).	**Consistent:** The Specific Plan is located within the City's SOI.
2.A.3	Promote compact development patterns, mixed land uses, and higher-development intensities and limit "leap frog" development to conserve agricultural land, reduce vehicle trips, and improve air quality.	**Consistent**: The Specific Plan is envisioned in the 2035 General Plan Land Use Diagram (Figure 2-3) for residential development in a mix of densities, along with schools and parks. The Specific Plan is adjacent to existing urban development to the north and west. Part of the Specific Plan Area is already urbanized; agricultural activities could continue on the remaining portion until the Specific Plan Area is built out. In addition, the Specific Plan is identified in the 2035 General Plan (Figure 2-2) as containing several "Potential Opportunity Sites" for future development.
2.I.1	Approve annexations only after City approval of an appropriate area-wide plan (e.g., master plan, specific plan) that addresses land use, circulation, housing, infrastructure, and public facilities and services, based on the City's	**Consistent:** The Specific Plan indicates the locations of residential uses at a variety of densities, parks, schools, streets, bikeways, walkways, and infrastructure and other adjacent community uses.

Table 3.10-2. Ceres 2035 General Plan Consistency Analysis

Number	Text	Consistency Determination
	annexation policy, while also adhering to the policies of the General Plan. Exceptions to this requirement for area-wide plans include annexations of: • Existing developed areas; • Areas of less than five acres; and • Housing developments for very-low and low-income households.	Specific Plan roadways have been designed to extend the City's roadway system to connect this new neighborhood with existing neighborhoods, as well as provide connectivity to planned development areas to the south. Infrastructure has been designed to be consistent with Sewer, Water, and Drainage Master Plans. Refer to Chapter 4 of the Specific Plan for allowable land use and community design guidance, including compatibility (with adjacent residential and agricultural uses), parks, and design guidelines for public and private development, including landscaping. See Chapter 5 Plan for details on Specific Plan Area circulation facilities, including pedestrian and bicycle pathways. See Chapter 7 for information of infrastructure and public services. See Chapter 8 for the administration, implementation, and financing of Specific Plan improvements, including phasing and financing of infrastructure and public services to serve development in the Specific Plan Area, consistent with anticipated market demand.
2.I.2	Use area-wide plans (i.e., master plans or specific plans) to comprehensively plan for new neighborhood developments. Each residential area-wide plan should at minimum address the following: • The distribution, location, and extent of land uses, including standards for land use intensity. • Compatibility of new development with adjacent existing and proposed development. • Provision of a range of housing types to ensure socially and economically integrated neighborhoods based on the Housing Element projections of housing needs. • Distribution and location of roadways, including design standards for and the general alignment of arterial and collector streets. Specific provisions for local streets and bikeways should be shown, where necessary. • Provisions for the extension of the existing city roadway system into new development areas. New development shall be linked to adjacent existing neighborhoods and planned neighborhoods. • Distribution and location of and specifications for sewer, water, and drainage facilities needed to serve new development and future development areas consistent with the Sewer, Water, and Drainage Master Plans, including reservations for needed wells and storage areas. • Distribution and location of neighborhood commercial centers, parks, schools, and other public- and quasi-public facilities.	**Consistent**: See determination above for Policy 2.I.1.

Table 3.10-2. Ceres 2035 General Plan Consistency Analysis

Number	Text	Consistency Determination
	• Provisions for linking residential neighborhoods, parks, schools, shopping areas, and employment centers through a system of pedestrian and bicycle pathways. • Design guidelines for all new public and private development, including landscaping, roadway frontage treatment, subdivision identification signs and monuments, and walls and fences. • Provisions for development phasing to ensure orderly and contiguous development consistent with infrastructure expansions and anticipated market demand. • Provisions for minimizing conflicts between new development and adjacent agricultural uses. • Implementation measures necessary to carry out the plan, including a program for financing public infrastructure improvements.	
2.A.12	Integrate transportation and land use to plan for well-connected neighborhoods with safe and convenient vehicle, pedestrian, bicycle, and transit accessibility.	**Consistent:** The Specific Plan includes objectives to provide safe and appropriate bicycle and pedestrian connections and access to adjacent bicycle, pedestrian, and transit facilities in Chapter 5, "Circulation" of the Specific Plan.
2.J.1	Require compatibility between urban development and airport facilities to ensure the availability of local air transportation services and a quality living environment.	**Consistent:** Consistency with the Airport Land Use Compatibility Plan is described under Impact 3.8-4.
2.J.5	Require Avigation Easement Dedication, Recorded Deed Notice, and Real Estate Disclosure as required by the Stanislaus County Airport Land Use Compatibility Plan.	**Consistent:** Consistency with the Airport Land Use Compatibility Plan is described under Impact 3.8-4.

As shown in Table 3.10-2, implementation of the proposed project would be consistent with the City General Plan policies. The impact is considered **less than significant**

Mitigation Measure

No mitigation measures would be required.

IMPACT 3.10-3 Potential Inconsistency with the RTP. *The Specific Plan is consistent with the RTP. The impact is considered* less than significant.

The preferred scenario identified in the RTP anticipates development of new housing within the Specific Plan Area. Development under the Specific Plan is consistent with this regional scenario. The impact is considered **less than significant.**

Mitigation Measure

No mitigation measures would be required.

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3.11 NOISE AND VIBRATION

3.11.1 NOISE AND VIBRATION FUNDAMENTALS

Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise.[1]

The perception of sound is subjective and can vary substantially from person to person. Noise can be generated by a number of sources, including mobile sources (transportation sources) such as automobiles, trucks, and airplanes, and stationary sources (non-transportation noise sources) such as construction sites, machinery, and commercial and industrial operations. Common sources of environmental noise and noise levels are presented in Exhibit 3.11-1.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. The decibel (dB) scale was introduced to provide a more practice way of expressing the range of sound pressures.[2] The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). Expressing sound levels in terms of dBA can help predict community response to noise.

For the purposes of this report, all sound levels are in terms of A-weighted decibels unless specifically stated otherwise.

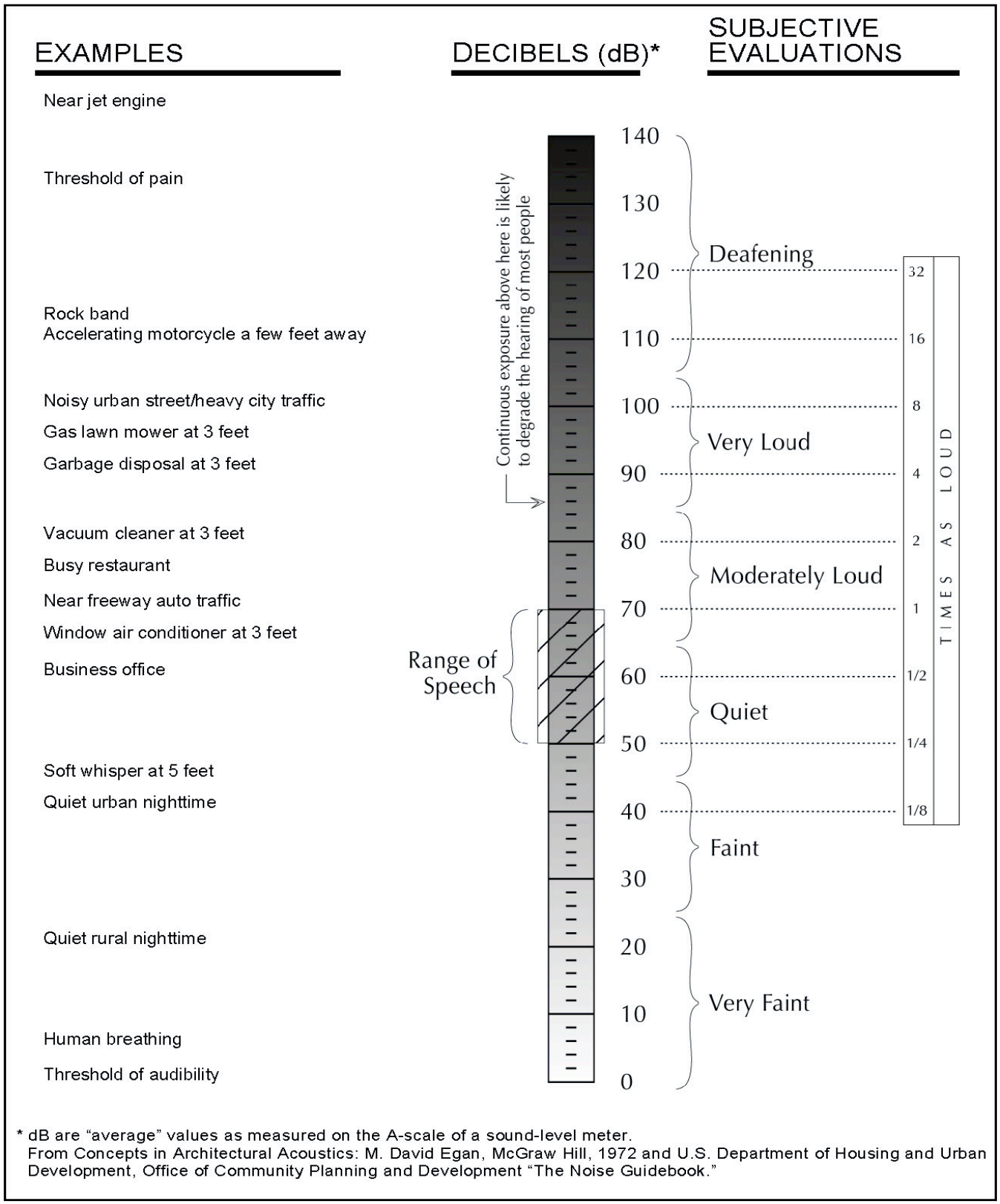
As acoustic energy propagates between the source and receiver, noise levels attenuate (decrease) as a function of the distance from the source (divergence), ground absorption, atmospheric conditions, and the presence of physical barriers. A noise barrier may be any natural or human-made feature such as a hill, tree, building, wall, or berm.[3]

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1 A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz (Hz), which is equivalent to one complete cycle per second.

2 A sound level expressed in decibels is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air the standard reference quantity is generally considered to be 20 micropascals (µPa), which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the million-fold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy.

3 Noise from mobile sources generally is attenuated at a rate of 3 dB (hard surfaces, such as asphalt) to 4.5 dB (soft surfaces, such as grasslands) per doubling of distance. Acoustic energy from stationary sources propagates over a spherical area, and is attenuated at a rate of 6 dB (hard surfaces) to 7.5 dB (soft surfaces) per doubling of distance. Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may affect the propagation of noise and levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels. The amount of noise level reduction or "shielding" provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency content of the noise source. Natural barriers such as berms, hills, or dense woods, and human-made features such as buildings and walls may be used as noise barriers. The actual amount of attenuation depends on the barrier size and frequency of the sound.



Source: AECOM 2010

Exhibit 3.11-1 Common Noise Sources and Levels

NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below.

- *L_{max} (Maximum Noise Level):* The maximum instantaneous noise level during a specific period of time.
- *L_n (Statistical Descriptor):* The noise level exceeded n% of a specific period of time. For example, L_{50} is the median noise level, or level exceeded 50% of the time.
- *L_{eq} (Equivalent Noise Level):* The average noise level. The L_{eq} represents an average of the sound energy occurring over a specified time period. In effect, the L_{eq} is the steady-state sound level containing the same acoustic energy as the time-varying sound that actually occurs during the same period. The 1-hour, A-weighted equivalent sound level (L_{eq}[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period.
- *SEL (Sound Exposure Level):* The equivalent sound level over a 1-second time interval for a discrete sound event (e.g., aircraft overflight).
- *L_{dn} (Day-Night Average Noise Level):* The 24-hour L_{eq} with a 10 dB "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dB is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- *CNEL (Community Noise Equivalent Level):* The CNEL is similar to the L_{dn} described above, but with an additional 5-dB "penalty" added to noise events that occur during the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading, and other activities that could be disrupted by noise. When the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dB higher than the L_{dn}.

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 1 hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and shows very good correlation with community response to noise.

HUMAN RESPONSE TO NOISE

Excessive and chronic exposure to elevated noise levels can result hearing loss at very high levels and interference with communications, sleep, and learning.[4] The degree to which noise results in annoyance and

[4] The non-auditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

interference is highly subjective and may be influenced by several non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be to the new noise source.

Generally, a 1-dB increase in noise level is imperceptible, a 3-dB increase is barely perceptible, a 6-dB increase is clearly noticeable, and a 10-dB increase is perceived as approximately twice as loud (Egan 1988: 21).[5] A noise level increase of 3 dB or more is typically considered a substantial degradation of the ambient noise environment.

FUNDAMENTAL NOISE CONTROL OPTIONS

Any noise problem is composed of three basic elements: noise source; transmission path; and receiver. The appropriate acoustical treatment for a given project considers the nature of the noise source and the sensitivity of the receiver. The problem may be defined in terms of appropriate criteria (L_{dn}, L_{eq}, or L_{max}), location of the sensitive receiver (inside or outside), and time that the noise occurs (daytime or nighttime). Noise control techniques may then be selected to provide an acceptable noise environment for the sensitive receiver, while remaining consistent with local aesthetic standards and practical structural and economic limits. Description of potential noise control options are provided below.

Setbacks

Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Examples of setback areas applicable to development projects can take the form of open space, wetlands, recreational areas (e.g., parks), and storage yards. The available noise attenuation from this technique is limited by the characteristics of the noise source but is generally between 4–6 dB.

Site Planning and Design

Thoughtful site planning and design can address noise exposure issues, while avoiding the additional up-front and ongoing maintenance expense of barriers. For example, buildings can shield outdoor gathering areas from intruding noise and prevent an increase in noise levels attributable to surface reflections. Site design should account for building placement to avoid creating reflecting surfaces that may increase on-site noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dB. The open end of U-shaped buildings should point away from noise sources for the same reason.

Provided a transportation network that distributes rather than concentrates traffic can address transportation noise issues. With a highly connected and distributed transportation network, no single route would experience high traffic volumes, which can help to address land use/noise compatibility issues.

[5] These reactions to changes in noise levels was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 dB to 70 dB, as this is the usual range of voice and interior noise levels.

Noise Reduction by Building Façades

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through detailed acoustical design of building façades. Standard construction practices provide an interior to exterior noise reduction of 10–15 dB for building façades with doors and windows open and a noise reduction of approximately 25 dB when doors and windows are closed. Thus, an exterior-to-interior noise reduction of 25 dB can be obtained with adequate ventilation systems that allow windows to remain closed under any weather condition.

Acoustical treatment of the building façades can achieve even greater noise reduction. Reducing window surface area of building façades is the most effective control technique followed by providing acoustical glazing (thicker glass or increased air space between panes) in frames with low air infiltration rates, using fixed (non-movable) acoustical glazing, or eliminating windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members through the use of double or staggered stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways can be provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets. Roof treatments can also reduce noise by increasing the mass of plywood sheathing under roofing materials.

Use of Vegetation

Trees and other vegetation are often considered by the public to provide noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve 5 dB attenuation of traffic noise. Vegetation can be used to acoustically "soften" intervening ground between a noise source and a receiver, by increasing ground absorption of sound and thus increasing the attenuation of sound with distance. Planting trees and shrubs also offers aesthetic and psychological value that could reduce adverse public reaction to a noise source by removing the source from view.[6]

Barriers

Shielding by barriers can be obtained by placing walls, berms, or other structures (e.g., buildings) between the noise source and the receiver. The effectiveness of a barrier depends on the ability to block the line of sight between the source and receiver. Effectiveness is improved when sound must travel a longer distance to pass over the barrier than if it were traveling in a straight line from source to receiver.[7] Barrier effectiveness also depends upon the relative heights of the source, barrier, and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path length difference for a given increase in barrier height than does a location closer to either source or receiver.

There are practical limits to the noise reduction provided by barriers. For vehicle traffic or railroad noise, a noise reduction of between 5–15 dB[8] may often be reasonably attained. Noise barriers within a development may

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6 It should be noted, however, that trees planted on the top of a noise-control berm can actually slightly degrade the acoustical performance of the barrier by diffracting (bending) noise over a barrier. Typically, evergreen trees acoustically perform better than broad leaf foliage, which could act as a reflective surface.

7 The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference" and is the basis for calculating barrier noise reduction.

8 A properly designed fence or wall can also provide visual and acoustical separation between noise sources and adjacent land areas. This method can reduce noise as much as 15 dBA. https://www.fhwa.dot.gov/Environment/noise/noise_compatible_planning/federal_approach/audible_landscape/al04.cfm

inadvertently reflect noise back to a noise-sensitive area unless located carefully and complemented with landscaping materials.[9]

Earth, in the form of berms or the face of a depressed area, is also an effective barrier material. The use of an earth berm in lieu of a solid wall may provide up to 3 dB additional attenuation over that attained by a solid wall alone because of the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls alone and they are often preferred for aesthetic reasons. Often, berm/wall combinations are used.

VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels are depicted in terms of amplitude and frequency relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (Federal Transit Administration [FTA] 2006: 7-1 – 7-8, California Department of Transportation [Caltrans] 2004: 5-7). PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response to vibration. The response of the human body to vibration relates well to average vibration amplitude. Therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity. Similar to airborne sound, vibration velocity can be expressed in decibel notation as vibration level (VdB).[10]

Typical outdoor sources of perceptible groundborne vibration include construction equipment, steel-wheeled trains, and traffic on rough roads. Although the effects of vibration may be imperceptible at low levels, moderate and high levels of vibration may be detectible and produce damage to nearby buildings (e.g., loosening and cracking of plaster or stucco coatings). The range of vibration that is relevant to this analysis occurs from approximately 50 VdB, which is the typical background vibration level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings (FTA 2006:8-1 – 8-8).

[9] For maximum effectiveness, barriers must be continuous and airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 pounds per square foot, although a lesser mass may be acceptable if the barrier material will still ensure that a substantial amount of transmission loss does not occur. Satisfaction of the above criteria requires substantial and well-fitted barrier materials placed to intercept the line of sight to all substantial noise sources.

[10] Just as with noise levels, the logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration.

3.11.2 ENVIRONMENTAL SETTING

EXISTING NOISE SOURCES

The existing noise environment in the vicinity of the project site is influenced primarily by surface transportation, and agriculture equipment operations, but also includes contributions from distant train, and aircraft operations.

NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are those uses for which quiet is an essential element of the purpose of the subject land use. Residential uses are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Schools, places of worship, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. Parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels.

Off-Site Sensitive Land Uses

Noise-sensitive land uses in the vicinity of the project site include Cesar Chaves Junior High School and La Rosa Elementary School to the west, residences on adjacent properties to the north and west of the project site, as well as residences at a greater distance to the south and east of the project site.

On-Site Sensitive Land Uses

Noise-sensitive land uses within the project site include residences to the north, northwest, and west of the project site.

Ambient Noise Level Survey

Ambient noise surveys were conducted on September 12–14, 2016 to document the noise environment and noise sources. Dominant sources of ambient noise identified in the ambient noise sources consisted of local and distant traffic, and natural sources (wind, birds, etc.).[11] Ambient noise level survey locations are shown in Exhibit 3.11-2. The results at each ambient noise level measurement location are summarized in Table 3.11-1. Average daytime hourly noise levels documented during the 24-hour measurements ranged from approximately 52 to 59 dB L_{eq}, with maximum noise levels between 73 and 91 dB L_{max}.

Roadway Traffic

Vehicle traffic noise levels in the vicinity of the Specific Plan Area are attributed primarily to Whitmore Avenue, Mitchell Road, and Moore Road. Existing vehicle traffic noise levels in the vicinity of the Specific Plan Area were modeled using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model

[11] Short-term 15-minute and continuous 24-hour long-term measurements of ambient noise levels were taken in accordance with applicable ANSI standards at four locations using Larson Davis Laboratories (LDL) Models 820 and 824 precision integrating sound level meters. The sound level meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure measurement accuracy. The equipment used meets all pertinent ANSI specifications for Class 1 sound-level meters (ANSI S1.4-1983[R2006]).

Table 3.11-1. Summary of Ambient Noise Level Survey Results – September 12 – 14, 2016

Site	Noise Sources	Date		Start Time	Duration	Average Measured Hourly Noise Levels, dB				
						Daytime (7 a.m.-10 p.m.)		Nighttime (10 p.m.-7 a.m.)		L_{dn}
						L_{eq}	L_{max}	L_{eq}	L_{max}	
LT-01	Front Yard, 3548 East Whitmore Avenue, Ceres, CA 95307	Sept. 12	Sept. 14	18:00	18:00	58.8	90.6	54.5	83.2	61.9
LT-02	Middle of Specific Plan Area, Agricultural Land, 3340 East Whitmore Avenue, Ceres, CA 95307	Sept. 12	Sept. 14	19:00	19:00	51.5	73.2	50.9	75.4	57
ST-01	Daycare Play Ground, La Rosa Elementary School, 2800 East Gate Boulevard, Ceres, CA 95307	Sept. 14		15:00	20 Minutes	59.0	79.2	NA	NA	NA
ST-02	Vacant Land south of East Whitmore Avenue, across from 3802 Old Oak Drive, Ceres, CA 95307	Sept. 14		16:00	15 Minutes	66.8	89.4	NA	NA	NA
ST-03	By the vacant Land east of Moore Road, 2602 Moore Road, Ceres, CA 95307	Sept. 14		16:00	15 Minutes	65.0	78.6	NA	NA	NA
ST-04	By Backyard of 3230 East Whitmore Avenue, Ceres, CA 95307	Sept. 14		16:00	15 Minutes	55.9	62.8	NA	NA	NA
ST-05	Corner of Agricultural Land east of Moore Road, by 3230 East Whitmore Avenue, Ceres, CA 95307	Sept. 14		17:00	20 Minutes	57.1	67.8	NA	NA	NA

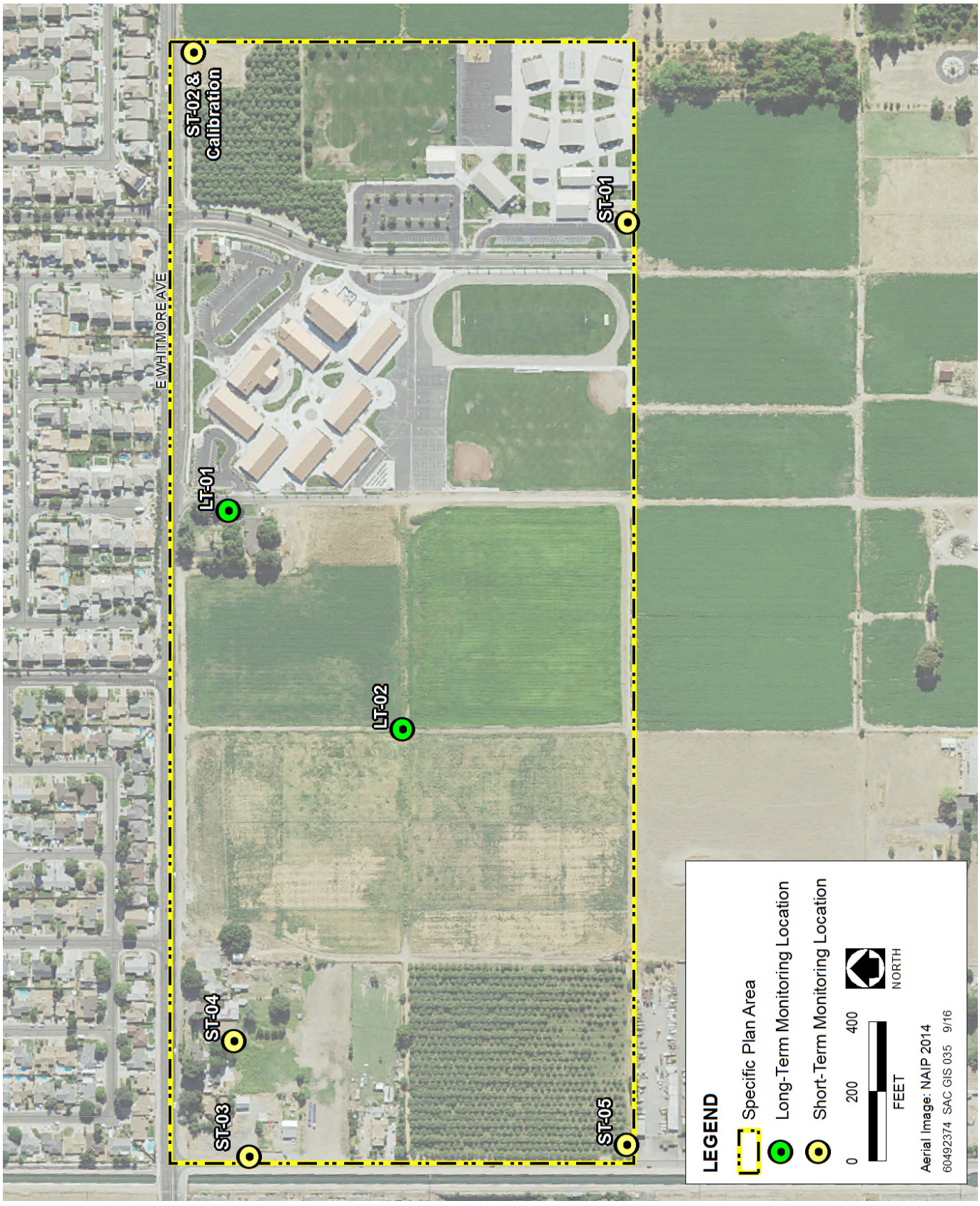
Notes: L_{dn} = Day-Night Average Noise Level; dB = A-weighted decibels; L_{eq} = Equivalent Noise Level; L_{max} = maximum instantaneous noise level during a specific period of time; ST= Short Term; LT= Long Term; NA = Not Applicable

Source: Data compiled by AECOM in 2016

(FHWA-RD-77-108) using data from the traffic study prepared to support this EIR (KD Anderson & Associates Inc., 2018).[12]

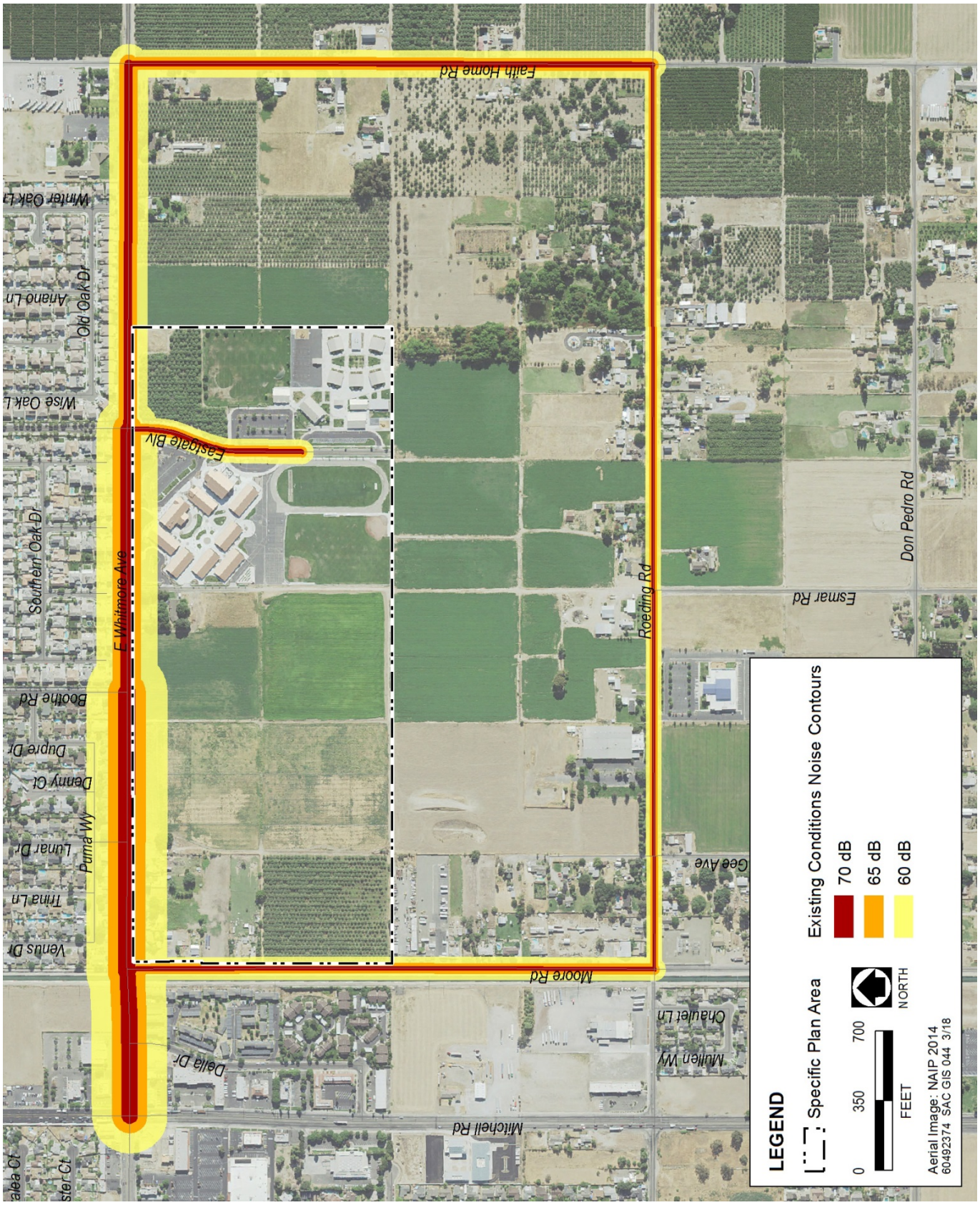
Table 3.11-2 summarizes the modeled traffic noise levels, provides noise levels at 50 feet from the centerline of roadways that could be affected by the Specific Plan, and lists distances from the roadway centerlines to the 60 dB, 65 dB, and 70 dB L_{dn} traffic noise contours. Exhibit 3.11-3 shows the traffic noise contours for roadways in the vicinity of the Specific Plan Area. These traffic noise modeling results are based on existing average daily traffic (ADT) volumes obtained from the traffic impact study for the project (KD Anderson & Associates Inc., 2018). As shown in Table 3.11-2, the location of the 60 dB L_{dn} contour ranges from 9 to 204 feet from the centerline of the modeled surface street roadways. The extent to which noise sensitive uses are affected by existing traffic noise depends on their respective proximity to the roadways, their individual sensitivity to noise, and the presence of intervening structures.

[12] The FHWA model is based on CALVENO reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receptor, and ground attenuation factors.



Source: Adapted by AECOM in 2016

Exhibit 3.11-2 Ambient Noise Measurement Sites



Source: AECOM 2018

Exhibit 3.11-3 Existing Traffic Noise Levels

Table 3.11-2. Traffic Noise Contours – Existing Conditions

Roadway	Roadway Segment	dB, L_{dn} at 50 feet	Distance to Contours, feet		
			70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Whitmore Avenue	From Mitchell Road to Della Drive	69	41	88	190
Whitmore Avenue	From Della Drive to Moore Road	69	41	88	190
Whitmore Avenue	From Moore Road to Boothe Road	69	44	95	204
Whitmore Avenue	From Boothe Road to Eastgate Boulevard	67	33	72	154
Whitmore Avenue	From Eastgate to Faith Home Road	64	21	46	98
Faith Home Road	From Whitmore Avenue to Roeding Road	62	15	32	69
Eastgate Boulevard	From Whitmore Avenue to South of Whitmore Ave	61	13	28	61
Moore Road	From Whitmore Avenue to Roeding Road	61	12	27	58
Roeding Road	From Moore Road to Faith Home Road	59	9	19	40

Notes: dB = A-weighted decibels; L_{dn} = Day-Night Average Noise Level; SR = State Route
Source: Modeling conducted by AECOM in 2018

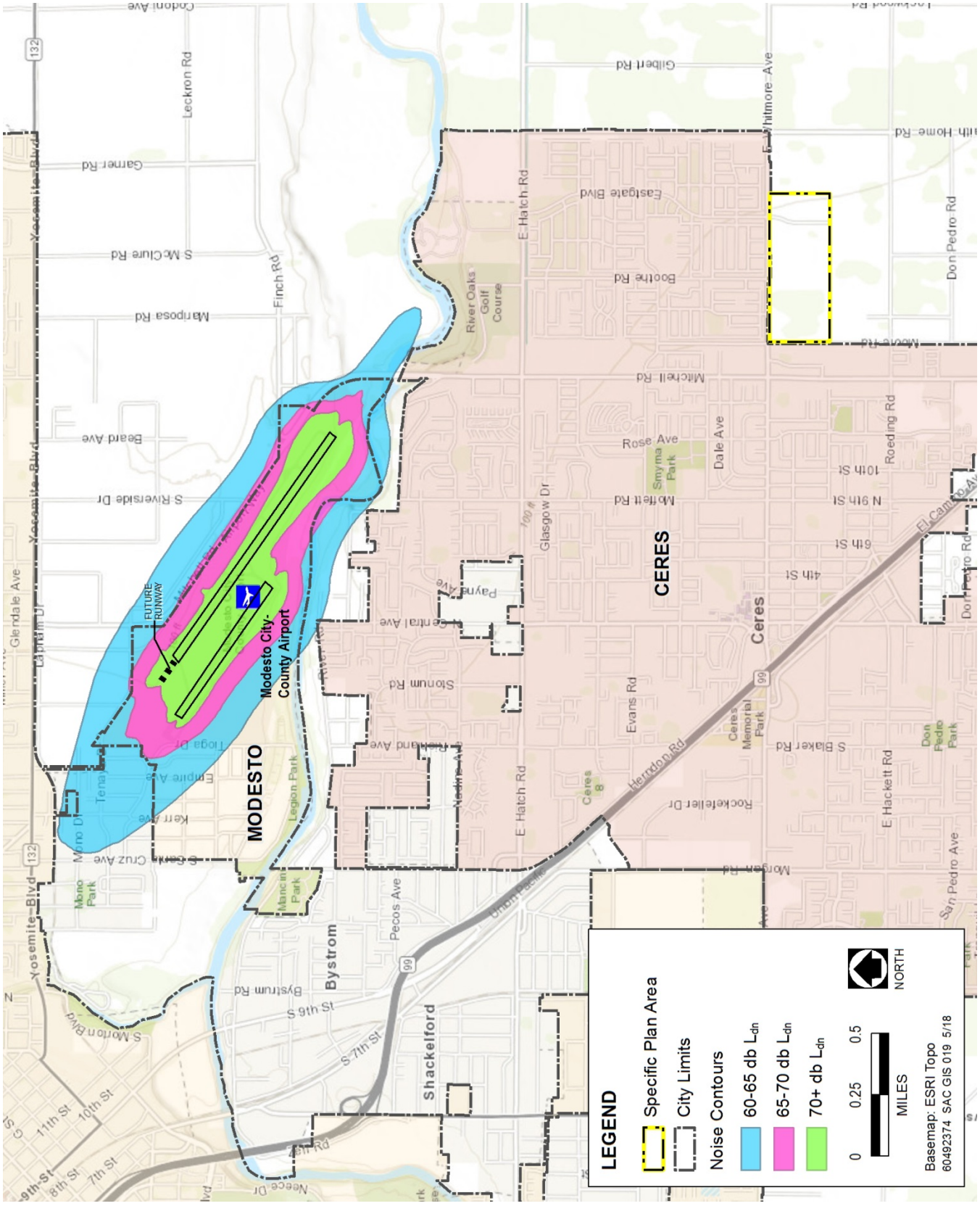
Aircraft Sources

The Specific Plan Area is located immediately 1.8 miles southeast of Modesto City–County Airport, as measured at the closest point. Airports that are either public or serve a scheduled airline are required to have a comprehensive land use plan (CLUP) prepared by the airport land use commission (ALUC). The purpose of ALUC is to:

- protect public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of noise; and
- prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of these airports into the future.

The adoption and implementation of a CLUP embody the land use compatibility guidelines for height, noise, and safety. The Stanislaus County is the ALUC for the Cities of Modesto, Oakdale, and Crows Landing. The latest noise contours for Modesto City–County Airport are presented in Exhibit 3.11-4.

Exhibit 3.11-4 shows the noise contours associated with Modesto City–County Airport current operations. These noise level contours represent expected future use of Modesto City-County Airport and are appropriate for use in land use planning in the vicinity of Modesto City–County Airport.



Source: Stanislaus County 2014

Exhibit 3.11-4 Modesto City–County Airport Noise Contours

Stationary Sources

From a land use planning perspective, there are typically two basic goals relative to noise:

1. prevent the introduction of new uses that will produce excessive noise in noise-sensitive areas; and
2. prevent encroachment of noise-sensitive uses on existing facilities that produce excessive noise.

The first goal may be achieved by applying noise performance standards to proposed new uses that produce noise. The second goal may be achieved by requiring new noise-sensitive land uses to ensure compliance with noise performance standards when proposing to locate near existing facilities that produce noise.

There is existing agricultural land to the east and south of the Specific Plan Area. Noisiest agricultural equipment, such as tractors, can generate noise levels of 84 dB L_{max} and 80 dB L_{eq} at a distance of 50 feet (FHWA 2006).

EXISTING VIBRATION

The existing vibration environment, similar to that of the noise environment, is dominated by transportation-related vibration from roadways and the railroad in the Specific Plan Area. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the right-of-way.

Vibration caused by train passage can be much greater than that caused by motor vehicles. Vibration levels vary greatly depending on length and speed of individual trains. Vibration levels of a typical train passage are approximately 78 VdB at 100 feet (FTA 2006: 10-3).

3.11.3 REGULATORY FRAMEWORK

Various public agencies and professional groups have established noise guidelines and standards to protect citizens from potential hearing damage and other adverse physiological and social effects associated with noise and vibration. Although many of the referenced standards would not directly apply to the Specific Plan or development projects entitled under the Specific Plan, the research conducted to support the referenced standards helps to frame the impact analysis provided at the end of this section.

FEDERAL PLANS, GUIDELINES, POLICIES, REGULATIONS, AND LAWS

Environmental Protection Agency

The U.S. Environmental Protection Agency's (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed by state and local governments.

Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments.[13]

U.S. Department of Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD), in its efforts to "provide decent housing and a suitable living environment for all Americans," has established an "acceptable" exterior noise exposure limit, compatible with residential uses, of 65 dB L_{dn} or less. HUD has established an interior noise exposure limit of 45 dB L_{dn}.

Acoustical Society of America/American National Standards Institute

The Acoustical Society of America (ASA) develops, maintains, and revises its American National Standards on Acoustics in accordance with the procedure approved by the American National Standards Institute (ANSI). The use of American National Standards is completely voluntary (ANSI 2002:1). Table 1 of ANSI S12.60-2002 establishes an interior noise level standard of 35 dB L_{eq} for core learning spaces.[14]

Federal Transit Administration

To address human response to groundborne vibration, FTA has guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines recommend 65 VdB for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities), 80 VdB for residential uses and buildings where people normally sleep, and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices). These levels are calculated based on the measured RMS velocity amplitude relative to a reference velocity amplitude of 1 micro-inch per second (μin/sec) (FTA 2006:8-3).

STATE PLANS, GUIDELINES, POLICIES, REGULATIONS, AND LAWS

State of California

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation, as well as sound and impact insulation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn}, with windows closed, in any habitable room for residential uses.

The *State of California General Plan Guidelines 2003*, published by the California Governor's Office of Planning and Research (OPR), provides guidance for the compatibility of projects within areas of specific noise exposure. Table 3.11-3 presents acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

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[13] However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies, allowing more individualized control for specific issues by designated federal, state, and local government agencies.

[14] Core learning spaces are defined by ASA as spaces for educational activities where the primary functions are teaching and learning and where good speech communication is critical to a student's academic achievement (ANSI 2002:4–5).

Table 3.11-3. State of California Land Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (CNEL/L_{dn}, dB)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential-Multiple Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes: CNEL = Community Noise Equivalent Level; L_{dn} = Day-Night Average Noise Level; dB = A-weighted decibels

[1] Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4] New construction or development should generally not be undertaken.

Sources: State of California, Governor's Office of Planning and Research, 2003:244-254

CEQA Guidelines

The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. CEQA asks whether the proposed project would 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 ground-borne vibration or ground-borne 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 the 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, would the project expose people residing or working in the project area to excessive noise levels?

- For a project in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

2016 California Building Code

The development of new dormitory, apartment and other multi-family housing types, other than detached single family dwellings are subject to the environmental noise limits set forth in the 2016 California Building Code (Chapter 12, Appendix Section 1207.11.2). The noise limit is a maximum interior noise level of 45 dBA L_{dn}/CNEL. Where exterior noise levels exceed 60 dBA L_{dn}/CNEL, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

California Department of Transportation

For the protection of fragile, historic, and residential structures, Caltrans recommends a threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant (as defined under CEQA) structures (Caltrans 2004:17). These standards are more stringent than the recommended guidelines established by FTA, presented above.

Regional and Local Plans, Policies, Regulations, and Ordinances

Modesto City–County Airport Land Use Compatibility Plan

The Modesto City-County Airport is located in the northeastern portion of the city of Ceres. The airport serves general aviation pilots (light and ultralight planes), as well as scheduled daily connector service to the San Francisco and Los Angeles International Airports. Stanislaus County develops and maintains airport land use compatibility plans or simply land use compatibility plans, for Modesto City-County Airport, Oakland Municipal Airport, and Crows Landing Airport, which are all located in the County. These plans are intended to protect public health and safety and ensure compatible land use in areas around airports.

The latest land use compatibility plan for Modesto City–County Airport was adopted in August 2014. Figure (Map MOD-2) in Chapter 3, Section 1 (Modesto City–County Airport) of this document depicts the latest noise contours for the airport (Exhibit 3.11-4). As shown, the Specific Plan Area lies entirely outside of the 60 dB CNEL aircraft noise contours for the "Current Mission" scenario.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to noise are applicable to the proposed Specific Plan.

Health and Safety

- **Policy 5.L.1 Community Noise Compatibility**. Use Table 5-3: Community Noise Compatibility Matrix [of the Ceres 2035 General Plan, reproduced below] and the Projected Noise Contours (2035) in Figure 5-13 [of the Ceres 2035 General Plan] as guidelines to evaluate land use compatibility of new development, including whether a proposed use is compatible with the existing or planned noise environment of a given location, as well as whether a proposed use would negatively affect the noise environment for existing or planned uses in the area.

Table 5-3: Community Noise Compatibility Matrix

Land Use Categories	Community Noise Exposure DNL or CNEL, dB					
	55	60	65	70	75	80
Residential – Low Density Single-Family, Duplex, Mobile Homes						
Residential – Multi-family and Mixed Use						
Transient Lodging – Hotels, Motels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Office Buildings, Business Commercial and Professional						
Playgrounds, Neighborhood Parks						
Golf courses, Riding Stables, Cemeteries						
Industrial, Manufacturing, Utilities, Agriculture						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						

Notes:

DNL = Day-Night Average Level; CNEL = Community Noise Equivalent Level; dB = Decibel

Noise levels refer to external ambient noise from permanent land uses.

For mixed uses other than residential mixed use, refer to the most noise-sensitive use.

Normally Acceptable: Specified land use is satisfactory, based upon 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 noise insulation features included in the design.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

- **Policy 5.L.2 Maximum Allowable Noise Exposure**. Use the standards in Table 5-4: Maximum Allowable Noise Exposure for Transportation Noise Sources [of the Ceres 2035 General Plan, reproduced below in Table 3.11-4] to regulate acceptable limits of noise for various land uses for both exterior and interior environments from transportation sources.

Table 3.11-4. Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	DNL Outdoor Activity Areas (DNL, CNEL, $dB_{2)}$
Residential	60
Transient Lodging	60
Hospitals, Nursing Homes	60
Theaters, Auditoriums, Music Halls	—
Churches, Meeting Halls	60
Office Buildings	65
Schools, Libraries, Museums	60
Playgrounds, Neighborhood Parks	65

Notes:

DNL = Day-Night Average Level; CNEL = Community Noise Equivalent Level; dB = Decibel; L_{eq} = Equivalent Noise Level

[1] An outdoor activity area is a location outside of the immediate structure where formal or informal activities are likely to happen (such as a yard on a residential property, a playground or sports field at a school, or exterior patio or exercise area of a hospital). For non-residential uses where an outdoor activity area is not proposed, the standard does not apply. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level standard of DNL 65 dB shall be applied at the building façade, in addition to a DNL 60 dB standard at the outdoor activity area.

[2] Where it is not possible to reduce noise in outdoor activity areas to the allowable maximum, levels up to 5 dB higher may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

[3] CNEL is used for quantification of aircraft noise exposure.

[4] As determined for a typical worst-case hour during periods of use.

Source: City of Ceres 2017: Table 5-4

- **Policy 5.L.3 Performance Standards**. Use performance standards established in Table 5-5: Performance Standards for Stationary Sources [in the Ceres 2035 General Plan, reproduced below as Table 3.11-5] to regulate operational noise associated with new non-residential development or changes of non-residential use. Require, prior to approval of a project, that noise generated by the project be mitigated so as not to exceed the performance standards of Table [3.11-5]. Standards apply to the noise sources themselves, as measured at the edge of the property line of residential or other sensitive uses; noise caused by motor vehicles traveling to and from the site is exempt from these standards.

Table 3.11-5. Performance Standards for Stationary Noise Sources

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dBA	55	45
Maximum Sound Level dBA	60	45

Notes:

[1] Sound level measurements shall be made at a point on the receiving property nearest where the sound source at issue generates the highest sound level.

[2] Each of the noise levels specified shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

[3] These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. care-taker dwellings).

Source: City of Ceres 2017: Table 5-5

- **Policy 5.L.4 Siting Noise Sensitive Uses**. Prohibit the development of noise-sensitive uses where noise levels are "normally unacceptable" or higher as shown in Table 5-3: Community Noise Compatibility Matrix, unless effective noise mitigation measures have been incorporated into the development design to achieve the specified interior noise standards in Table [3.11-4]: Maximum Allowable Noise Exposure for Transportation Noise Sources. For public schools, require acoustic analyses for any schools proposed in areas where noise levels would be considered "normally unacceptable" per Table 5-3: Community Noise Compatibility Matrix.

- **Policy 5.L.5 Noise sensitive uses include, but are not limited to, schools, hospitals, places of worship, and homes**. The siting of public schools is approved by the State Division of Architects in cooperation with the Ceres Unified School District, rather than the City of Ceres.

- **Policy 5.L.6 Compatibility with Noise Sensitive Uses**. Require that noise created by new proposed non-transportation sources be mitigated so as not exceed the noise level standards of Table [3.11-4]: Maximum Allowable Noise Exposure for Transportation Noise Sources as measured at the property line of lands designated on the 2035 General Plan Land Use Map for noise-sensitive uses.

- **Policy 5.L.7 Acoustical Analysis**. Require an acoustical analysis as part of the environmental review process for proposed non-residential land uses that are likely to produce noise levels exceeding the performance standards of Table 5-4: Maximum Allowable Noise Exposure for Transportation Noise Sources [in the Ceres 2035 General Plan] for existing or planned noise-sensitive uses to ensure that mitigation is included in the project design. The acoustical analysis shall meet the following requirements:

    - It shall be the financial responsibility of the applicant;

    - It shall be prepared by a qualified person, selected by the City, who is licensed through the State of California in the fields of environmental noise assessment and architectural acoustics;

    - It shall include representative noise measurements with sufficient sampling period sand locations to adequately describe local conditions and the predominant noise sources;

    - It shall include estimates of existing and projected cumulative (20 years) noise levels in terms of DNL or CNEL and/or the standards of Table [3.11-4]: Maximum Allowable Noise Exposure for Transportation Noise Sources, and compare those levels to the adopted policies of the General Plan;

    - It shall recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the noise section of the General Plan, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance;

    - It shall include estimates of noise exposure after the prescribed mitigation measures have been implemented; and

    - It shall describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures, when deemed necessary by the City.

- **Policy 5.L.8 Airport Noise Compatibility**. Ensure that new development complies with the Modesto City-County Airport Land Use Compatibility Plan policies regarding noise.

- **Policy 5.L.11 Noise Compatibility**. Prevent incompatible land uses from encroaching upon existing or planned noise-generating uses (such as agricultural, industrial, or commercial uses) by avoiding the placement of incompatible uses in environments where existing noise levels conflict with guidelines and standards provided in Table 5-3: Community Noise Compatibility Matrix , Table [3.11-4]: Maximum Allowable Noise Exposure for Transportation Noise Sources, and Table [3.11-5]: Performance Standards for Stationary Noise Sources, or where land use designations provide for future uses whose noise levels would be likely to conflict, in order to protect the city's economic base.

- **Policy 5.L.12 Noise Mitigation**. Require, where noise mitigation measures are required to achieve the standards of Table [3.11-4]: Maximum Allowable Noise Exposure for Transportation Noise Sources and Table [3.11-5]: Performance Standards for Stationary Noise Sources, that the emphasis of such measures be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

Public Facilities and Services

- **Policy 6.C.16 Park Siting and Design**. Ensure that parks and recreation facilities are sited and designed to minimize negative impacts on surrounding residential neighborhoods (i.e., parking, lighting and glare, excessive noise).

City of Ceres Municipal Code

The City of Ceres Municipal Code includes the following provisions with respect to noise, which are applicable to this project:

9.36.010 Noise Prohibited

It is unlawful for any person to make, continue or cause to be made or continued any loud, unnecessary or unusual noise or any noise which either annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of others. (Ord. 75-439, 1975)

9.36.20 Unnecessary Noises

E. Construction or Repairing of Buildings: The erection (including excavating), demolition, alteration or repair of any building other than between the hours of seven o'clock (7:00) A.M. and eight o'clock (8:00) P.M., except that, by special permit issued by the Building Inspector or City Engineer, as the case may be, upon a determination that the public health and safety will not be impaired thereby, the erection, demolition, alteration or repair of any building or the excavation of streets and highways may be permitted within the hours of eight o'clock (8:00) P.M. and seven o'clock (7:00) A.M.

9.36.030 Exception to Sections 9.36.010 and 9.36.020

The provisions of Sections 9.36.010 and 9.36.020 shall not apply to any noise or situation within the scope of sections 23130 or 23109 of the Vehicle Code of the State. The collection of garbage is hereby exempted from the time limits contained in Sections 9.36.010 and 9.36.020 to the extent that it does not create a public nuisance. Garbage collection shall not start prior to five o'clock (5:00) A.M. (Ord. 90-752, 1990: Ord. 75-439, 1975)

18.38.060 Dangerous and Objectionable Elements

A. Noise: No noise shall be radiated from any use or facility that either:

- Substantially exceeds the standards shown on the following page; or
- In any other way constitutes a nuisance to adjacent or adjoining properties.

The standards referenced in 18.38.060 are provided in terms of L_{dn} for various land use categories in the form of a Land Use Compatibility Table. Because the City's non-transportation noise source standards (see Table 3.11-4) offer considerably more protection to existing noise-sensitive land uses in the project vicinity, those standards are used in this analysis for the assessment of noise impacts from on-site noise sources.

3.11.4 Environmental Impacts and Mitigation Measures

Analysis and Impact Assessment Methodology

Data included in Chapter 2, "Project Description," and obtained during on-site noise monitoring were used to determine potential locations of sensitive receptors and potential noise- and vibration-generating land uses on the Specific Plan Area. Noise-sensitive land uses and major noise sources near the Specific Plan Area were identified based on existing documentation (e.g., equipment noise levels and attenuation rates) and site reconnaissance data.

Construction Noise

To assess the impacts of potential temporary and short-term construction noise on sensitive receptors, the receptors and their relative exposure to the impacts (considering intervening building façades and distance) were identified. The construction noise that would be generated by the proposed Specific Plan was predicted by using the FHWA's Roadway Construction Noise Model (RCNM). The emission noise levels referenced and the use factors were based on the FHWA Roadway Construction Noise Model. The noise levels of the construction equipment that would be used and the resulting noise levels where sensitive receptors are located were calculated.

Traffic Noise

The FHWA Model was used to calculate traffic noise levels in the vicinity of the Specific Plan Area. The roadways analyzed were consistent with those analyzed in Section 3.14 of this EIR, "Traffic and Transportation". Roadway segment traffic volumes (average daily traffic [ADT] volumes) and assumed traffic speeds, fleet mixes (i.e., percent auto, medium truck, and heavy truck), and day/night traffic distributions were used to calculate unmitigated traffic noise levels at a distance of 50 feet from the roadway segment centerlines. Additionally, the FHWA Model was used to estimate the locations of 70 dB L_{dn}, 65 dB L_{dn}, and 60 dB L_{dn} traffic noise contours for

the studied roadway segments, and traffic noise levels were calculated for specific receiver locations in the Specific Plan Area.[15]

Modeled traffic noise levels and Specific Plan-related traffic noise level increases were compared to noise policies established by the Ceres 2035 General Plan. Significant noise impacts were assessed based on this comparison and mitigation measures were developed, where required, to address significant impacts. The standards of significance applied in this analysis address the exterior noise standards established by the City of Ceres. Unless otherwise stated, standards for interior noise levels would not be exceeded if exterior noise-level standards are achieved.

Aircraft Noise

As presented above, existing aircraft-related noise exposure from operations at Modesto City–County Airport does not exceed the residential land use compatibility threshold of 60 dB CNEL. Therefore, development of the proposed Specific Plan is not considered to be incompatible relative to aircraft noise exposure.

Stationary, Off-site Noise Sources

Noise levels associated with existing agriculture operations and construction of an off-site sewer line were assessed based on the typical noise levels of such equipment at 50 feet.

Stationary, On-site Noise Sources

Potential noise exposure from operations of proposed commercial, school, or park uses at adjacent residential uses were examined. Appropriate mitigation measures were developed to limit and reduce noise impacts, where applicable.

Vibration

Groundborne vibration impacts were assessed based on existing documentation (e.g., vibration levels produced by specific construction equipment operations associated with proposed project development) and the distance of sensitive receptors from the given source.

THRESHOLDS OF SIGNIFICANCE

Significance criteria are based on Appendix G of the CEQA Guidelines. The proposed project would have a significant impact with respect to noise/vibration if implementation would:

- expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- expose people to or generate excessive groundborne vibration or groundborne noise levels;
- produce a substantial permanent increase in noise levels relative to the ambient condition in the project vicinity;

[15] All modeled traffic noise levels were assumed to be conservative since the noise-level reduction effects associated with topographical shielding, excess ground absorption, and atmospheric absorption were not considered in the calculations.

- produce a substantial temporary or periodic increase in noise levels relative to the ambient condition in the project vicinity;

- expose people residing or working in the project area to excessive aircraft noise levels. This is applicable to projects 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; or

- expose people residing or working in the project area to excessive aircraft noise levels. This is applicable to projects located within the vicinity of a private airstrip.

ISSUES NOT DISCUSSED FURTHER

- **Public Use Airport or Private Airstrip –** The Specific Plan Area is not located in the vicinity of a private airstrip, and would therefore not be adversely affected by aircraft operations from such a facility.

- **Aircraft Noise.** Also, development of the proposed Specific Plan is not considered to be incompatible relative to aircraft noise exposure.

IMPACT ANALYSIS

IMPACT 3.11-1 Potential for Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise. *Specific Plan implementation would result in temporary, short-term construction activities. Specific Plan-related construction activities could expose existing off- and future on-site sensitive receptors to elevated noise levels. This impact is considered* ***significant****.*

The Specific Plan proposes a mix of land uses, including residential, commercial, schools, parks, and open space. Construction of on-site public services, utilities, and other infrastructure improvements, such as roadways, would be needed to support the development of the Specific Plan. Construction of the proposed land uses and improvements would occur by sub-areas, within each phase of the Specific Plan, in a sequence established by individual land owners and influenced by market demand.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading, and excavation, erection). Construction noise in any one particular area would be temporary and short-term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods.

Although noise ranges are generally similar for all construction phases, the grading phase tends to involve the noisiest equipment. EPA has found that the noisiest equipment types operating at construction sites typically range from 88 dB to 91 dB L_{max} at 50 feet (Table 3.11-6). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels at construction sites typically range from approximately 65 to 89 dB L_{eq} at 50 feet, depending on the activities performed (FTA 2006:12-6).

Construction Vehicle Movements

Construction of the proposed Specific Plan and off-site improvement areas would result in additional vehicle trips on the local roadway network from worker commutes and the transport of equipment and materials. The number of daily trips required for construction and the construction material haul routes are not knowable. However, the anticipated activities would not be expected to approach 500 daily one-way trips.

Table 3.11-6. Typical Construction Equipment Noise Levels

Equipment Item	Typical Maximum Noise Level (dB) at 50 Feet
Earthmoving	
Backhoes	80
Bulldozers	85
Front Loaders	80
Graders	85
Paver	85
Roller	85
Scrapers	85
Tractors	84
Slurry Trencher	82
Dump Truck	84
Pickup Truck	55
Materials Handling	
Concrete Mixer Truck	85
Concrete Pump Truck	82
Crane	85
Man Lift	85
Stationary Equipment	
Compressors	80
Generator	82
Pumps	77
Impact Equipment	
Compactor	80
Jack Hammers	85
Impact Pile Drivers (Peak Level)	95
Pneumatic Tools	85
Rock Drills	85
Other Equipment	
Concrete Saws	90
Vibrating Hopper	85
Welding Machine / Torch	73

Notes: dB = A-weighted decibels

Noise levels are for equipment fitted with properly maintained and operational noise control devices, per manufacturer specifications.

Sources: Bolt, Beranek and Newman Inc. 1981, FTA 2006:12-6

To provide conservative estimates of potential impacts, the City has evaluated the addition of 500 daily trips. As stated above, the construction material haul routes are not known, the total 500 daily construction-related trips were conservatively added along all the studied roadways. When added to the traffic volumes used in the "existing condition" assessment, as shown in Table 3.11-7, Specific Plan-related construction traffic for on- and

off-site improvements could increase traffic noise levels by as much as 2 dB to 4 dB for the studied roadway segments, assuming 500 vehicles per day. However, if the construction traffic uses multiple roadways to access the project site, the resulting noise level increases would be much less.

Table 3.11-7. Traffic Noise Contours: Existing Traffic Plus Construction Traffic

Roadway	Roadway Segment	Existing dB, L_{dn} at 50 feet	Existing + Construction Traffic dB, L_{dn} at 50 feet	Increase
Whitmore Avenue	From Mitchell Road to Della Drive	69	71	2
Whitmore Avenue	From Della Drive to Moore Road	69	71	2
Whitmore Avenue	From Moore Road to Boothe Road	69	71	2
Whitmore Avenue	From Boothe Road to Eastgate Boulevard	67	71	4
Whitmore Avenue	From Eastgate to Faith Home Road	64	68	4
Faith Home Road	From Whitmore Avenue to Roeding Road	62	66	4
Eastgate Boulevard	From Whitmore Avenue to South of Whitmore Ave	61	65	4
Moore Road	From Whitmore Avenue to Roeding Road	61	65	4
Roeding Road	From Moore Road to Faith Home Road	59	63	4

Notes: dB = A-weighted decibels; L_{dn} = Day-Night Average Noise Level; SR = State Route

Source: Modeling conducted by AECOM in 2018

Traffic noise exposure at the closest noise-sensitive receivers (residences) to these roadways could increase beyond the applicable City land use compatibility threshold of 60 dB L_{dn} as a result of the construction traffic. However, as shown in Table 3.11-7, the existing traffic noise levels already exceed the threshold of 60 dB L_{dn} along studied segments all the studies segments, except Roeding Road from Moore Road to Faith Home Road. The construction trips to and from the Specific Plan Area would likely occur mostly from Whitmore Avenue to SR 99. Also, if the house structures are shielding the backyards from the roadway noise, the traffic noise at the backyards would be at least 3 to 5 dB lower than the traffic noise levels estimated above that do not account for intervening structures. Also, if the construction traffic uses multiple roadways to access the project site, the resulting noise level increases would be much less. Furthermore, as stated Table 3.11-4 footnote, the City allows 65 dB L_{dn} as a maximum noise exposure from transportation sources where it is not possible to reduce noise in outdoor activity areas to 60 dB CNEL/L_{dn}, or less using a practical application of the best-available noise reduction measures, provided the available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with the City's threshold of 45 dB L_{dn}. Therefore, the impact related to vehicle trips on the local roadway network from worker commutes and the transport of equipment and materials during construction would be **less than significant**.

On-site (Project) Receptors

Implementation of the phased development of the Specific Plan Area would result in potential disruption of on-site, noise-sensitive receptors occupying areas of the Specific Plan Area following completion of early phases of the development. Although these receptors may be noise-sensitive, among some future residents and visitors of the Specific Plan Area, there would be an expectation of construction noise, since it would be a developing area. If exterior standards are not feasible due to the nature of the Specific Plan (phased construction and development

over a number of years), it may be helpful to focus on the interior noise environment of primary daytime uses, and to eliminate the possibility of significant construction noise impacts at Specific Plan Area receivers during nighttime hours. Assuming an average exterior-to-interior noise level reduction of 25 dB (with windows closed), exterior construction-generated noise levels in excess of 70 dB L_{eq} at the façade of a building may result in interior noise levels in excess of 45 dB L_{eq}. Based on this same assumption, and assuming a maximum construction noise level of 89 dB L_{eq} at 50 feet with an attenuation rate of 6 dB per doubling of distance from the source, construction activities located within approximately 500 feet of daytime noise-sensitive receptors (e.g., school classrooms) could result in interior noise levels in excess of 45 dB L_{eq}. The impact is considered **significant**.

Existing (Off-site) Receptors

Temporary noise production as a result of construction facilitated by the Specific Plan could expose existing (off-site) sensitive receptors to noise levels that exceed the City of Ceres exterior noise policies (45 dB L_{eq} and 45 dB L_{max} during nighttime, 55 dB L_{eq} and 60 dB L_{max} during daytime) (Table 3.11-7).

Assuming a reference construction noise level of 89 dB L_{eq} at 50 feet and spherical spreading loss (-6 dB per doubling of distance), existing noise-sensitive uses within 2,500 feet of heavy construction operations may experience unmitigated construction noise exposure in excess of the City's 55 dB L_{eq} daytime limit. This impact is considered **significant**.

Construction of an off-site sewer line would be needed to support the development of the Specific Plan. This line will extend to the south in Moore Road to Roeding Road and west in Roeding Road to Mitchell Road. The main will be approximately 2,100 feet in length (O'Dell Engineering 2017). Construction noise associated with the new sanitary sewer line would be expected to affect existing noise-sensitive, residential uses on Moore Road, and Roeding Road along the chosen route. Since there are existing residences located directly adjacent to the proposed sanitary sewer line route(s) (within 50 feet) on Moore Road, and Roeding Road, unmitigated construction noise levels at these locations would be as high as 89 dB L_{eq}, 34 dB above the applicable daytime noise level limit of 55 dB L_{eq}.

These noise levels assume no natural or artificial shielding provided by existing and proposed structures and no meteorological conditions. Therefore, these estimates should be considered conservative (potentially overestimating impacts). Overall, noise levels anticipated over temporary periods of time as a result of construction facilitated by the Specific Plan could expose sensitive receptors to noise levels that exceed the Ceres 2035 General Plan noise standards (45 dB L_{eq} and 45 dB L_{max} during nighttime, 55 dB L_{eq} and 60 dB L_{max} during daytime). As a result, this impact is considered **significant**.

Mitigation Measure

Mitigation Measure 3.11-1: Reduce Construction Noise.

- Where feasible, construction traffic shall avoid routes directly adjacent to noise-sensitive land uses, including Roeding Road between Moore Road and Faith Home Road and More Road between Whitmore Avenue and Roeding Road.

The project applicant(s) and contractor(s) of all project phases shall implement the following measures to minimize noise impacts for all on- and off-site construction within 500 feet of any noise-sensitive land use.

- Limit noise-generating construction operations to the hours of 7 a.m.-8 p.m. (daytime).
- Locate fixed/stationary equipment (e.g., generators, compressors) as far as possible from noise-sensitive receptors. Shroud or shield all impact tools, and muffle or shield all in-take and exhaust ports on powered construction equipment.
- Store and maintain equipment as far as possible from noise-sensitive receptors.
- Properly maintain and equip all construction equipment with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment-engine shrouds shall be closed during equipment operation.
- Shut down all motorized construction equipment when not in use to prevent excessive idling noise.
- Construct acoustic barriers (e.g., plywood, sound attenuation blankets) to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and construction equipment.

Significance after Mitigation

With the implementation of Mitigation Measure 3.11-1, construction activities would be limited to daytime hours (would not take place between 8 p.m. of 1 day and 7 a.m. of the following day). Construction equipment would be properly maintained and equipped with noise control components, such as mufflers, in accordance with manufacturers' specifications. All feasible sound barriers would be installed, where warranted. When installed properly, acoustic barriers may reduce noise levels by 5–15 dB. However, the City cannot demonstrate that these mitigating efforts would reduce construction noise exposure to 55 dB L_{eq} or less at noise-sensitive receivers in all cases. There is no additional feasible mitigation to avoid or reduce this impact to a less-than-significant level. As a result, this impact would remain **significant and unavoidable**.

IMPACT 3.11-2 Increase in Traffic Noise Levels at Existing Noise-Sensitive Receptors. *Implementation of the proposed Specific Plan would add additional traffic to the roadway network, increasing traffic noise levels along roadways affected by the Specific Plan. The impact is considered* ***less than significant****.*

Implementation of the proposed Specific Plan would result in an increase in traffic volumes and, consequently, an increase in traffic noise. To assess this impact, traffic noise levels with and without the Specific Plan were estimated for affected roadway segments using FHWA's Highway Noise Prediction Model (FHWA-RD-77-108) (FHWA 1978) and traffic data (e.g., ADT volumes, vehicle speeds, and percent distribution of vehicle types)

derived to support this EIR.[16] Interior and exterior traffic noise exposure for off-site, noise-sensitive receptors is evaluated below.

Interior

Typical residential construction (i.e., wood siding or two-coat stucco, STC 30-31 windows, door weather-stripping and thresholds, exterior wall insulation, composition plywood roof) would be expected to provide an exterior-to-interior noise level reduction of no less than 25 dB with exterior doors and windows closed. Therefore, residential building façades exposed to traffic noise levels of 70 dB L_{dn} or less would be expected to comply with the City's interior maximum transportation noise exposure standard of 45 dB L_{dn}/CNEL (70 dB – 25 dB = 45 dB). There are no roadway segments affected by Specific Plan traffic near residential areas at or above 70 dB L_{dn} (Table 3.11-8). Interior traffic noise would not be expected to exceed the City's 45 dB L_{dn} limit. The impact is **less than significant.**

Table 3.11-8. Traffic Noise Contours – Existing and Existing Plus Specific Plan

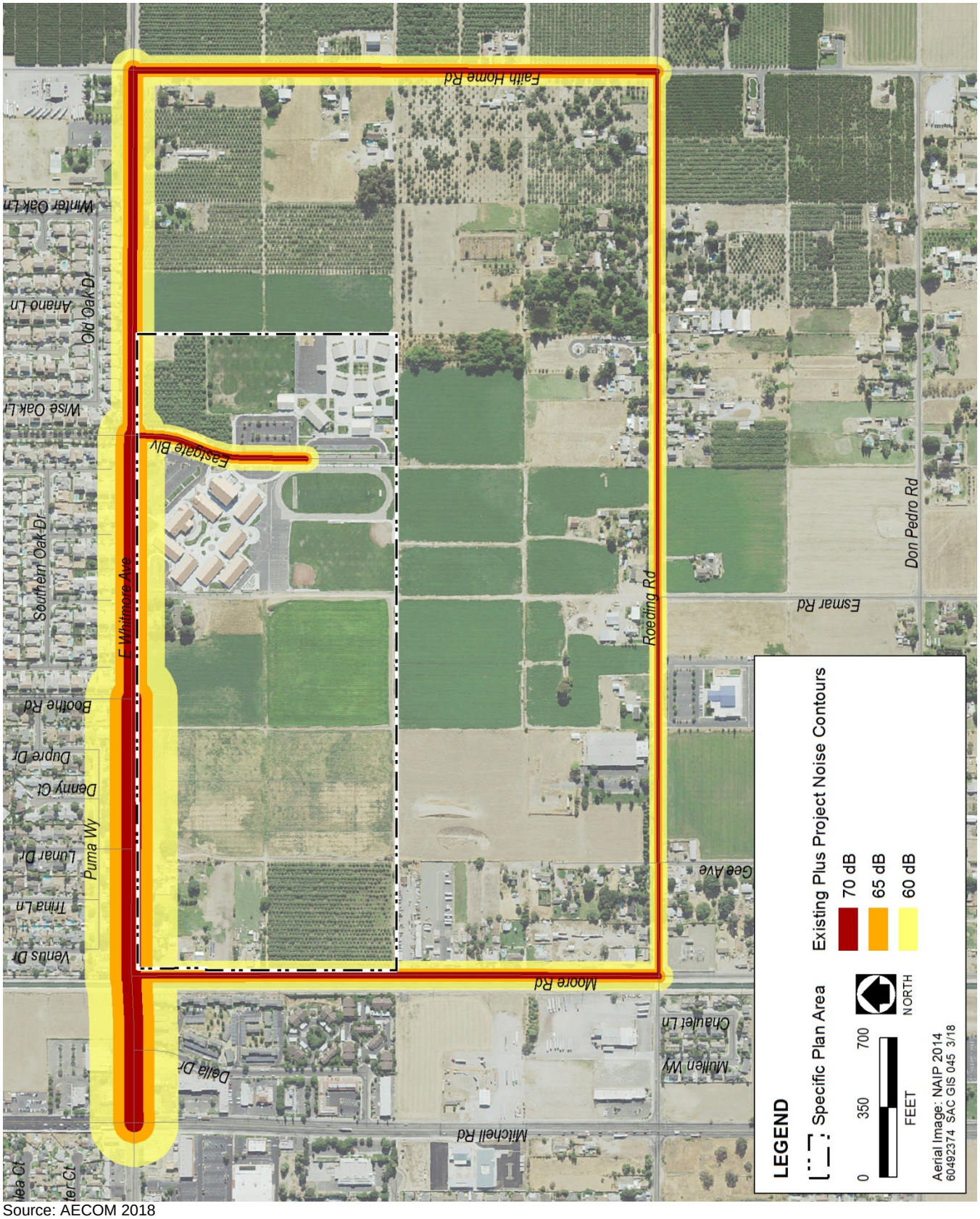
Roadway	Roadway Segment	Existing dB, L_{dn} at 50 feet	Existing Plus Specific Plan				Increase from Specific Plan
			dB, L_{dn} at 50 feet	Distance to Contours, feet			
				70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}	
Whitmore Avenue	From Mitchell Road to Della Drive	69	70	46	100	216	0.8
Whitmore Avenue	From Della Drive to Moore Road	69	70	46	100	216	0.8
Whitmore Avenue	From Moore Road to Boothe Road	69	70	48	104	224	0.6
Whitmore Avenue	From Boothe Road to Eastgate Boulevard	67	68	35	76	163	0.4
Whitmore Avenue	From Eastgate to Faith Home Road	64	65	23	49	107	0.5
Faith Home Road	From Whitmore Avenue to Roeding Road	62	63	17	36	77	0.7
Eastgate Boulevard	From Whitmore Avenue to South of Whitmore Ave	61	61	13	28	61	0.0
Moore Road	From Whitmore Avenue to Roeding Road	61	62	15	32	69	1.2
Roeding Road	From Moore Road to Faith Home Road	59	61	12	27	57	2.3

Notes: dB = A-weighted decibels; L_{dn} = Day-Night Average Noise Level; SR = State Route
Source: Modeling conducted by AECOM in 2018

Exterior

Table 3.11-8 summarizes modeled CNEL/L_{dn} at 50 feet from the roadway centerline for affected roadway segments under existing conditions and with Specific Plan implementation. The estimated distances to the 70 dB L_{dn}, 65 dB L_{dn}, and 60 dB L_{dn} traffic noise contours with the implementation of the Specific Plan are also summarized in Table 3.11-8. Exhibit 3.11-5 shows the existing plus project traffic noise contours for roadways in the vicinity of the Specific Plan Area.

[16] This model is based on the California Vehicle Noise (CALVENO) 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 ground attenuation factors. The traffic noise levels presented represent an application of conservative traffic noise modeling methodologies, which assumes no natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) from existing or proposed structures or topography. The proposed project's contribution to the existing and cumulative traffic noise levels along area roadways was determined by comparing the predicted noise levels with and without project-generated traffic. Actual traffic noise exposure levels in the vicinity of the Specific Plan Area would vary depending on a combination of factors, such as variations in daily traffic volumes, shielding provided by existing and proposed structures, and meteorological conditions. Refer to Appendix E for complete modeling inputs and results.



Source: AECOM 2018

Exhibit 3.11-5 Existing Plus Project Traffic Noise Levels

Modeled roadway noise levels assume no natural or artificial shielding and, therefore, these estimates should be considered conservative (potentially overestimating impacts). Implementation of the proposed Specific Plan would increase traffic noise levels from +0.5 dBA to +2.3 dBA L_{dn}, relative to existing noise levels. Actual traffic noise exposure levels in the vicinity of the Specific Plan Area would vary depending on a combination of factors, such as variations in daily traffic volumes, shielding provided by existing and proposed structures, and meteorological conditions. The comparative analysis between existing conditions and existing conditions + the Specific Plan is only hypothetical and would tend to exaggerate noise impacts. In reality, Specific Plan traffic will not be added to existing conditions. The Specific Plan is anticipated to build out over the course of approximately 10 to 30 years. Refer to Appendix E for complete modeling inputs and results.

As shown, the theoretical noise level along existing roadways could slightly increase as a result of Specific Plan traffic. In general, a 1-dB increase in noise level is imperceptible, a 3-dB increase is barely perceptible, and a 6-dB increase is clearly noticeable. As shown in Table 3.11-8, predicted traffic noise levels exceed 60 dB CNEL under existing conditions. Residences along the affected section of Whitmore Avenue are behind a noise attenuation barrier. There are existing residences along the affected portions of Roeding Road. However, the noise increase due to project-related traffic volume increase is less than 3 dB, as shown in Table 3.11-8. This impact is considered **less than significant**.

IMPACT 3.11-3 Increase in Traffic Noise Levels at Proposed Noise-Sensitive Receptors. *Implementation of the proposed Specific Plan would add additional traffic to the roadway network, increasing traffic noise levels in areas that may affect proposed noise-sensitive uses. The impact is considered* ***significant****.*

Interior and exterior noise exposure to traffic noise for proposed on-site, noise-sensitive uses is evaluated below.

Interior

Typical construction would provide an additional exterior-to-interior noise level reduction of no less than 25 dB with exterior doors and windows closed for residential areas near the above described primary roadways. Therefore, residential building façades exposed to traffic noise levels of 70 dB L_{dn} or less would be expected to comply with the City's interior maximum transportation noise exposure standard of 45 dB L_{dn}/CNEL (70 dB – 25 dB = 45 dB). There is no roadway segment affected by Specific Plan traffic near residential areas at or above of 70 dB L_{dn}. Interior traffic noise would not be expected to exceed the City's 45 dB L_{dn} limit. This impact is considered **less than significant**.

Exterior

As shown above in Table 3.11-8, future residences in the Specific Plan Area located within 40 feet to 204 feet from the roadway centerline under existing condition, and within 44 feet to 223 feet from the roadway centerline under existing with Specific Plan Area would be exposed to traffic noise levels exceeding 60 dB L_{dn}/CNEL. Whitmore Avenue is the focus of transportation noise analysis for on-site proposed land uses since noise levels along Moore Road would not conflict with City guidance.

In the Ceres 2035 General Plan, for residential exposure to transportation noise, the City's policy is a maximum of 60 dB L_{dn}/CNEL for outdoor activity areas (see 3.11-4). Where it is not possible to provide 60 dB CNEL using best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed,

provided that exterior reduction measures have been implemented and interior noise levels are no more than 45 dB L_{dn}/CNEL. In instances such as the Specific Plan where the outdoor activity area is unknown, the policy is applied to residential property lines. Future projects proposed under the Specific Plan will demonstrate the placement of buildings, and be able to identify the location of outdoor activity areas. The 65 dB L_{dn} noise contour under existing plus project conditions along Whitmore Avenue is approximately 76 to 104 feet from the centerline adjacent to the Specific Plan Area under existing plus project conditions. According to the Ceres 2035 General Plan, noise barriers are only to be considered after all other practical design-related strategies have been integrated into the project (see Policies 5.L.7 and 5.L.12).

Depending on the site planning and design strategies incorporated into future residential development along the Whitmore Avenue corridor, transportation noise exposure impact could be **potentially significant**.

Mitigation Measure:

Mitigation Measure 3.11-3: Reduce Transportation Noise Exposure Consistent with the Ceres 2035 General Plan.

The project applicant(s) and contractor(s) for proposed residential development along Whitmore Avenue that could be exposed to transportation noise levels in excess of City noise policies shall incorporate one or both of the following strategies to ensure noise exposure levels that are consistent with the Ceres 2035 General Plan (2018):

- Provide site planning and design strategies demonstrated to achieve acceptable or conditionally acceptable exterior noise exposure policies. This can include placing distance between outdoor gathering spaces and Whitmore Avenue, placement of buildings between Whitmore Avenue and outdoor gathering spaces associated with proposed residential uses, or other approaches that are demonstrated to achieve acceptable or conditionally acceptable exterior noise exposure policies in the Ceres 2035 General Plan.

- Construct sound walls along the affected roadways, between the Specific Plan Area and the roadways with noise levels above 65 dB L_{dn}. After all practical site planning and design strategies are exhausted, the City may allow construction of sound walls along the south side of Whitmore Avenue, if needed, to achieve acceptable or conditionally acceptable exterior noise exposure policies in the Ceres 2035 General Plan. Soundwalls should be high enough to cut the line of sight between the roadway and outdoor gathering areas.

Significance after Mitigation

With the implementation of Mitigation Measure 3.11-3, feasible sound barriers would be installed, where warranted. When installed properly, acoustic barriers may reduce noise levels by 5–15 dB.[17] However, the City cannot demonstrate that these mitigating efforts would reduce traffic noise exposure to 65 dB L_{eq} or less at noise-sensitive receivers in all cases. There is no additional feasible mitigation to avoid or reduce this impact to a less-than-significant level. As a result, this impact would remain **significant and unavoidable**.

[17] A properly designed fence or wall can also provide visual and acoustical separation between noise sources and adjacent land areas. This method can reduce noise as much as 15 dBA. https://www.fhwa.dot.gov/Environment/noise/noise_compatible_planning/federal_approach/audible_landscape/al04.cfm

IMPACT 3.11-4 **Long-Term Exposure of On-site Sensitive Receptors to On- and Off-site Non-transportation Noise Sources.** *Specific Plan implementation would result in development of on-site, noise-sensitive and noise-producing uses. Noise levels at sensitive receivers could exceed levels required by applicable noise policies. This impact is considered* ***potentially significant****.*

Residences

The proposed Specific Plan includes development of various residential land uses. Occupation of the proposed dwellings would expose adjacent residences to noise. Noise typically associated with such development includes amplified music, voices, recreational activities, and lawn and home maintenance equipment. Activities associated with these land uses would result in only minor and intermittent temporary noise exposure, as perceived at the closest residential receptors, primarily during the day and evening hours. The multi-family residential area in the northwestern portion of the Specific Plan Area could include a parking lot or lots. Maximum intermittent noise levels commonly associated with parking lots can reach levels of 70 dB (L_{max}) at 500 feet from the occasional sounding of car alarms and amplified music.

Noise levels associated with residential land uses would also include the operation of exterior mechanical equipment (i.e., air conditioning units). Residential-use central air conditioning units typically produce noise levels in the range of 45–70 dB L_{eq} at a distance of 50 feet (EPA 1971). Depending on the distance between residential dwellings, noise levels associated with air conditioning units located within side-yard areas of residential land uses could potentially exceed the City's noise standards. This impact is considered **potentially significant**.

Schools and Parks

The proposed Specific Plan includes schools and recreational areas near schools, as well as park sites that are separated from schools. Noise-generating activities would depend on facility type/activities. Daytime noise associated with schools and parks typically includes intermittent noise such voices, whistles associated with sporting events/practices, opening and closing of vehicle doors in parking lots, and use of landscape maintenance equipment. School uses may also result in mechanical noise associated with building air conditioning/ventilation systems.

Noise levels associated with landscape maintenance activities, including the use of large gasoline-powered mowers and leaf blowers, can range from approximately 66 to 72 dB L_{max} at 25 feet. Mechanical noise associated with the operation of ventilation equipment required to service school facilities can result in average noise levels of 55 dB (L_{eq}) at approximately 175 feet from the source. Long-term noise measurements taken to support this EIR directly adjacent to the Cesar Chavez Junior High School show existing noise levels of approximately 62 dB L_{dn}. This impact is considered **potentially significant**.

Off-site Agriculture Noise

Noise levels produced by agricultural equipment operations at adjacent agriculture uses to the south could be as high as 84 dB L_{max} and 80 dB L_{eq} at a distance of 50 feet. As described in Section 3.2, "Agricultural Resources," residential uses planned in the southern portion of the Specific Plan Area would be set back from ongoing and potential future agricultural operations by Stanford Avenue. Assuming noise attenuation due to spherical

divergence (-7.5 dB per doubling of distance for soft ground[18]), agricultural equipment within approximately 500 feet of a noise-sensitive use could exceed the City's 55 dB hourly L_{eq} daytime noise exposure limit (Table 3.11-5) when operating continuously during one hour. Agricultural equipment could exceed the City's 60 dB hourly L_{max} daytime noise exposure limit (Table 3.11-5) when operating continuously during one hour.

However, this noise exposure would be relatively rare (i.e., during planting and harvesting), and would be short in duration. The City's non-transportation noise exposure standard for noise-sensitive uses is an hourly standard. As noise-producing equipment operates in an agricultural field, normally, this equipment would be moving. Using a reference noise level of 80 dB L_{eq} and assuming agricultural equipment spent approximately 10 minutes of every daytime hour at the closest point to adjacent planned residential uses, worst-case noise levels would be 55 dB L_{eq} at approximately 350 feet from the source when this equipment is operating. Using a reference noise level of 84 dB L_{max} and assuming agricultural equipment spent approximately 10 minutes of every daytime hour at the closest point to adjacent planned residential uses, worst-case noise levels would be 75 dB L_{max} at approximately 85 feet from the source.

Agricultural areas south and east of the Specific Plan are designated for urban development in the future – light industrial and low-density residential development – according to the Ceres 2035 General Plan Land Use Diagram. Therefore, any noise exposure effects related to agricultural operations would be considered temporary, also, as the vicinity of the Specific Plan Area transitions to urban use.

Although noise-generating equipment would only operate during certain relatively limited times of the year, and although the vicinity of the Specific Plan is anticipated to transition away from agricultural uses, the impact is considered temporary and **significant**.

Mitigation Measure

Mitigation Measure 3.11-4: Reduce Stationary Noise Source Exposure.

- Noise generating mechanical equipment shall be shielded or located at a distance that would reduce noise levels at any existing or planned noise-sensitive outdoor activity areas to acceptable levels, as directed by the Ceres 2035 General Plan (2018).

- Residential air conditioning units shall be located a minimum of 10 feet from adjacent residential dwellings, including outdoor activity areas, or shall be shielded or designed to reduce operational noise levels at adjacent dwellings. Shielding may include the use of fences or partial equipment enclosures. To provide effectiveness, fences or barriers shall be continuous or solid, with no gaps, and shall block the line of sight to windows of neighboring dwellings.

- Include site planning and design strategies, such as orientation of homes toward Cesar Chavez Junior High School with outdoor gathering areas placed behind proposed homes in order to reduce noise exposure, consistent with the Ceres 2035 General Plan noise policies.

[18] Any highly absorptive surface in which the phase of the sound energy is changed upon reflection (FHWA 2011).

Significance after Mitigation

In addition to the above-described mitigation measures, development within the Specific Plan Area will be required to comply with the City's Code of Ordinances, Chapter 9.36, which includes restrictions on noise generation. Based on above-described measures and the performance standards referenced in these mitigation measures, the impact would be reduced to a **less-than-significant** level for mechanical equipment that may be associated with future development.

While site planning and design strategies can likely achieve consistency with the City's noise policies, the City cannot guarantee at this time that noise exposure policies would be achieved in every case. In addition, although agricultural operations would produce only intermittent noise and agricultural areas are expected to transition to urban development, there could be temporary impacts. These impacts are **significant and unavoidable**.

IMPACT 3.11-5 Potential Exposure of On- and Off-site Sensitive Receptors to Groundborne Noise and Vibration. *Implementation of the Specific Plan could result in exposure of on- and off-site sensitive noise receptors to groundborne noise and vibration. This impact is considered potentially significant.*

The Specific Plan does not include any long-term, operational sources of substantial vibration.

Construction activities have the potential to result in varying degrees of temporary and short-term ground vibration, depending on the specific construction equipment used and operations involved. Ground vibration levels associated with various types of construction equipment are summarized in Table 3.11-9. Based on the representative vibration levels identified for various construction equipment types, sensitive receptors located near construction activities could be exposed to groundborne vibration levels exceeding the recommended FTA and Caltrans guidelines of 80 VdB and 0.2 in/sec PPV, respectively. Construction of off-site improvement areas could potentially occur near vibration-sensitive uses, as well.

Table 3.11-9. Representative Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)[1]	Approximate L_v (VdB) at 25 feet[2]
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Notes:
[1] Where PPV is the peak particle velocity.
[2] Where Lv is the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
Source: FTA 2006

A groundborne noise and vibration-sensitive receptor would need to be located within 100 feet from vibration-induced construction activities in order to perceive noticeable (greater than 80 VdB or 0.2 in/sec PPV) groundborne noise or vibration. Groundborne noise and vibration levels were predicted based on VdB and PPV

reference vibration levels shown in Table 3.11-9. Based on the anticipated phasing and location of development of the Specific Plan Area, vibration-induced construction activities could exceed 0.2 in/sec PPV and 80 VdB while portions of the Specific Plan Area are occupied and other portions are under construction. This impact is considered **potentially significant**.

Mitigation Measure

Mitigation Measure 3.11-5: Implement Measures to Reduce Impacts Associated with Groundborne Noise and Vibration.

The project applicant(s) and contractor(s) of all development phases under the Specific Plan shall implement the following measures to reduce impacts associated with groundborne noise and vibration:

- Vibration-generating construction operations shall occur greater than 100 feet from occupied vibration-sensitive receptors (e.g., residences, schools) or as far as feasible from sensitive receptors.
- All construction equipment and equipment staging areas shall be located as far as possible from nearby vibration-sensitive land uses.

Significance after Mitigation

With the implementation of Mitigation Measure 3.11-5, construction would be required to occur at a farthest feasible distance from occupied, vibration-sensitive receptors. Implementation of this mitigation measure would reduce potentially significant impacts from temporary, short-term construction groundborne noise and vibration. However, particularly with the off-site sewer line improvements, the City cannot guarantee that it will be feasible to conduct all vibration-generating construction activities greater than 100 feet from occupied vibration-sensitive uses and there are no other feasible mitigation measures available to avoid or reduce this impact to a less-than-significant level. Therefore, this impact would remain **significant and unavoidable**.

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3.12 POPULATION AND HOUSING

This section describes existing population and housing trends in the Ceres area, as well as applicable policies and regulations. Potential impacts to population, housing, and employment resulting from implementation of the Specific Plan are described.

3.12.1 EXISTING CONDITIONS

POPULATION

Ceres is the third largest city in Stanislaus County behind Modesto and Turlock and has experienced ten-fold population growth since 1960, increasing from 4,400 residents to nearly 48,000 in 2017 (City of Ceres 2016; DOF 2017). The number of households in Stanislaus County in 2017 was an estimated 168,646, with 12,787 households in Ceres (DOF 2017). Average household size in Ceres (3.71) is considerably higher than in Stanislaus County (3.21) and statewide (2.97) (DOF 2017).

Ceres increased population by approximately 1,000 residents per year between 1960 and 2010, on a proportional basis exceeding growth in Modesto, Turlock, and Stanislaus County between 1970 and 2010. However, like many communities throughout the Central Valley, Ceres has experienced minimal growth since 2010 due primarily to the impacts of the Great Recession.

According to the 2016 Stanislaus Council of Governments' (StanCOG) demographic forecast, the population of Ceres is projected to grow by 28 percent during the 20-year period between 2015 and 2035 (StanCOG 2016). While this is approximately consistent with countywide growth of 25 percent over the same period, it is substantially lower than Ceres' historical 20-year growth rate of 43 percent between 1990 and 2010 (DOF 2016).

HOUSING

Ceres' residential inventory consists of a higher proportion of single-family detached units than Modesto, Turlock, the state, and Stanislaus County as a whole (Table 3.12-1). Furthermore, Ceres' residential inventory features a lower proportion of structures containing three or more units than all of these geographies, reflecting the limited multi-family inventory throughout the city. Homeownership rates in Ceres are much higher than the state average and the rates seen in neighboring cities. High home-ownership rates reflect both the housing stock available in Ceres (for-sale single-family homes) and the relative stability of the community despite lower household incomes (City of Ceres 2016).

Table 3.12-1. Housing Structures by Unit Type

	Ceres	Turlock	Modesto	Stanislaus County	California
1-unit, detached	77%	68%	69%	75%	58%
1-unit, attached	5%	5%	4%	4%	7%
2 units	3%	3%	5%	3%	3%
3 or 4 units	2%	5%	5%	4%	6%
5 to 9 units	3%	4%	4%	3%	6%
10 to 19 units	1%	3%	3%	2%	5%
20 or more units	4%	8%	7%	5%	12%
Mobile home	4%	3%	2%	4%	4%
Boat, RV, van, etc.	1%	0%	0%	0%	0%

Source: City of Ceres 2016

Similar to many of the communities in the Central Valley, Ceres has experienced virtually no new residential development since 2010. As shown below in Table 3.12-2, 80 percent of all housing stock in the city was built between 1970 and 2009, reflecting both the strong population growth patterns discussed at the beginning of this chapter during this period, along with the impacts of the Great Recession on housing demand and pricing, which has severely limited new development since 2010 (City of Ceres 2016).

Table 3.12-2. Housing Structure Age

	Ceres	Turlock	Modesto	Stanislaus County	California
Built 2010 or later	0%	0%	0%	0%	1%
Built 2000 to 2009	25%	22%	11%	17%	12%
Built 1990 to 1999	13%	18%	12%	15%	11%
Built 1980 to 1989	23%	18%	20%	17%	15%
Built 1970 to 1979	19%	21%	25%	20%	18%
Built 1960 to 1969	6%	7%	13%	10%	14%
Built 1950 to 1959	8%	6%	11%	10%	14%
Built 1940 to 1949	4%	4%	5%	5%	6%
Built 1939 or earlier	2%	5%	5%	6%	9%

Source: City of Ceres 2016

EMPLOYMENT

The availability of employment opportunities within a community often influences where people choose to live, and therefore employment information is important to the analysis presented in this section of the EIR.

Buildout of the Ceres 2035 General Plan, which includes development within the city limits, its sphere of influence, and its Planning Area, could accommodate a total of approximately 30,800 jobs by 2035. Of this total, approximately 20,800 jobs are expected to be created by future development in the city limits. The intent of the Ceres 2035 General Plan is to increase the number and diversity of locally available jobs that could be filled by the local employment pool, including the underemployed and unemployed and those commuting to jobs outside of the City (City of Ceres 2018).

The jobs-to-housing balance in the City is expected to increase from 0.63 in 2015 to 1.32 in 2035. Ratios below 1.0 suggest that residents are required to commute to jobs outside of their area of residence, and ratios greater than 2.0 suggest that employers are not able to house their workers within the jurisdictions, requiring workers to commute into the area. Theoretically, a balanced jobs-to-housing ratio would reduce the need for people to commute in or out of the city for work. Based on this assumption, the estimated jobs-to-housing ratio of 1.32 in 2035 indicates a better numeric match between the number of jobs in the City and the number of employed residents, which would reduce the amount of residents that out-commute to jobs outside of the City. Furthermore, this balance also indicates an adequate amount of housing would be available to accommodate workers in the City (City of Ceres 2018).

3.12.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to population and housing are applicable to the proposed Specific Plan.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

State Housing Law

State law requires that all cities and counties provide a certain amount of housing to accommodate the demands of the growing population. The California Department of Housing and Community Development is responsible for determining the statewide housing need, while local governments and councils of governments determine the specific housing needs within their jurisdictions and prepare a Regional Housing Needs Allocation (RHNA). Construction of new housing is not mandated by the RHNA, which is intended as a planning tool and a guide to an equitable distribution of housing.

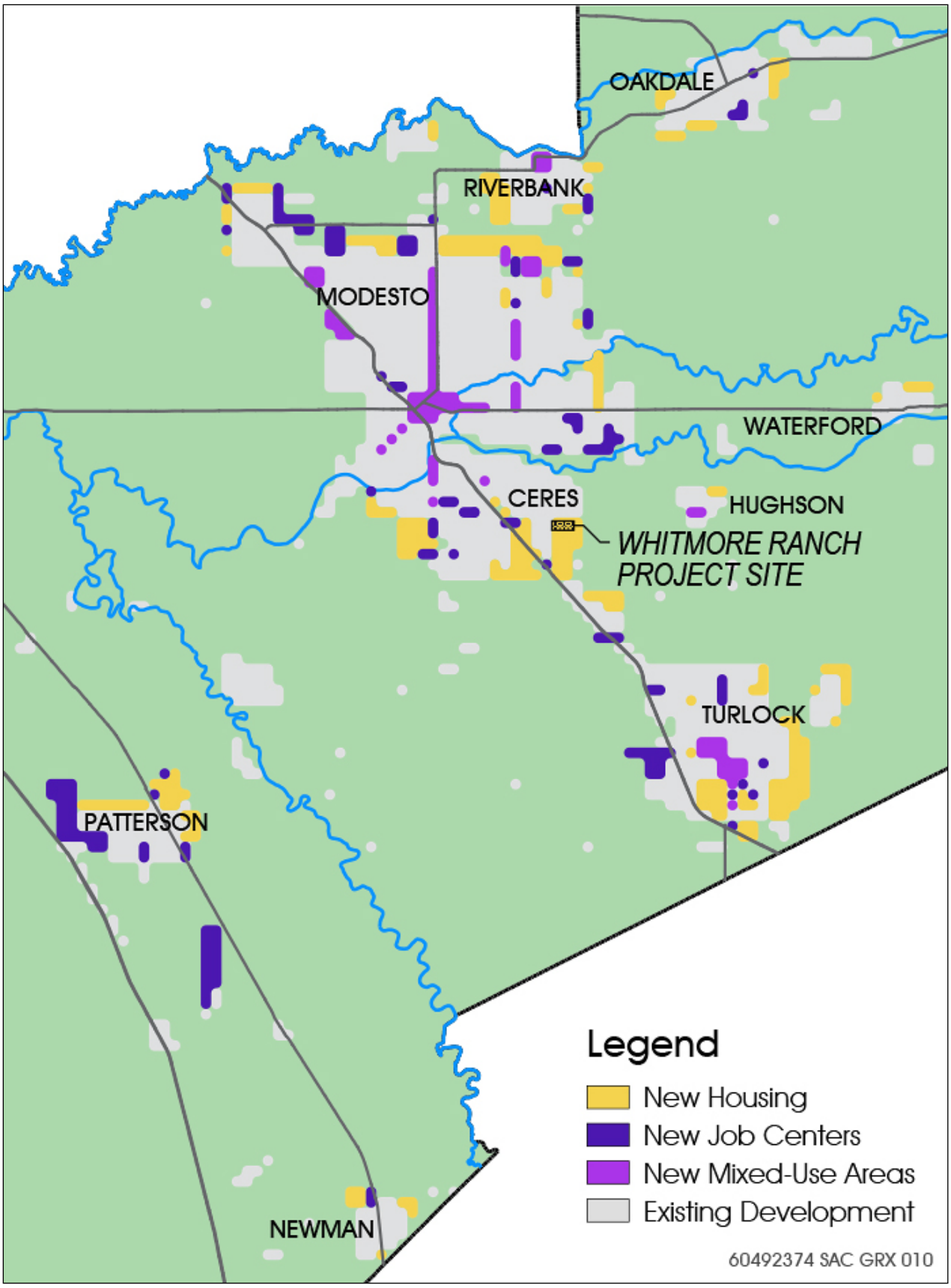
REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Stanislaus Council of Governments

The Stanislaus Council of Governments (StanCOG) is comprised of the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, and the County of Stanislaus, and was established in 1971to address regional transportation issues.

Regional Transportation Plan

The Regional Transportation Plan (RTP) is the region's 25-year planning blueprint for future transportation improvements and investments based on specific transportation goals and objectives (StanCOG 2014). The RTP covers all modes of a complete transportation system, including roadways, transit, bicycle/pedestrian improvements, and aviation. The RTP shows the Specific Plan Area as "New housing" as shown in Exhibit 3.12-1 (StanCOG 2014).



Source: StanCOG 2014

Exhibit 3.12-1 StanCOG Regional Transportation Plan Preferred Alternative

Stanislaus County General Plan

The County's General Plan provides a blueprint to guide the physical development, preservation, and conservation of areas within the unincorporated areas of the county. The Stanislaus County General Plan establishes land use designations within the Specific Plan Area. According to the Stanislaus County General Plan, the west (approximately 16 acres) portion of the Specific Plan Area is designated as Commercial, whereas the remainder to the east (including the schools) is designated as Urban Transition.

According to the General Plan, the purpose of the Urban Transition designation is to ensure that land remains in agricultural usage until urban development consistent with a city's (or unincorporated community's) general plan designation is approved. Generally, urban development will only occur upon annexation to a city, but such development may be appropriate prior to annexation provided the development is not inconsistent with the land use designation of the General Plan of the affected city.

The intent of the Commercial designation is to indicate areas best suited for retail, service, and wholesaling operations.

City of Ceres 2035 General Plan

The Specific Plan Area lies entirely within the City of Ceres Primary Sphere of Influence, and within the City of Ceres' Planning Area. According to the Ceres 2035 General Plan, the Specific Plan Area is designated with a mix of Residential uses and School and Parks uses (City of Ceres 2018). The Ceres 2035 General Plan guidance was used to develop land use designations for the proposed Specific Plan. Specific Plan designations are consistent with the Ceres 2035 General Plan direction, but make some adjustments based on parcel sizes, parcel configurations, and the need to incorporate open space, access, and circulation. In addition, part of the portion designated as residential is now used by the schools.

3.12.3 Environmental Impacts and Mitigation Measures

Methodology

The analysis of population, housing, and employment impacts compares existing levels with projected levels and determines whether the anticipated growth associated with the Specific Plan is within local and regional forecasts. In addition, the analysis determines whether the Specific Plan would generate substantial growth or introduce unplanned infrastructure in the Specific Plan Area or surrounding areas. Changes to population and housing would only be considered if they would result in an adverse change on the physical environment.

At buildout, the proposed Specific Plan is estimated to provide up to 441 housing units, as shown in Table 3.12-3.

Using the average household sizes for Ceres from the 2011–2015 American Community Survey (ACS), this would equate to an estimated 1,485 persons (ACS 2015).

Specific indirect impacts associated with increased population, such as traffic congestion, air quality degradation, and noise generation, are addressed in each technical section of this EIR, as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects as a result of development of the proposed project. This section focuses on any additional impacts related to population, employment, or housing not already fully addressed and mitigated, where appropriate, in other sections of this EIR.

Table 3.12-3. Proposed Specific Plan Land Uses

Land Use	Acres	Allowable Uses	Dwelling Units	Average Household Size	Estimated Population
Low-Density Residential (LDR)	28	Single-family homes and home-based businesses	196	3.6	705.6
Medium-Density Residential (MDR)	6.6	Single-family homes using a variety of designs, multi-family housing, and home-based businesses	85	3.6	306
Higher-Density Residential (HDR)	6.4	Attached and small-lot single-family homes, multi-family, and complementary open space and public facilities	160	2.96	473.6
Total (including Parks/ Open Space, Schools, and Right of Way)	**~94 acres**		**441 units**		**1,485 persons**

Notes: The acreages for each use type may vary from that shown in the table above as roadways are aligned, lots are configured, and other site-specific elements are refined as a part of future proposed development within the Specific Plan Area.
Source: 2011-2015 American Community Survey (ACS)

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, a population or housing impact is considered significant if the proposed project would:

- induce substantial population growth in an area, either directly or indirectly; or
- displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

IMPACT ANALYSIS

IMPACT 3.12-1 *Induce Population Growth. The Specific Plan proposes development consistent with the Ceres 2035 General Plan and infrastructure is designed to serve just the Specific Plan. This impact is considered* less than significant.

The proposed Specific Plan would include the development of approximately 441 housing units. This residential development is estimated to generate approximately 1,485 new residents in Ceres. Population increases associated with development of the Specific Plan could result in gradual population growth, depending on market conditions and other factors outside the City's control. Buildout of the Specific Plan would occur along with residential and nonresidential growth throughout Stanislaus County and the region.

Population growth by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have environmental impacts through land conversions, commitment of resources, and other mechanisms. Implementation of the proposed Specific Plan would directly facilitate population growth through the construction of homes and could indirectly facilitate population growth through the development of infrastructure, which could lead to additional housing development. That said, the Specific Plan Area was designated for development by both the City and the County. Chapter 7 of the Specific Plan describes how infrastructure will be installed to meet the needs of the Specific Plan

Area, without inducing growth. Infrastructure improvements will be phased with development. The Specific Plan will provide a roadway connection or connections that stub to the south, which could be useful to future development, but this area has been planned for eventual development as a part of the Ceres 2035 General Plan as shown on Exhibit 2-4 (see Chapter 2, "Project Description").

Implementation of the proposed Specific Plan is expected to increase the number of residents of Ceres. Impacts associated with the development needed to accommodate increased population are evaluated in the appropriate sections of this EIR (i.e., air quality, biological resources, traffic and transportation, noise).

Mitigation Measure

No mitigation measures are required.

Significance after Mitigation

Mitigation presented throughout this EIR addresses directly the environmental issues associated with buildout of the Specific Plan. The purpose of the proposed project itself is to promote a distinct neighborhood with a variety of housing types. The Specific Plan would accommodate approximately 441 new housing units and 1,485 residents. The Specific Plan is consistent with the Ceres 2035 General Plan land use designations (City of Ceres 2017). The impact is **less than significant.**

IMPACT 3.12-2 *Potential Displacement of On-site Residential Structures. Implementation of the proposed Specific Plan could potentially result in the demolition of six existing residences and associated structures. This impact is considered* less than significant.

There are six existing single-family homes within the Specific Plan Area on lots between approximately ½ acre and 2 acres in land area. Implementation of the Specific Plan could potentially result in the demolition of these residences if the owners choose to sell or develop their property. However, the owners would develop or sell their properties at their own discretion and would not be forced to displace residents. The removal of housing itself is not an adverse physical environmental effect. However, the removal of substantial amounts of housing could potentially lead to housing construction elsewhere that could have adverse environmental effects. In the case of the Specific Plan, the possible removal or relocation of as many as six homes would not lead to the construction of substantial amounts of housing elsewhere that could have a significant environmental impact. This EIR addresses impacts associated with implementing the Specific Plan throughout the technical sections in Chapter 3. This impact is considered **less than significant**.

Mitigation Measure

No mitigation measures would be required.

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3.13 PUBLIC SERVICES AND UTILITIES, INCLUDING RECREATION AND ENERGY

This section provides an overview of impacts related to the provision of public services and facilities, including fire protection, law enforcement, public schools, and parks and recreation; as well as utilities and service systems, including water supply, wastewater service, and electrical, natural gas, and communications infrastructure.

Impact analysis is focused on expansions or extensions to utilities and public services associated with the proposed Specific Plan that could cause potentially adverse physical environmental effects. Impacts related to stormwater management are addressed in Section 3.9, "Hydrology and Water Quality."

In addition, this section considers the energy needs for the proposed Specific Plan; the benefit of existing regulations that require energy-efficient construction and operation; and the potential for the proposed Specific Plan to result in the wasteful, inefficient, and unnecessary consumption of energy.

3.13.1 EXISTING CONDITIONS

FIRE PROTECTION SERVICES

The Ceres Fire Department provides fire protection and emergency medical services, as well as hazardous materials mitigation, technical rescue fire investigations, and public education. The Ceres Fire Department has 14.5-square-mile service area and serves approximately 57,000 residents within the City of Ceres and its two contracted districts (CFD 2016a). The Ceres Fire Protection District, with approximately 1,900 residents, includes the unincorporated area southeast of the City limits and the Industrial Fire Protection District, with approximately 4,000 residents, serves the northern portion of the city adjacent to the Tuolumne River (Stanislaus Local Agency Formation Commission [LAFCo] 2016:46). The project site is within the Ceres Fire Protection District.

The Ceres Fire Department operates from four fire stations within the City limits. As of 2016, the Ceres Fire Department has a total of 38.5 paid positions, including a part-time secretary, one chief, three battalion chiefs, 13 fire captains, 12 engineers, and nine firefighters (Dyett & Bhatia 2016:88). Six of the firefighter positions are funded by a grant that expires in March 2018, and one of the captain positions is paid for by Stanislaus County as part of the Regional Fire Investigations Unit (Dyett & Bhatia 2016:88).

The closest Ceres Fire Department stations to the project site are Fire Station 1 located at 2727 3rd Street, approximately 1.6 miles west of the project site, and Fire Station 4 located at 3101 Fowler Road, approximately 0.9 mile north of the project site. Fire Station 1 is equipped with one Type III engine, one rescue engine, and one grass engine (CFD 2016b). Fire Station 4 is equipped with one ladder truck and one rescue boat (Ceres Fire Department 2016b). Fire Station 1 or Fire Station 4 would provide first response service to the Specific Plan Area.

The Ceres Fire Department does not have service ratio standards but does aim for the National Fire Protection Association's National Response Time Standard of responding within nine minutes of the dispatch notification at least 90 percent of the time. The Ceres Fire Department responded to approximately 4,758 calls with an average response time for fire and emergency calls was less than five minutes in 2014 (Ceres Fire Department 2016a, Dyett & Bhatia 2016:88).

The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates the highest firefighting capability. The Ceres Fire Department's ISO rating for the City of Ceres and Ceres Fire Protection District is 3 and the ISO rating for the Industrial Fire Protection District is 9 (Dyett & Bhatia 2016:88).

The Ceres Fire Department maintains automatic aid agreements with the Modesto Fire Department and the Stanislaus Consolidated Fire Protection District for freeway rescues, swift water rescues, and second alarm structure fires. In addition, the City is a member of three joint powers agreements (JPAs): the Regional Fire Authority, the Stanislaus County Arson Taskforce, and the Modesto/Ceres Fire JPA for the Industrial Fire District. The Ceres Fire Department also participates with other agencies in the Stanislaus County Joint Hazardous Materials Response Team, Technical Rescue Response Team, and the Countywide Standardization of Fireground Operations (Stanislaus LAFCo 2012).

Funding for the Ceres Fire Department's operations is provided by the City's General Fund and Measure H Sales Tax. The City requires the payment of a one-time public facilities fee for any new residential, commercial, or industrial development. In addition, annual community facilities district fees allows the Ceres Fire Department to maintain an adequate service level as new residential, commercial, and industrial development occurs by ensuring new development pays for its pro-rata share of new firefighters (City of Ceres 2016a:1-56).

LAW ENFORCEMENT SERVICES

Stanislaus County Sheriff's Department

The Stanislaus County Sheriff's Department provides police protection throughout the unincorporated areas of the county, including the project site, and provides contractual law enforcement services for the cities of Riverbank, Patterson, Waterford, and Hughson (Stanislaus County Sheriff's Department 2016). The Sheriff's Department is headquartered at 250 East Hackett Road, approximately 4 miles southwest of the project site.

In addition to the Stanislaus Regional 911 operations, the department includes investigations, patrol operations, the coroner's division, public safety, the men's jail, inmate programs and jail alternatives, adult detention, and court services. The Sheriff's Department includes a K9 unit, a mounted unit, a bomb squad, and other special teams.

City of Ceres Police Department

The Ceres Police Department provides law enforcement services to the City of Ceres. The Ceres Police Department is headquartered at 2727 3rd Street, approximately 1.6 miles west of the Specific Plan Area. The Ceres Police Department includes patrol operations, which includes a patrol unit, a canine unit, SWAT, hostage negotiations team, neighborhood enhancement team, and communications, and special operations consisting of a traffic unit, detective bureau, records section, and street crime unit. The CDP provides a variety of volunteer positions that include parking enforcement, supplemental traffic control, assistance at City-sponsored special events, and serving of subpoenas.

The CDP provides a full range of police services with 46 sworn officers and 31.5 support personnel in the 2016/2017 fiscal year (City of Ceres 2017:6-51). The service ratio of 1.11 sworn officers per 1,000 persons is

slightly under the department goal of 1.3 officers per 1,000 (City of Ceres 2018). The CDP estimates that approximately 20 new officers are required to meet the service ratio goal (City of Ceres 2016a:1-56).

The Ceres Police Department responded to 32,058 calls for service in 2015. Violent crime (i.e., homicide, robbery, and aggravated assault) decreased by 18.1 percent and property crime (i.e., burglary, larceny, and auto theft) decreased by 1.4 percent from 2014 totals (CPD 2015). The department's goal is to respond to Priority One calls (those involving a violent crime in-progress or other life-threatening emergency) within five minutes. The Ceres Police Department's average response time was between 5 to 15 minutes, depending on the time of day and priority, in 2015 (City of Ceres 2016a).

Funding for the Ceres Police Department's operations is provided by the City's General Fund, Measure H Sales Tax, State Traffic Safety fund, Abandoned Vehicle Fund and Supplemental COPS program. The City requires the payment of a one-time public facilities fee for any new residential, commercial or industrial development to mitigate the impacts to its police services. In addition, annual community facilities district fees allows the Ceres Police Department to maintain an adequate service level as new residential development occurs by ensuring new development pays for its prorate share of new police officers (City of Ceres 2016a:1-56).

California Highway Patrol

The California Highway Patrol (CHP) provides traffic regulation enforcement, emergency management, and assistance on State highways, interstate highways, and other major roadways in unincorporated portions of Stanislaus County. The Specific Plan Area is located within the CHP Central Division, which is comprised of 15 area offices, one commercial vehicle enforcement facility, three Communications and Dispatch Centers, an Air Operations Unit, the El Protector Program and Safety and Farm Labor Vehicle Education, and Investigative Services Unit, and a Multidisciplinary Accident Investigation Team (CHP 2016).

PUBLIC SCHOOLS

The Specific Plan Area is located within the Ceres Unified School District (CUSD) boundaries. The CUSD provides educational services for students in elementary (grades K–6), junior (grades 7–8), and high (grades 9–12) school. Seven of the schools within the City's Planning Area are currently located within unincorporated Stanislaus County, including two in the Specific Plan Area, and 16 are located within city limits, including 13 elementary schools, 3 junior high schools, 1 high school, 1 alternative school, 1 adult school, and 3 charter/private schools (Dyett & Bhatia 2016:82). Enrollment for the 2015–2016 school year for the entire CUSD was14,269 students: 7,359 elementary; 1,996 junior high students; 3,934 high school, alternative school, and adult school students; and 980 charter school students (California Department of Education 2016).

The La Rosa Elementary School and Cesar Chavez Junior High School are located within the Specific Plan Area and Central Valley High School is located 2.5 miles southwest of the Specific Plan Area. Table 3.13-1 shows 2015–2016 enrollment, design capacity, and estimated remaining capacity for each school.

La Rosa Elementary School is located at 2800 Eastgate Boulevard and serves elementary students in grades K–6. La Rosa Elementary School was completed in 2006 and has 33 classrooms, a cafeteria, library, one computer lab, and an administration office (CUSD 2016a). As shown on Table 3.13-1, the La Rosa Elementary is currently below capacity.

Cesar Chavez Junior High School is located at 2701 Eastgate Boulevard and serves middle school students in grades 7–8. Cesar Chavez Junior High School was opened in 2011 and includes classrooms, library, multipurpose room, dance studio, music building, art room, and a newly constructed gymnasium (CUSD 2016b). The grounds include ¼ mile track, football field, basketball courts, softball diamond, and a baseball diamond. As shown on Table 3.13-1, the Cesar Chavez Junior High School is currently below capacity.

Central Valley High School is located at 4033 South Central Avenue and serves high school students in grades 9–12. Central Valley High School was opened in 2005 and includes 60 classrooms and dance, wrestling, choir, and band rooms (CUSD 2016c). As shown on Table 3.13-1, the Central Valley High School is currently exceeding capacity.

Table 3.13-1. Ceres Unified School District Enrollment, 2015–2016

School Name	Grade	Enrollment	Design Capacity	Estimated Remaining Capacity
La Rosa Elementary School	K–6	649	830	181
Cesar Chavez Junior High School	7–8	630	760	130
Central Valley High School	9–12	1,834	1,760	-74

Note: Student enrollment in the district changes daily as more students enroll and others leave.
Source: California Department of Education 2016, Dyett & Bhatia 2016:85

CUSD prepared a *School Facilities Needs Analysis* in 2015 to provide updated student generation rates and to determine the approximate number of new students generated by new residential development between 2015 and 2020. Based on information from the City of Ceres Planning Department, it is estimated that approximately 919 new residential units will be constructed within the CUSD over the 5-year period, most of which will be single-family units (CUSD 2015:10). In total, new residential developments are expected to generate 775 new unhoused students by 2020. Using the CUSD's student generation rates, this would include approximately 387 elementary school students, 127 middle school students, and 261 high school students (CUSD 2015:25). The CUSD has determined that elementary and middle schools have capacity at existing school for future students over the next 5 years (CUSD 2015:13). However, the CUSD's high schools are currently exceeding capacity and the CUSD does not own surplus property on which to construct new high schools (CUSD 2015:13).

CUSD Funding

The CUSD is funded by the State School Facility Program, a General Obligation bond, and developer impact fees. Under the State School Facility Program, the State provides "regular grants," which amount is assumed to be 50 percent of the cost of housing one student who is unhoused. The CSUD is responsible for a 50 percent match. The CUSD passed a $60 million General Obligation Bond in November 2008. This bond will be utilized to construct a new junior high school, replace portable classrooms, and to improve facilities (CUSD 2015:13).

Developer fees represent a major source of funding for the District and are committed to payments on leased portable buildings, placing of new relocatables, and repayment of debt for facilities, in addition to matching funds for future projects (CUSD 2015d:14). The CUSD's school facility needs analysis demonstrated the need to levy Level II and Level III developer fees (described below in "Regulatory Framework"). As of November 2017, Level II fees are $3.82 per square foot and Level III fees are $7.64 per square foot for residential construction (CUSD 2017:2).

PARKS AND RECREATIONAL FACILITIES

The City of Ceres currently provides residents with 13 City parks and owns parkland totaling over 170 acres of land. River Bluff Regional Park is the largest of these with a total of 76 acres of developed and undeveloped parkland. Many City parks are less than five acres and serve the immediately surrounding neighborhoods. Private parks contribute approximately four acres to the City's total parkland. Two mid-sized parks and one smaller park are planned for development, totaling about 22.5 acres of new parkland. As of 2016, considering gated private parks and City-owned as-yet undeveloped parkland, the City provides about 4.2 acres of parks per 1,000 residents (Dyett & Bhatia 2016:81). This is more than the City's goal of 4 acres of parkland per 1,000 residents (City of Ceres 2016b:14).

Four parks are within a one-mile radius of the Specific Plan Area (Exhibit 3.13-1):

- Neel Park is approximately 8.15 acres and includes a multi-use turf field, dog park, play equipment, small shade structure and a half basketball court;
- Persephone Park is approximately 3.14 acres and includes barbeques, tables, benches, a multi-use turf field, and play equipment;
- Roeding Heights Park is approximately 6.10 acres and includes barbeques, tables, benches, a group shade structure, baseball field, a basketball court, and tennis courts; and
- Smyrna Park is Community Park and is approximately 27.88 acres and includes multiple picnic areas, horseshoe pits, sand volleyball courts, playgrounds, baseball and softball fields, a skate park, restrooms, and a rose garden.

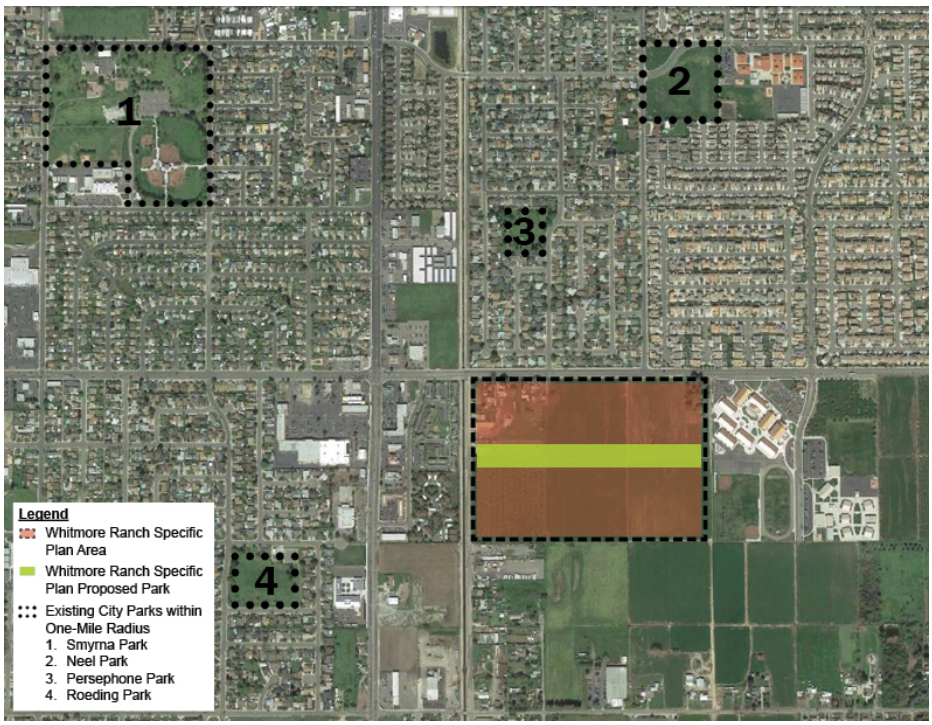


Exhibit 3.13-1 Existing City Parks Near the Specific Plan Area

The City maintains a joint-use agreement with the Ceres Unified School District for shared use of school grounds outside of school hours for the benefit of the community. Cesar Chavez Junior High School is located within the Specific Plan Area and the grounds include ¼ mile track, football field, basketball courts, softball diamond, and a baseball diamond. The City partners with the school to use these facilities (City of Ceres 2016b:8).

The City's General Fund currently supports staffing of the division and maintenance personnel to perform maintenance duties at the City's park facilities. Other sources of funding for parks and recreation facilities include development-related park mitigation fees; special funding districts, such as landscape and lighting district, open space maintenance district, and Mello-Roos or community facilities districts; programming and rental fees; and community partnerships. Future sources of funding could include bonds, crowdfunding, public-private partnerships, and "friends of the parks" programs (City of Ceres 2016b).

WATER

The City owns, and the Public Works Department operates and maintains a public water-supply system. The Public Works Department provides groundwater to approximately 11,646 residential, commercial, industrial and institutional/government service connections (City of Ceres 2016:3-1). The City's service area encompasses an area of approximately 5,989 acres, or about 9.4 square miles (City of Ceres 2016c:3-1). While the City's existing service area is generally contiguous with the City limits, there is a section in unincorporated Stanislaus County, which includes the La Rosa Elementary School and Cesar Chavez Junior High School within the Specific Plan Area and areas generally southwest of State Route 99, east of Blaker Road, and north of the southern boundary of the City's sphere of influence that receives water from the City, as well as a section in the northwestern portion of the City that receives water service from the City of Modesto.

Water Supply Infrastructure

The City has approximately 154 miles of water system pipelines that range in size from 4 to 24 inches. The City maintains 12 active groundwater wells throughout the City. Approximately 45 percent of the wells do not require water quality treatment and 55 percent require wellhead treatment or blending (City of Ceres 2012:2-15). The active wells have been constructed to a total depth ranging from 180 feet to 425 feet.

There are two ground-level water storage tanks (reservoirs) located adjacent to each other at Blaker Road and have a combined storage capacity of 3.8 million gallons. The reservoirs have an associated booster pump station to pump water from the reservoirs into the distribution system. During periods of high demand, water is pumped from the tanks into the distribution system to supplement well supplies.

The Water Supply Master Plan identifies a new 16-inch water main along Whitmore Avenue that would be required to serve buildout of the City's Planning Area (West Yost Associates 2011).

Currently, the undeveloped portions of the Specific Plan Area are not served by public water supply infrastructure. A 12-inch water main is located within Eastgate Boulevard, and this pipeline provides potable water supplies to the La Rosa Elementary School and Cesar Chavez Junior High School (Exhibit 3.13-2). Additional water transmission pipelines in the vicinity of the Specific Plan Area include 8-inch water mains in Lunar Drive and Boothe Road, a 12-inch water main within Whitmore Avenue that runs from Lunar Drive to areas east of the Specific Plan Area, and a 12-inch water main located in Mitchell Road (West Yost Associates 2011, Dyett & Bhatia 2016:Figure 7-1).

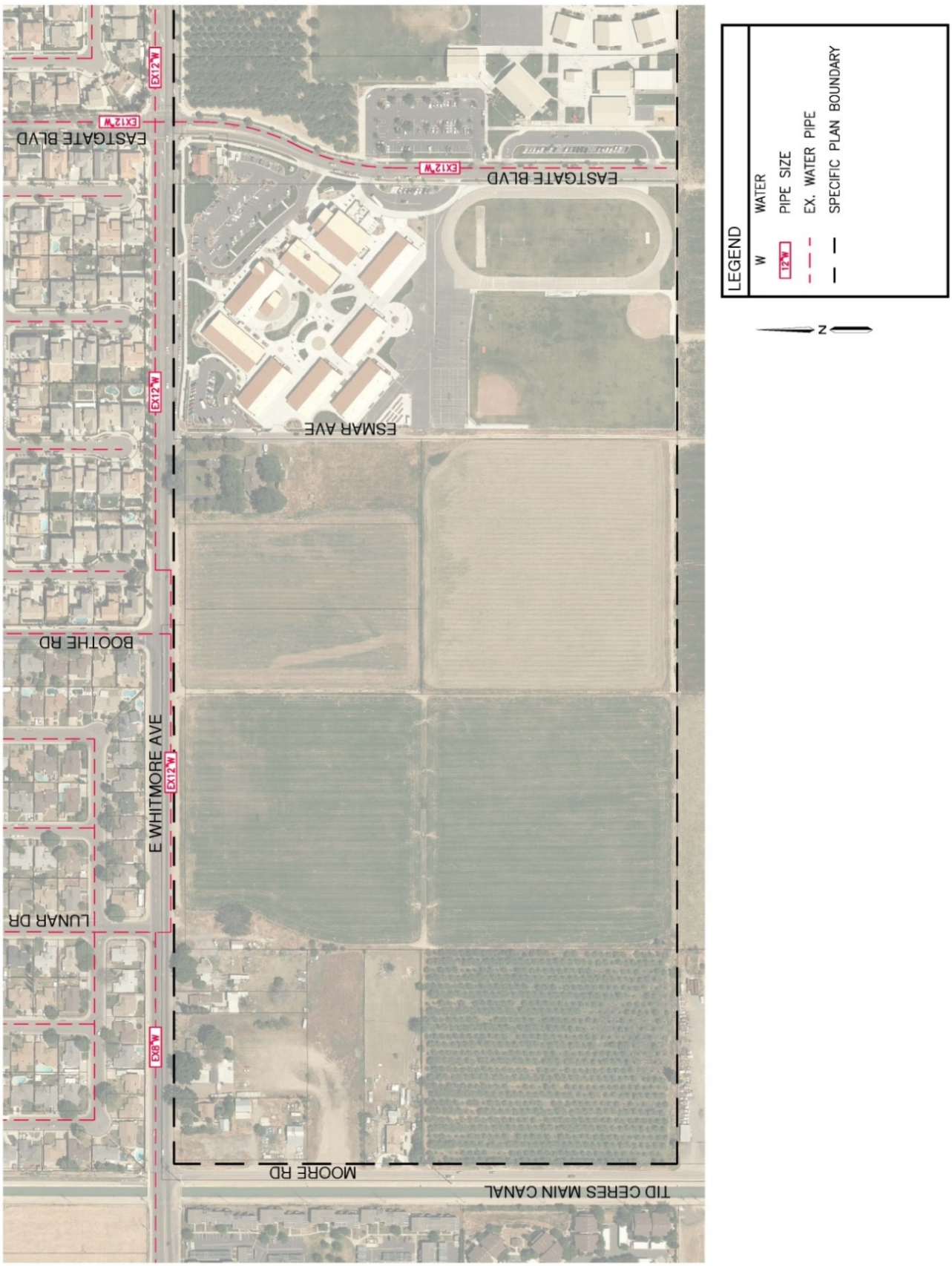


Exhibit 3.13-2 Existing Water Facilities

Existing Water Supplies

Existing water demands in the City are currently met by groundwater supplies. The City's service area is located within the San Joaquin River Hydrologic Region and overlies the Turlock Groundwater Subbasin of the San Joaquin Valley Groundwater Basin (California Department of Water Resources Subbasin Number 5-22.03). The Turlock Subbasin has not been adjudicated nor has not been identified as being in overdraft (City of Ceres 2016c:7-2). The subbasin stores approximately 50 million acre-feet of groundwater (Dyett & Bhatia 2016:65). The sustainable yield of the Turlock Subbasin is currently unknown (West Yost Associates 2011). Between 1992 and 2012, groundwater levels were in balance with about the same amount of outflow as inflow (Dyett & Bhatia 2016:65). Groundwater levels in the subbasin underlying the City have dropped 15 to 20 feet between 2014 and 2016 as a result of the drought. As discussed further below, the City has entered into a water sales agreement with the Stanislaus Regional Water Authority (SRWA) for delivery of surface water. The increase in surface water deliveries within the basin are expected to have a positive impact on groundwater recharge within the region (See Section 3.9, "Hydrology and Water Quality," for a detailed description of the Turlock Subbasin.)The City's existing wells have a reliable pumping capacity of 12,700 gallons per minute (gpm). In 2015, the City pumped 2,104 million gallons, with an average of 5.8 million gallons per day (mgd) (City of Ceres 2015). The pumping capacity for the City during 2015 was 11,566 gpm (City of Ceres 2015).

Between 2005 and 2015, total well production has steadily decreased from a high of 3,888 million gallons (11,932 acre-feet per year [afy]) in 2007 to a low of 2,104 million gallons (6,457 afy) in 2015 (City of Ceres 2015:3). The steady decline in water production between 2007 and 2015 is a result of installation of water meters, implementation of water conservation measures, and compliance with Senate Bill (SB) x7-7 (City of Ceres 2016c).

Two active groundwater wells are located in the vicinity of the Specific Plan Area. The Roeding Heights groundwater well is located east of Moore Road near the intersection of Stanford Avenue and Vernal Drive and is inactive at this time due to high levels of naturally occurring Uranium. The Eastgate well is located north of the Specific Plan Area and has a pumping capacity of 1,150 gpm (City of Ceres 2012:2-16). Potable water is supplied to La Rosa Elementary School and Cesar Chavez Junior High School from the Eastgate well (Dyett & Bhatia 2016:Figure 7-1). The combined water supply demand at La Rosa Elementary School and Cesar Chavez Junior High School is 33.3 gpm. Water supplies for agricultural uses and six residences on the site are provided by private wells for domestic use and by Turlock Irrigation District for agricultural uses. As shown on Table 3.13-2, the total annual water usage for agricultural crops on the Specific Plan Area is 156 afy.

Projected Water Demands

The City's UWMP, which was adopted by the City Council on June 27, 2016, addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled water use within the City's service area. In accordance with SBx7-7, the UWMP estimates water demands are based on an estimated gallons per capita per day target chosen by the City.

Table 3.13-2. Estimate of Crop Water Usage within the Specific Plan Area

Crop Type	Average Annual Water Use per Acre (afy)	Estimated Acres within Specific Plan Area	Usage (afy)
Alfalfa	5.0	20	100
Fallow Alfalfa	--	8	0
Almond Orchard	3.5	12	42
Oat and Rye Hayfield	1.4	10	14
Non-Crop uses (playfield, school, residential)	N/A	44	N/A
Total		**94**	**156**

Notes: afy = acre-feet per year

Note: Average acre-feet applied per acre values used from Johnson and Cody 2015. For hay grass, the value for grains was used. For vineyard, the value for vines was used.

Source: Average Annual Water Use per Acre from Johnson and Cody 2015.

Projections of future population within the District's service area have been made by taking the estimated buildout projections made in the 2010 Water Master Plan and increasing by 4.8 percent for each five year's until buildout (City of Ceres 2016c:125). The water supply demands for the Specific Plan Area were accounted for in water demand projections contained in the City's UWMP (City of Ceres 2016c). Table 3.13-3 summarizes the City's actual and future water demands over the UWMP's 20-year planning period (i.e., 2015 to 2035) during normal water years. The City expects water demands in single-dry years will be the same as normal water years and this would be consistent over multiple-dry years. As shown in Table 3.13-3, water demands are expected to increase from 6,457 afy in 2015 to 18,431 afy in 2035 at buildout of the City.

Table 3.13-3. Actual and Project Water Demand, 2015–2035

Year	Production (afy)
2015	6,457
2020	10,756
2025	13,014
2030	15,261
2035	18,431

Notes: afy = acre-feet per year

Source: City of Ceres 2016c

The City of Ceres historic groundwater production averaged 2,843 million gallons per year (8,724 afy) between 2005 and 2015. The City anticipates groundwater supplies will be used to meet all of the City's current water needs through 2020 (City of Ceres 2016c:7-5). The City, as a member of the SRWA, has entered into a water sales agreement for delivery of 1,825 million gallons per year (5,600 afy) of Turlock Irrigation District (TID) surface water (City of Ceres 2016c:6-5). The SRWA's Regional Surface Water Supply Project will include numerous improvements within the cities of Turlock and Ceres to pump water from the Tuolumne River, treat it to drinking water standards, and then deliver it to the City's service area (Dyett & Bhatia 2016:129). TID anticipates providing the City with surface water supply starting in 2022 (City of Ceres 2016c:6-1).

The increase in surface water deliveries within the basin as a result of the SRWA Regional Surface Water Supply Project are expected to have a positive impact on groundwater recharge within the region as (1) a portion of the

recharge water will have originated outside of the basin, contributing towards a net basin inflow, and (2) the quantity of groundwater pumping by the City will decrease (City of Ceres 2016c:7-6).

Table 3.13-4 identifies groundwater and surface water supplies and demand within the City over the UWMP's planning period in normal, single-dry, and multiple-dry years. In all year types, if demand cannot be met from surface water alone, the City plans to meet any additional demand through increased groundwater pumping, ensuring the City will maintain 100 percent supply reliability (City of Ceres 2016c:7-7). As shown in the table, water supply is projected to be sufficient to meet demand through 2035 in all water years.

Table 3.13-4. Comparison of Water Supply and Demand, 2015–2035[1]

Total Water Supplies and Demand[2]	Projected Demands (afy)				
	2015	2020	2025	2030	2035
Normal Year					
Groundwater Supply	6,457	5,156	7,414	9,661	12,831
Surface Water Supply	0	5,600	5,600	5,600	5,600
Total Demand	6,457	10,756	13,014	15,261	18,431
Difference (Supply minus Demand)	0	0	0	0	0
Single-Dry Year					
Groundwater Supply	6,457	5,156	7,414	9,661	12,831
Surface Water Supply	0	5,600	5,600	5,600	5,600
Total Demand	6,457	10,756	13,014	15,261	18,431
Difference (Supply minus Demand)	0	0	0	0	0
Multiple-Dry Years					
Groundwater Supply	6,457	5,156	7,414	9,661	12,831
Surface Water Supply	0	5,600	5,600	5,600	5,600
Total Demand	6,457	10,756	13,014	15,261	18,431
Difference (Supply minus Demand)	0	0	0	0	0

Notes: afy = acre-feet per year

[1] The City expects water demands in single-dry years will be the same as normal water years and this would be consistent over multiple-dry years and this would be consistent over multiple-dry years.

[2] In all year types, if demand cannot be met from surface water alone, the City plans to meet any additional demand through increased groundwater pumping, ensuring the City will maintain 100 percent supply reliability.

Source: City of Ceres 2016c; Data compiled by AECOM in 2017

During drought periods, the City reduces groundwater pumping through implementation of a water shortage contingency plan. The UWMP outlines three stages that have been adopted by the City in developing a water shortage contingency plan, including mandatory conservation targets of between 10 percent and 50 percent, depending on the urgency of the water shortage. The City places prohibitions on various wasteful water uses, such as exterior irrigation; car, boat, and building, washing; non-self-service commercial car washes; ornamental fountains; sidewalk and driveway washing; and filling of swimming pools (City of Ceres 2016c). In addition, the UWMP identifies demand management measures, which include water waste prevention ordinances, metering, conservation pricing, public education and outreach, programs to assess and manage distribution system real loss, and water conservation program coordination and staffing, to increase water conservation (City of Ceres 2016c).

WASTEWATER COLLECTION, CONVEYANCE, AND TREATMENT FACILITIES

The existing Ceres Sewer Service Area (CSSA) consists of approximately 4,100 acres of developed and undeveloped lands, where wastewater collection, treatment, and disposal service is provided to approximately 13,800 sewer connections. Sewer service is provided to a mix of single-family and multi-family residential uses and commercial, industrial, and institutional land uses within the Ceres City limits and to adjacent unincorporated areas of Stanislaus County. The following discussion summarizes the City's wastewater collection, conveyance, and treatment facilities.

Wastewater Collection and Conveyance Facilities

The CSSA consist of approximately 132 miles of sewer system pipelines, which range in size from 6 inches to 54 inches in diameter; 14 lift or pump stations; wastewater treatment and disposal facilities; and a wastewater effluent export pump station and pressurized force main to the city of Turlock.

The *City of Ceres Sewer System Master Plan* (Stantec 2013) (SSMP) was prepared to identify the need for expanded sewer facilities to meet the demands of planned growth. The Ceres 2035 General Plan Land Use Diagram includes the Specific Plan and identifies a mix of Residential, School, and Parks land uses (City of Ceres 2017). The Specific Plan Area is identified in the SSMP and the Ceres 2035 General Plan as being located within Area 17. Area 17 is generally bound on the north by Whitmore Avenue, on the west by Moore Road, on the east by Faith Home Road, and Roeding Road to the south. Area 17 is identified in the Ceres 2035 General Plan Land Use Diagram as potentially consisting of low-, medium-, and high-density residential uses; community and neighborhood commercial uses; light industrial uses; and schools. In addition, the SSMP and the Ceres 2035 General Plan anticipate that a 15-inch sewer truck line will be constructed in Whitmore Avenue, and that 21- and 27-inch sewer trunk lines will be constructed in a future extension of Esmar Road and Whitmore Avenue; these trunk lines will be sufficient to serve Area 17 (Stantec 2013:4-14, City of Ceres 2017:Figure 6-6).

Wastewater generated in Area 17 is conveyed to the Barbour lift station at the intersection of Whitmore Avenue and Mitchell Road. The SSMP indicated that sewer lines in Whitmore Avenue are surcharged and the Barbour's Lift Station is undersized to accommodate the upstream peak flows (Stantec 2013). However, the City has recently upgraded the capacity of the lift station and its capacity is no longer an issue to serve upstream peak flows from existing and anticipated future development, including this Specific Plan Area. The City also recently installed a 27-inch gravity main on Mitchell Road from the Barbour's Lift Station south to Service Road, as well as a 36-inch gravity main on Service Road.

In the vicinity of the Specific Plan Area, a 12-inch sewer pipeline is located within Whitmore Avenue, a 12-inch sewer pipeline is located within Faith Home Road, and a 12-inch pipeline is located within Roeding Road (Stantec 2013). An 8-inch sewer pipeline within Eastgate Boulevard collects wastewater flows generated at the La Rosa Elementary School and Cesar Chavez Junior High School and conveys them to the sewer pipeline in Whitmore Avenue, where it is then conveyed to the Barbour Lift Station (Exhibit 3.13-3). The remainder of the Specific Plan Area has no municipal sewer service.

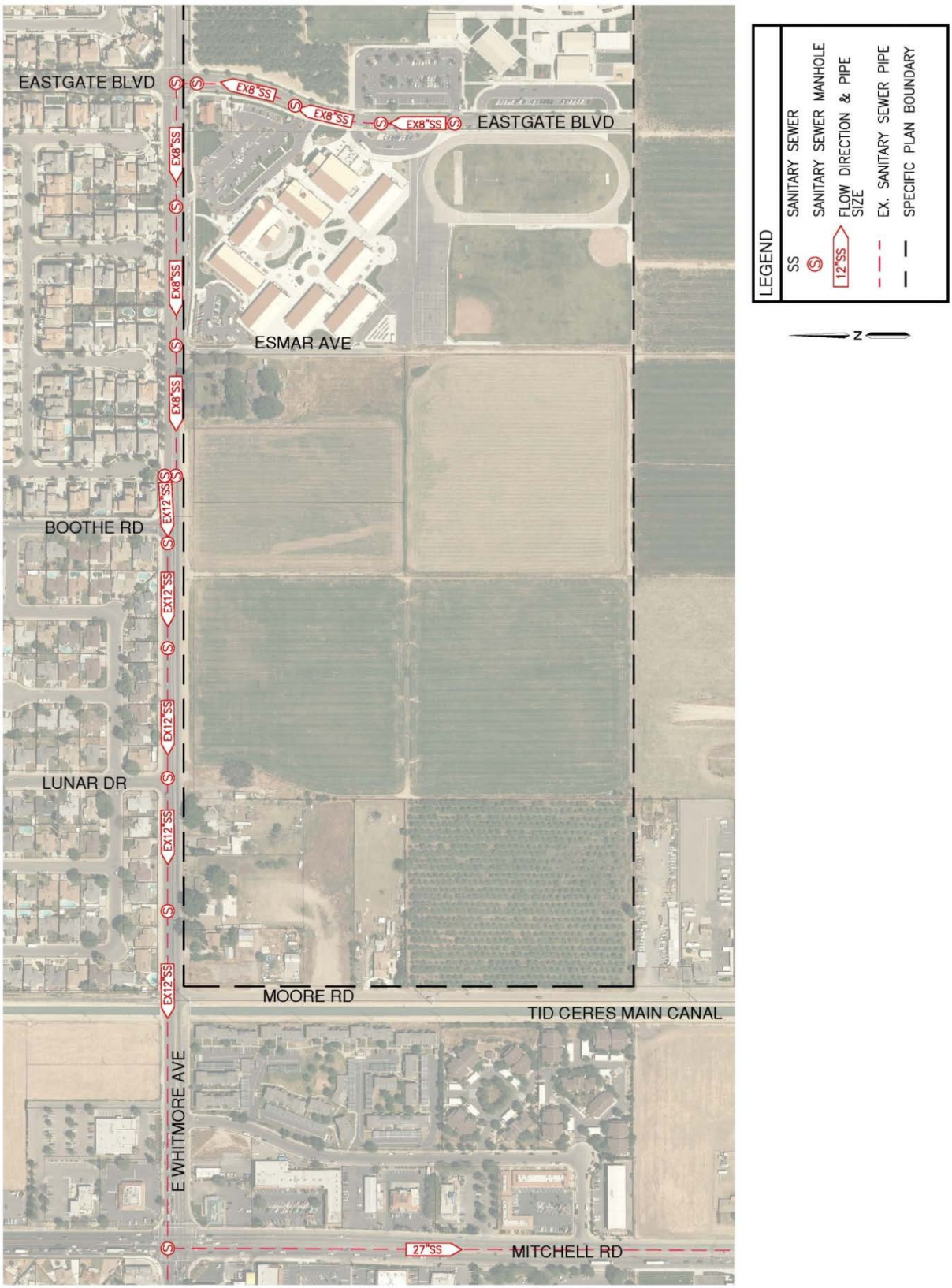


Exhibit 3.13-3 Existing Sanitary Sewer Facilities

Wastewater Treatment Facilities

The CSSA includes two disconnected service systems. The North Ceres Sewer Service Area (NCSSA) represents approximately a quarter of the CSSA service system. The NCSSA is bounded by the Tuolumne River on the north, Hatch Road on the south, Mitchell Road on the east, and South 9th Street on the west. Wastewater generated from the NCSSA generally flow to the northwest and into the City of Modesto's sewer system and is ultimately treated at the City of Modesto's Wastewater Treatment Plant (WWTP).

The remainder of the CSSA, which includes the project site, generally flows south and ultimately to the Ceres WWTP. The Ceres WWTP operates under Waste Discharge Requirements Order No. 93-237, issued by the Central Valley Regional Water Quality Control Board on December 3, 1993 (Stantec 2013). The Ceres WWTP currently has a design capacity to treat 2.8 mgd; however, the waste discharge permit limits the disposal capacity to 2.5 mgd (Stantec 2013:ES-7). To utilize the 2.8 mgd disposal capacity, the City would need a revised waste discharge permit from the Central Valley Regional Water Quality Control Board (Dyett & Bhatia 2016:132).

In addition, the City has a contract in place to send 2.0 mgd of treated wastewater, via a 12-mile force main, to the City of Turlock Regional Water Quality Control Facility for disposal. As a result, the City has a total disposal capacity of 4.5 mgd under the current discharge permit but the total discharge capacity could increase to 4.8 mgd with a revised discharged permit (Stanislaus LAFCo 2012, Dyett & Bhatia 2016:132).

Between 1999 and 2008, the average dry-weather flow to the City's WWTP increased from approximately 2.5 mgd to about 3.1 mgd. The average dry-weather flow decreased to approximately 2.4 mdg from 2010 to 2015 as a result of slower rates of development and water conservation measures (Dyett & Bhatia 2016:132). As of 2016, the Ceres WWTP treats approximately 2.4 mgd average dry-weather flow (City of Ceres 2017:Table 6-6), and 1.3 mgd average dry-weather flow is sent to the Modesto WWTP from the NCSSA.

Under full buildout of the Ceres 2035 General Plan, the projected average dry-weather flow to the City's WWTP is projected to be 8.1 mgd, and the 1.3 mgd average dry-weather flow from the NCSSA would continue to be sent to the Modesto WWTP. To provide long-term wastewater treatment for Ceres customers, the City plans to improve the Ceres WWTP with increased pumping capacity. The City has already addressed capacity issues in several problem areas identified in the SSMP, including the Barbour Pump Station and new trunk sewers in Service Road and Mitchell Road. In addition, the City would fund development to begin exporting wastewater to Modesto's Jennings WWTP. Ceres would also provide funding for pumps to increase capacity at Turlock's wastewater treatment facilities to handle a portion of the City's wastewater. With these planned improvements, the City would have the ability to treat increased wastewater generation as planned in the General Plan Land Use Diagram through 2035 (City of Ceres 2017:6-35).

As stated previously, the Specific Plan Area is identified in the SSMP and the Ceres 2035 General Plan as being within Area 17, and the City estimates that buildout of Area 17 would generate a peak flow of 1.33 mgd (Stantec 2013:4-14, City of Ceres 2017:Figure 6-6). Currently, the La Rosa Elementary School and Cesar Chavez Junior High School generate 0.254 mgd of wastewater that is conveyed to the Ceres WWTP.

SOLID WASTE

Solid waste is collected in the city and disposed of at the Fink Road Landfill, located at 4000 Fink Road, and then processed at the Stanislaus Resource Recovery Facility, located at 4040 Fink Road, which is a waste-to-energy (WTE) facility.

The Stanislaus Resource Recovery Facility has a maximum permitted throughput of 1,700 tons per day (tpd) and has a total permitted capacity of 3,200 tpd (CalRecycle 2016a). The landfill and Stanislaus Resource Recovery Facility are located approximately 22 miles southwest of the Specific Plan Area. The Stanislaus Resource Recovery Facility WTE facility disposes of at least 243,300 tons of solid waste annually (after recycling efforts of the communities), or approximately 90 percent of the waste by volume, and generates up to 22.5 megawatts of electricity. Excess electricity is sold to Pacific Gas & Electric.

The Fink Road Landfill is a Class II and Class III municipal landfill that is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, asbestos, and ash. According to CalRecycle, the Fink Road Landfill has a maximum permitted throughput of 24,000 tpd and has a total maximum permitted capacity of 14.6 million cubic yards. The Fink Road Landfill has a remaining capacity of approximately 8.2 million cubic yards (CalRecycle 2016b).

CalRecycle estimates that the Fink Road Landfill has a capacity until 2023. However, based on lower disposal rates, the County recently revised its projections for the life of the landfill to 2029 for Class III waste and 2043 for Class II (Stanislaus County 2014). In addition, the County has initiated plans for an expansion and reconfiguration of the existing facility to extend its useful life by another 10 to 15 years beyond the revised projections (Stanislaus County 2009:2-1). The expansion project would be complete prior to the scheduled original closure date of the landfill.

The California Integrated Waste Management Board of 1989 requires local agencies to implement source reduction, recycling, and composting that would result in a minimum of 50 percent diversion of solid waste from landfills, thereby extending the life of landfills.[1] For 2015, the target solid waste generation rate for Stanislaus County is 6.3 pounds per day (ppd) per resident, and the actual measured generation rate was 4.5 ppd per resident, which is approximately 1.8 ppd less than the target solid waste generation rate (CalRecycle 2016c).

ELECTRICAL SERVICE

In 2016, the total system power for California was 290,567 gigawatt hours (GWh) of electricity, of which approximately 198,227 GWh of electricity was generated in-state (California Energy Commission [CEC] 2017).

The TID generates, transmits, and distributes electrical service to approximately 109,989 electric accounts through its approximately 662-square mile service area, which includes northern Merced County, southern Stanislaus County, and small sections of Tuolumne and Mariposa counties. Approximately 72 percent of the accounts are residential, while residential use accounts for just 34 percent of the total (TID 2015a, CEC 2016a).

[1] As of 2007, the 50% diversion requirement is measured in terms of per-capita disposal expressed as pounds per day (ppd) per resident and per employee. The new per capita disposal and goal measurement system uses an actual disposal measurement based on population, disposal rates reported by disposal facilities, and evaluates program implementation efforts.

TID operates overhead transmission and distribution lines that currently serve the Specific Plan Area. Overhead lines are located along the west side of the TID Main Canal, which runs parallel to and westerly of Moore Road. TID electric facilities also exist on the north side of Whitmore Avenue. Coming from the west, electric facilities are overhead lines on poles that convert to underground lines, just west of the Boothe Road intersection at Whitmore Avenue. Underground electric facilities also are in place along Eastgate Boulevard, south of Whitmore Avenue. In 2015, TID delivered approximately 2,078 kilowatt-hours (kWh) of electricity to its customers (CEC 2016a).

TID generates power internally from a variety of sources, which changes over time. Approximately 57 percent of TID's total electricity portfolio is provided by three natural gas power plants (Walnut Energy Center, Walnut Power Plant, and Almond Power Plant), 18 percent is provided by hydroelectric facilities (the Don Pedro Dam and Powerhouse facility), 6 percent is from the Boardman coal-fired power plant, and 18 percent is from eligible renewable resources (e.g., biomass, solar, wind, geothermal, and small hydroelectric [less than 30 MW]), and less than 0.1 percent is from unspecified power sources (TID 2015b).

NATURAL GAS SERVICE

Natural gas service is provided to Stanislaus County by Pacific Gas and Electric Company (PG&E). In 2015, PG&E delivered approximately 4,434 million therms (MM therms) of natural gas throughout its service area (CEC 2016b). Approximately 4 percent or 181 MM therms of PG&E's total natural gas deliveries are provided to users in Stanislaus County (CEC 2016c).

Table 3.13-5 shows PG&E's average historic natural gas consumption and forecasts of future consumption. CEC has determined that the decrease in natural gas consumption between 2005 and 2010 resulted from both greater energy conservation and the slowdown in construction of new homes and businesses (CEC 2009:220). The average annual growth in natural gas consumption in PG&E's service area is anticipated to increase through 2024. By 2024, natural gas consumption is estimated to range between approximately 4,870 MM therms and approximately 4,909 MM therms with the average natural gas consumption anticipated to be approximately 4,888 MM therms (CEC 2013:52).

Table 3.13-5. PG&E Service Area Average Natural Gas Consumption and Forecast

Year	Consumption (MM Therms)
1990	5,275
2000	5,291
2005	4,724
2010	4,186
2015	4,761
2020	4,894
2024	4,888

Notes: PG&E = Pacific Gas and Electric Company;
MM therms = million therms; CEC = California Energy Commission
Source: CEC 2013:52

ENERGY USE FOR TRANSPORTATION

Transportation is, by far, the largest energy consuming sector in California, accounting for approximately 39 percent of all energy use in the state and 53 percent of energy spending (U.S. Energy Information Administration 2016). Since transportation accounts for more energy consumption than heating, cooling, and powering of buildings, powering industry, or any other use, project site locations, project designs, and relationships with surrounding land uses that reduce travel demand are important for consideration in an assessment of energy efficiency (Lawrence Berkeley National Laboratory 2005).

Transportation fuel has, and will continue to diversify in California and elsewhere. While historically gasoline and diesel fuel accounted for nearly all demand, there are now numerous options, including ethanol, natural gas, electricity, and hydrogen. Currently, gasoline and diesel are the primary fuels used for transportation in California, consuming 14.7 billion gallons of gasoline and 3.8 billion gallons of diesel in 2014 (CEC 2016d).

Based on data provided by the Stanislaus County Council of Governments (StanCOG) and shown in Table 3.13-6, the population and total vehicle miles traveled (VMT) in Stanislaus County are anticipated to increase from 2012 to 2040. The region is anticipated to experience an approximate 4.8 percent increase in weekday VMT per capita from 2012 to 2040, and the County is anticipated to experience an approximate 51 percent increase in total weekday VMT over this period (StanCOG 2014a, StanCOG 2014b). Despite anticipated improvements in vehicle fuel efficiency over this same time period, on-road, mobile source-related energy/fuel use is still anticipated to increase during this period.

Table 3.13-6. Existing and Projected Transportation-Related Energy Consumption in Stanislaus County (2012 to 2040)

	Year			
	2012	2020	2030	2040
VMT (1,000 VMT)[1]	7,692	8,865	10,999	11,611
Population[2]	530,000	594,000	722,000	764,000
VMT/capita	14.5	14.9	15.2	15.2

Note: VMT = vehicle miles traveled

[1] VMT is regional-wide weekday 1,000 VMT. Year 2012. 2020, 2035 and 2040 VMT were obtained from the 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Program EIR (Table 4.6-3).

[2] Population information was obtained from the 2014 RTP/SCS (Table 2.1 Regional Growth Forecast). Year 2012 was interpolated between StanCOG's 2010 and 2020 population estimates.

Source: StanCOG 2014a, StanCOG 2014b

3.13.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Environmental Protection Agency and National Highway Traffic Safety Administration

The U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) are implementing national greenhouse gas (GHG) emission and fuel economy standards for light-duty cars and trucks in model years 2012 to 2016. The second phase of the standards includes GHG and fuel economy standards for model years 2017 to 2025. The 2017 to 2025 standards are anticipated to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions. In 2025, if all standards are met through fuel

efficiency improvements, the average industry fleetwide fuel efficiency for light-duty cars and trucks would be approximately 54.5 miles per gallon (EPA 2012).

In addition to standards for light-duty cars and trucks, EPA and NHTSA are also currently implementing Phase 1 of the Medium- and Heavy-Duty Vehicle GHG Emissions and Fuel Efficiency Standards, which apply to model years 2014 to 2018. It is anticipated that medium- and heavy-duty vehicles built to these standards from 2014 to-2018 will reduce carbon dioxide (CO_2) emissions by approximately 270 million metric tons (EPA 2011). Phase 2 of these standards will apply to model years 2021 to 2027, and is anticipated to reduce GHG emissions by 1 billion metric tons (EPA 2015). In addition to the GHG reduction and fuel efficiency, the standards are anticipated to generate development and research jobs focused on advanced cost-effective technology for cleaner and more efficient commercial vehicles.

Renewable Fuel Standard Program

The 2005 Renewable Fuel Standard Program established requirements for volumes of renewable fuel used to replace petroleum-based fuels. The four renewable fuels accepted as part of Renewable Fuel Standard are biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable fuel volume requirements to year 2022. The four renewable fuels have specific renewable fuel-blending requirements for obligated parties such as refiners and importers of gasoline or diesel fuel.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting equipment.

Fire Codes and Guidelines

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety.[2]

[2] An important requirement for fire suppression is adequate fire flow, which is the amount of water, expressed in gallons per minute (gpm), available to control a given fire and the length of time that this flow is available. The availability of sufficient water flows and pressure is a basic requirement of the California Building Standards Code. The total fire flow needed to extinguish a structural fire is based on a variety of factors, including building design, internal square footage, construction materials, dominant use, height, number of floors, and distance to adjacent buildings. Minimum requirements for available fire flow at a given building are dependent on standards set in the California Fire Code. These fire flow requirements are 1,500 gpm for low- and medium-density residential (2-hour duration) and 2,500 gpm for high-density residential (3-hour duration).

Project applicants for future projects proposed within the Specific Plan Area will be required to incorporate CFC requirements. These standards address access road length, dimensions, and finished surfaces for firefighting equipment; security gate design requirements; fire hydrant placement; fire flow availability and requirements; and plan submittal requirements.

State School Funding

California Education Code Section 17620 authorizes school districts to levy a fee, charge, dedication, or other requirement against any development project for the construction or reconstruction of school facilities, provided that the district can show justification for levying of fees. California Government Code Section 65995 limits the fee to be collected to the statutory fee unless a school district conducts a School Facility Needs Assessment (California Government Code Section 65995.6) and meets certain conditions.

Senate Bill 50 (Chapter 407, Statutes of 1998) instituted a school facility program by which school districts can apply for state construction and modernization funds. This legislation imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development. It also provided the authority for school districts to levy fees at three different levels:

- **Level I fees** are the current statutory fees allowed under Education Code Section 17620. As mentioned above, this code section authorizes school districts to levy a fee against residential and commercial construction to fund school construction or reconstruction. These fees are adjusted every 2 years in accordance with the statewide cost index for Class B construction as determined by the State Allocation Board. As of November 2017, CUSD's Level II fees are $3.82 per square foot for residential development.

- **Level II developer fees** are outlined in Government Code Section 65995.5. This code section allows a school district to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multitrack year-round scheduling, having an assumed debt equal to 15–30% of the district's bonding capacity (the percentage is based on revenue sources for repayment), having at least 20% of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past 4 years that received at least 50% plus one of the votes cast. A facility needs assessment must demonstrate that the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next 5 years. As of November 2017, CUSD's Level II fees are $3.82 per square foot for residential development.

- **Level III developer fees** are outlined in Government Code Section 65995.7. This code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction if state funding becomes unavailable. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives state funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding. As of November 2017, CUSD's Level III fees are $7.64 per square foot for residential development.

Quimby Act (California Code 66477)

The Quimby Act (California Government Code Section 66477) was established by the California Legislature in 1965 to preserve open space and parkland in rapidly urbanizing areas of the state. The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is greater

than 3 acres per 1,000 residents, then the community may require dedication based on a standard of up to 5 acres per 1,000 persons residing in the subdivision based on the current ratio of parkland per 1,000 residents. If the existing amount of parkland in a community is less than 3 acres per 1,000 residents, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision.

The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan if it is to adopt a parkland dedication or fee ordinance. The City has adopted its own parkland standard that exceeds the Quimby Act standards of 3 acres per 1,000 persons. The Ceres 2035 General Plan and Title 17, Chapter 17.34 (Parks and Recreation Land) of the Ceres Municipal Code requires an acres-to-population park standard of 4 total acres of neighborhood and community parkland for every 1,000 persons living in the city. As stated in Section 3.13.1, "Existing Conditions," as of 2016, considering gated private parks and City-owned as-yet undeveloped parkland, the City provides about 4.2 acres of parks per 1,000 residents (Dyett & Bhatia 2016:81).

It should be noted that the Quimby Act applies only to the acquisition of new parkland; it does not apply to the physical development of new park facilities or associated operations and maintenance costs. Therefore, the Quimby Act effectively preserves open space needed to develop park and recreation facilities, but it does not ensure the development of the land or the provision of park and recreation services to residents. In addition, the Quimby Act applies only to residential subdivisions. Nonresidential projects could contribute to the demand for park and recreation facilities without providing land or funding for such facilities. Quimby Act fees are collected by the local agency (e.g., park district, city, or county) in which the new residential development is located.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014 provides for local control of groundwater sustainability with State oversight. The law became effective January 1, 2015 and states that groundwater resources should be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. The SGMA requires local agencies to develop and implement groundwater sustainability plans in high and medium priority groundwater basins throughout California.

Local agencies must form groundwater sustainability agencies by 2017. Then, agencies in critically overdrafted basins must develop plans by 2020, while agencies in all other high- and medium-priority basins must prepare plans by 2022. The Turlock Subbasin has been ranked as a high-priority basin and its basin plan is required to be completed by 2020 (City of Ceres 2016c:6-4).

Per a Memorandum of Understanding (MOU) was adopted in September of by 10 local agencies, including the City, the Turlock Groundwater Basin Association will likely be the groundwater sustainability agency for the purpose of developing a basin-wide groundwater management plan (City of Ceres 2016c:6-3).

Assembly Bill 1668 and Senate Bill 606

AB 1668, enacted in May 2018, requires the State Water Resources Control Board (SWRCB) and the California Department of Water Resources (DWR) to adopt long-term standards for the efficient use of water, along with performance measures for commercial, industrial, and institutional water use on or before June 30, 2022. AB 1668 requires SWRCB and DWR to conduct studies and investigations and to jointly recommend to the State Legislature a standard for indoor residential water use. AB 1668. The bill, until January 1, 2025, would establish

55 gallons per capita (gpc) daily as the standard for indoor residential water use effective immediately, through January 1, 2025. Beginning January 1, 2025, AB 1668 would establish a standard for indoor residential water use of either 52.5 gpc daily or another standard recommended by SWRCB and DWR – whichever is greater. Beginning January 1, 2030, AB 1668 a standard of either 50 gpc daily or another standard recommended by SWRCB and DWR – whichever is greater. AB 1668 would also impose civil liability (i.e., fines) against the water supplier for a violation of an order or regulation issued pursuant to these provisions. AB 1668 also requires DWR to use available data to identify small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability, and requires DWR to notify counties and groundwater sustainability agencies of those suppliers or communities. Finally, AB 1668 revises the components of required agricultural water management plans and additionally requires a plan to include an annual water budget based on the quantification of all inflow and outflow components for the service area of the agricultural water supplier, along with a drought plan describing the actions of the agricultural water supplier for drought preparedness and management of water supplies and allocations during drought conditions.

SB 606, enacted in May 2018 in concert with AB 1668, requires an urban retail water supplier to calculate an urban water use objective no later than November 1, 2023, and by November 1 every year thereafter, and to calculate its actual urban water use by those same dates. An urban retail water supplier will be required to submit a report to the department for these purposes by those dates. SB 606 authorizes SWRCB to issue information orders, written notices, and conservation orders to an urban retail water supplier that does not meet its urban water use objective. SB 606 also imposes civil liability (i.e., fines) against the water supplier for a violation of an order or regulation issued pursuant to these provisions. Finally, SB 606 requires an urban water supplier to prepare, adopt, and periodically review a water shortage contingency plan as part of its urban water management plan. The water shortage contingency plan must consist of certain elements, including, among other things, annual water supply and demand assessment procedures, standard water shortage levels, shortage response actions, and communication protocols and procedures.

California Integrated Waste Management Act

The California Integrated Waste Management Act (CIWMA) of 1989 is the result of two pieces of legislation, Assembly Bill (AB) 939 and SB 1322. The CIWMA was intended to minimize the amount of solid waste that must be disposed of by transformation and land disposal by requiring all cities and counties to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000.

The CIWMA created the California Integrated Waste Management Board (now known as CalRecycle). CalRecycle is the agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the state's waste reduction, reuse, and recycling goals. In addition to many programs and incentives, CalRecycle promotes the use of new technologies for the practice of diverting resources away from landfills. CalRecycle is responsible for ensuring that waste management programs are primarily carried out through local enforcement agencies (LEAs).

The State Water Resources Control Board and the Central Valley Regional Water Quality Control Board (RWQCB) also regulate waste disposal (the latter regulated solid waste prior to CalRecycle). In Stanislaus County, the County is responsible for undertaking the municipal solid waste management planning and compliance efforts required by CalRecycle.

The City would require residents of the Specific Plan Area to implement City recycling programs, such as curbside recycling of paper, plastics, and bottles, to ensure that solid waste is reused or recycled.

California Green Building Standards Code

The standards included in the 2016 California Green Building Standards Code (CALGreen Code) (Title 24, Part 11 of the California Code of Regulations) became effective on January 1, 2017. The CALGreen Code was developed to enhance the design and construction of buildings, and the use of sustainable construction practices, through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality (California Building Standards Commission 2016). The most significant efficiency improvements to the residential standards in the 2016 CALGreen Code include improvements for attics, walls, water heating, and lighting.

Chapter 6 of the 2016 CALGreen Code describes measures to reduce indoor demand for potable water by 20 percent and to reduce landscape water use by 65 percent. It also requires separate water meters for non-residential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects.

Chapter 7, Section 708, of the 2016 CALGreen Code requires all construction contractors to reduce construction waste and demolition debris by 50 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, the 2016 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

Projects proposed within the Specific Plan Area would be required to comply with the energy performance standards that are in effect at the time of construction.

Senate Bills 1078 (Chapter 516, Statutes of 2002) and 107 (Chapter 464, Statutes of 2006), Executive Orders S-14-08 and S-21-09, and Senate Bill 350

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Executive Order S-14-08 expanded the State's Renewable Portfolio Standard to 33 percent renewable power by 2020. Executive Order S-21-09 directs ARB under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new Renewable Portfolio Standard applies to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. Consequently, TID, will be the electricity provider for the proposed Specific Plan, and must meet the 33 percent goal by 2020. SB 350 (2015) increased the renewable requirement to 50 percent by 2030.

CEQA and CEQA Guidelines

Public Resources Code Section 21100(b)(3) recommends that EIRs include a statement setting forth measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. CEQA Guidelines Section 15126.4(a)(1) suggests that an EIR describe feasible mitigation that could minimize significant adverse impacts, including, where relevant, inefficient and unnecessary consumption of energy, when relevant. CEQA Guidelines, Appendix F, requires the potentially significant energy implications of the project to be considered in an EIR, to the extent feasible, and provides a list of energy impact possibilities and potential conservation mitigation measures.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2017) and City of Ceres 2014–2023 Housing Element (City of Ceres 2016a) related to public services, utilities, and energy are applicable to the proposed Specific Plan.

Health and Safety

- **Policy 5.K.1 Fire Safety Standards**. Require that new development meet State, County, and local fire district standards for fire protection.
- **Policy 5.K.2 Development Review**. Require that the Fire Department review all development proposals for compliance with fire safety standards.

Public Facilities and Services

- **Policy 6.A.5 School Accessibility**. Plan and approve residential uses in those areas that are most accessible to school sites in order to enhance neighborhoods, minimize transportation requirements and costs, and minimize safety problems.
- **Policy 6.A.7 Pedestrian and Bicycle Access to Schools**. Locate schools in areas with safe and convenient pedestrian and bicycle access.
- **Policy 6.A.8 Complete Streets and Safe Routes to Schools**. Implement Complete Streets and Safe Routes to Schools strategies to enable safer access to schools and enhance connectivity for all transportation modes in neighborhoods surrounding schools.
- **Policy 6.C.1 Passive and Active Recreation**. Continue to develop and expand the City's parks and recreation system to include a balance of passive and active recreational opportunities.
- **Policy 6.C.2 Population Growth**. Ensure that the development of parks and recreational facilities keeps pace with population growth within the city.
- **Policy 6.C.4 Parkland Dedication**. Continue to require that new development provide dedicated parkland, in lieu fees, or both, in accordance with the Quimby Act, to meet the recreational needs of new residents. Prefer dedication of public parkland to in lieu fees, provided that the developed parkland is open to the greater Ceres community and not privatized by its design, operation, or location.

- **Policy 6.C.5 In Lieu Fees**. Calculate park fees to enable purchase of acreage and provision of off-site improvements for 4.0 acres of parkland per 1,000 residents added. Review and update in lieu fees on a regular basis to reflect the total cost of improvements required to serve new development.

- **Policy 6.C.11 Park Design**. Consider the following factors in the design of new and upgraded parks and recreational facilities:

  - Safety;
  - Security;
  - Maintenance and staffing requirements;
  - Accessibility by various means of transportation;
  - Landscaping complementary to the surrounding environment;
  - Travel distance of users;
  - Passive vs. active use areas;
  - Restroom facilities (community and regional parks only);
  - Community input;
  - Cultural sensitivity;
  - Use of green technology in the construction and everyday use of facilities (i.e. solar panels, rainwater harvesting, rain gardens and bioswales, etc.);
  - Adequacy of off-street parking;
  - Flexibility for programming activities;
  - Tree canopy/shade; and
  - Lighting.

- **Policy 6.C.13 Drainage Detention Basins.** Allow joint use of City parks as drainage detention basins, with the park as primary use. Drainage basins that serve a dual use for public recreation must be entirely landscaped with irrigated turf and trees along the top of the basin.

- **Policy 6.C.16 Park Siting and Design**. Ensure that parks and recreation facilities are sited and designed to minimize negative impacts on surrounding residential neighborhoods (i.e., parking, lighting and glare, excessive noise).

- **Policy 6.C.21 Bicycle and Pedestrian Connections to Parks and Recreational Facilities**. Establish new and maintain existing bicycle and pedestrian network connections between parks and recreational facilities to

improve health outcomes and access to diverse programming in City park and recreational facilities. Ensure connections are well-lit, maintained, and marked with signage.

- **Policy 6.D.1 Adequate Water Supply for New Development**. Approve new development that relies on a public water system only where an adequate water supply and conveyance system already exists or will be provided.

- **Policy 6.D.2 Efficient Water Use**. Promote efficient water use and reduced water demand by:

  - Requiring water-conserving design and equipment in new construction, encouraging water-conserving landscaping and other conservation measures, and encouraging retrofitting existing development with water-conserving devices;

  - Developing public education programs targeted to residents of all ages;

  - Distributing outdoor lawn watering guidelines;

  - Continuing metering and conservation efforts and assessing the effectiveness of these programs;

  - Promoting water audit and leak detection programs;

  - Enforcing water conservation programs, including the City's Water Efficient Landscape Ordinance; and

  - Limiting a percentage of hardscape in favor of landscaping in front yard areas of residential lots.

- **Policy 6.D.3 Reclaimed Wastewater.** Investigate and promote, to the extent feasible, the use of reclaimed wastewater to offset the demand for new water supplies. Such programs may include: dual water systems for potable and non-potable water; reuse of grey water in homes or businesses for irrigation; and reuse of sewage effluent for irrigation of crops, golf courses, or city irrigation.

- **Policy 6.E.1 Wastewater Treatment Facility Capacity**. Ensure wastewater treatment facility capacity is available to serve planned urban development within Ceres.

- **Policy 6.E.2 Wastewater System Demand Reduction**. Promote reduced wastewater system demand through efficient water use by:

  - Requiring water-conserving design and equipment in new construction;
  - Providing information about water-conserving devices to property owners and residents; and
  - Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible.

- **Policy 6.E.5 Financing Wastewater System Improvements**. Finance repairs to existing and new wastewater collection, treatment, and disposal systems and facilities using transparent and fair strategies, such as development impact fees and monthly service charges.

- **Policy 6.G.1 Waste and Recycling at New Development**. Require waste and recycling collection in all new development, and require that all new development complies with applicable provisions of the City of Ceres Source Reduction and Recycling Element and the Stanislaus County Integrated Waste Management Plan.

- **Policy 6.H.1 Coordinate Utility Planning**. Work closely with utility companies to coordinate on the planning of major development projects.
- **Policy 6.H.2 Undergrounding of Utilities**. Require the undergrounding of utilities for all new development.
- **Policy 6.J.5 Designing to Improve Public Safety.** Consider public safety issues and Crime Prevention through Environmental Design (CPTED) principles in all aspects of public facility, commercial, and residential project design.
- **Policy 6.J.7 New Development Funding of Police Services**. Require new development to develop or fund police facilities, personnel, operations, equipment and maintenance that, at a minimum, maintain the response standards.
- **Policy 6.K.1 Meet NFPA Response Time Standards**. Strive to meet the National Fire Protection Association's (NFPA) National Response Time Standard of responding within nine minutes of the dispatch notification at least 90 percent of the time.
- **Policy 6.K.4 Project Review**. Endeavor through project review to control fire losses and fire protection costs through requiring use of automatic fire detection, control, and suppression systems.
- **Policy 6.K.6 New Development Funding of Fire Services**. Require new development to develop or fund fire protection facilities, personnel, and operations and maintenance that, at a minimum, maintains the above service level standards.

Housing Element

- **Policy 1.2:** The City shall encourage the use of specific plans and development agreements on large tracts of land to improve the site planning/development process and increase the predictability of the development process.
- **Policy 1.11:** The City shall encourage a mix of housing types throughout the city in order to increase residential choices. The specific mix of housing for any particular neighborhood should depend on existing land uses within and surrounding the neighborhood, the environmental characteristics of undeveloped land within the neighborhood, and the capacity of public services and facilities within the neighborhood.
- **Policy 1.18:** The City shall continue to enforce the 1988 Water Conservation Ordinance that limits landscape irrigation to three times per week.
- **Policy 6.0:** The City shall require that new residential development meets local and state requirements for energy conservation.
- **Policy 6.1:** The City shall encourage the use of energy conservation devices and passive design concepts which make use of natural climate to increase energy efficiency and reduce housing costs.

City of Ceres Parks and Recreation Master Plan

The City of Ceres Parks and Recreation Master Plan was adopted in March 2016. The Parks and Recreation Master Plan is designed to capture a specific range of information for strategic planning purposes. The master plan provides an analysis of the context and presents an inventory of Ceres park facilities, outlines community input and suggestions gathered and synthesizes these results into a set of recommendations, provides an outline for implementation, and identifies potential funding mechanisms and opportunities (City of Ceres 2016b).

City of Ceres Municipal Code

New Residential Development Operations Fee

Chapter 3.46, "New Residential Development Operations Fee," of Title 3 ensures that new residential development within the City pays for the cost of providing services to new development so that existing development will not be subject to a reduced level of service, the financial resources of the City will not be unduly burdened, and the City may continue to maintain orderly residential growth which guarantees the maintenance of essential City services to all citizens.

Each new subdivision, parcel map, or other discretionary approval for the development of real property for residential use are required, as a condition of development, to participate in the establishment of a community facilities district or be annexed to an existing district for the purpose of imposing a residential service operations fee.

Public Facilities Fee

Chapter 16.08, "Public Facilities Fees," of Title 16 establishes a uniform procedure for fairly allocating the cost of the public improvements. The fees ensure that new development pays its fair share for public facilities. The program collects fees for social services, transportation, water, sewer, drainage, fire and police protection services, parks and recreation, public works and maintenance facilities, general government, and other needs.

Parks and Recreation Land

Chapter 17.34, "Parks and Recreation Land," of Title 17 states that as a condition of approval of a tentative subdivision map or parcel map, including vesting map, the subdivider must dedicate land, pay a fee in lieu thereof, or both, at the option of the City, and pay a fee for improving the land for parks or recreational purposes according to the standards and formula contained in this Chapter and the City of Ceres Public Facility Fees program. This title determined that the public interest, convenience, health, welfare, and safety require that the general standard of four acres of land for each one thousand (1,000) persons residing within the City, as set forth in the Ceres 2035 General Plan, must be devoted to park and recreation purposes.

3.13.3 Environmental Impacts and Mitigation Measures

Methodology

Impacts related to public services and utilities attributable to the proposed Specific Plan were identified by comparing existing service capacity and facilities against future demand associated with Specific Plan implementation and identifying reasonably foreseeable service and facilities expansion required to serve the

proposed project. When possible, a quantitative comparison was used to determine future demand. Where this level of detail is not available, impacts were analyzed qualitatively.

Evaluation of potential public services and recreation impacts was based on a review of the engineering information provided by O'Dell Engineering included in Chapter 7, "Infrastructure and Public Services," of the Whitmore Ranch Specific Plan and the following planning documents:

- *Ceres 2035 General Plan* (City of Ceres 2017),
- *Ceres General Plan Update Existing Conditions Report* (Dyett & Bhatia 2016),
- *School Facility Needs Analysis for the Ceres Unified School District* (CUSD 2015),
- *City of Ceres Parks and Recreation Master Plan* (City of Ceres 2016b),
- *City of Ceres 2015 Urban Water Management Plan* (City of Ceres 2016),
- *City of Ceres Water Master Plan* (West Yost Associates 2011), and
- *City of Ceres Sewer System Master Plan* (Stantec 2013).

The evaluation of potential energy impacts used the California Emissions Estimator Model (CalEEMod), Version 2016.3.1, as well as documents and regulations pertaining to the proposed Specific Plan. Future energy demand was calculated based on proposed land uses and modeling conducted by AECOM for the greenhouse gas emissions estimates using the CalEEMod. (See Section 3.7, "Greenhouse Gas Emissions," for further discussion of CalEEMod). Implementation of the Specific Plan would require transportation energy for resident and visitor trips, deliveries, and other purposes. Future transportation energy demand estimates depend on a variety of factors including fuel prices, vehicle technologies and prices, regulatory requirements, consumer demand and preferences, and other factors. Vehicle miles traveled estimated for this EIR were used to estimate mobile greenhouse gas (GHG) emissions. Energy use for other aspects of the Specific Plan is also described qualitatively.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, an impact related to public services, including recreation, and utilities and service systems is considered significant if the proposed project would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, or parks;

- 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;

- include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment;

- exceed wastewater treatment requirements of the applicable RWQCB;

- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements;
- generate solid waste beyond the capacity of existing landfills; or
- violate federal, State, or local statutes and regulations related to solid waste.

Appendix F of the CEQA Guidelines provides guidance for assessing impacts related to energy supplies, focusing on the goal of conserving energy by ensuring that projects use energy wisely and efficiently. Because Appendix F does not include specific significance criteria, the following thresholds are based on the goal of Appendix F. Energy impacts are considered significant if the proposed project would:

- develop land uses and patterns that cause wasteful, inefficient, and unnecessary consumption of energy; or
- require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

IMPACT ANALYSIS

IMPACT 3.13-1 Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. *Implementation of the proposed Specific Plan would result in increased demand for Ceres Fire Department fire protection services and facilities. The proposed Specific Plan would not affect Ceres Fire Department response times or other performance objectives because applicants for projects proposed within the Specific Plan Area would pay the Public Facilities Fee and community facilities district fees to ensure fire protection personnel and equipment is provided to meet increased demand for fire protection services. Incorporation of all California Fire Code, City, and Ceres Fire Department requirements into future project designs would reduce the dependence on fire department equipment and personnel by reducing fire hazards. In addition, the proposed Specific Plan would not result in the construction of new or expansion of existing fire protection facilities that would create adverse physical environmental effects. Therefore, this impact is considered* ***less than significant****.*

Implementation of the proposed Specific Plan would increase demand for Ceres Fire Department fire protection facilities, equipment, and personnel. As discussed in the "Existing Conditions" section above, the Ceres Fire Department operates Station 1, which is located approximately 1.6 miles west of the Specific Plan Area at 2727 3rd, and Station 4, which is located approximately 0.9 mile north of the Specific Plan Area at 3101 Fowler Road.

The City strives to meet the National Fire Prevention Association's National Response Time Standard of responding within nine minutes of the dispatch notification at least 90 percent of the time (Ceres 2035 General Plan Policy 6.K.1). The City requires new development to fund fire protection facilities, personnel, and operations that, at a minimum, maintains the above service level standards (Ceres 2035 General Plan Policy 6.K.6).

The proposed project would require permits through the Ceres Fire Department and City of Ceres Building and Planning Division that ensure that the project provides sufficient hydrant locations, street width, circulation, and project access for fire and emergency response units consistent with the CFC and City of Ceres *Improvement Standards*, both of which identify minimum requirements for providing a reasonable level of life safety and property protection from fire hazards. Emergency access to the Specific Plan Area would be provided by Moore Road, Whitmore Avenue, and Stanford Avenue. The circulation system within the Specific Plan Area would connect adjacent neighborhoods to allow for direct access by emergency vehicles.

Project applicants for future projects proposed under the Specific Plan would be required to demonstrate to the Ceres Fire Department and the City of Ceres Building Division that applicable CFC and City standards are incorporated into project designs during review and approval of project plans prior to issuance of building permits, occupancy permits, or final inspections. Furthermore, the City requires review of proposed development projects by the Emergency Services Division of the Public Safety Department to promote public safety features in physical design (Ceres 2035 General Plan Policies 5.K.1, 5.K.2, and 6.K.4).

As discussed above, the proposed Specific Plan would not affect Ceres Fire Department response times or other performance objectives (Westbrook, pers. comm., 2017). Incorporation of all CFC, City, and Ceres Fire Department requirements into project designs would reduce the dependence on fire department equipment and personnel by reducing fire hazards. The proposed Specific Plan would not result in the construction of new or expansion of existing fire protection facilities (Westbrook, pers. comm., 2017). Therefore, there would be no significant adverse physical environmental effect associated with construction and operation of new facilities and. this impact is considered **less than significant**.

The Ceres 2035 General Plan requires new development to pays the cost of providing new public facilities and services and/ or the costs for upgrading of all existing facilities that it uses, based on the demand for these facilities attributable to the new development (Ceres 2035 General Plan Policy 6.K.6). Funding for fire protection services and facilities resulting from new construction is facilitated through the Public Facilities Fee (Title 16, Chapter 16.08 of the City of Ceres Municipal Code). In addition, Ceres requires all new development to create or be annexed into a community facilities district as a condition of approval (Title 3, Chapter 3.46 of the City of Ceres Municipal Code).

Mitigation Measure

Mitigation Measure 3.13-1: Demonstrate Payment of Public Facilities Fee and Annexation into a Community Facilities District.

Prior to the issuance of any building permit, the project applicants for projects proposed under the Specific Plan shall pay to the City the fees adopted by Chapter 16.08 of the City of Ceres Municipal Code. The fee shall be determined by the fee schedule in effect on the date the building permit application is submitted and deemed complete by City staff.

Per Chapter 13.46 of the City of Ceres Municipal Code, projects applicants for projects proposed under the Specific Plan shall be required, before the approval of final maps, to participate in the establishment of a community facilities district for the purpose of imposing a residential service operations fee, or if such district has been previously established, to annex the proposed residential project to the existing district. The community facilities district shall be established, or properties shall be annexed to an existing

district, pursuant to the provisions of California Government Code Sections 53318, et seq. The precise amount of the annual residential services operations fee to be levied against those properties included within the district shall be determined at the time of the initial formation of the district and in accordance with the statutes and laws applicable to the levying of such fees.

Significance after Mitigation

There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Implementation of Mitigation Measure 3.13-1 ensures fire protection personnel and equipment is provided to meet increased demand for fire protection services. The Public Facilities Fee establishes a uniform procedure for fairly allocating the cost of the public improvements and ensures that new development pays its fair share for public facilities. Furthermore, annexation into community facilities district ensures that new residential development pays for the cost of providing services to new development so that existing development will not be subject to a reduced level of service, the financial resources of the City will not be unduly burdened, and the City may continue to maintain essential City services.

IMPACT 3.13-2 Increased Demand for Law Enforcement Facilities, Services, and Equipment. *Implementation of the proposed Specific Plan would increase the demand for Ceres Police Department law enforcement facilities and services. The proposed Specific Plan would not affect Ceres Police Department response times or other performance objectives because project applicants for future projects proposed under the Specific Plan would pay the Public Facilities Fee and community facilities district fees to ensure police protection personnel and equipment is provided to meet increased demand for police protection services. Therefore, this impact is considered* ***less than significant****.*

After annexation, law enforcement facilities and services would be provided by the Ceres Police Department. The Ceres Police Department office is located at 2727 3rd Street, approximately 1.6 miles west of the Specific Plan Area. The Ceres Police Department's target for law enforcement is to provide 1.3 officers per 1,000 persons and to provide an average response time of 5 minutes or less for Priority 1 emergency calls. The Ceres Police Department anticipates that implementation of the proposed Specific Plan would generate the need for approximately one new officer (Smith, pers. comm., 2016).

The proposed Specific Plan would not affect Ceres Police Department response times or other performance objectives. The addition of one new officer would not result in the need for additional police protection facilities (Smith, pers. comm., 2016). Therefore, there would be no significant adverse physical environmental effect associated with construction and operation of new facilities and this impact is considered **less than significant**.

The City requires new development to fund police protection facilities, personnel, and operations that maintains minimum feasible response times (Ceres 2035 General Plan Policy 6.J.7). Funding for police services and facilities resulting from new construction is facilitated through the Public Facilities Fee (Title 16, Chapter 16.08 of the City of Ceres Municipal Code). In addition, Ceres requires all new development to create or be annexed into a community facilities district as a condition of approval (Title 3, Chapter 3.46 of the City of Ceres Municipal Code).

Mitigation Measure

Mitigation Measure 3.13-2: Implement Mitigation Measure 3.13-1 (Demonstrate Payment of Public Facilities Fee and Annexation into a Community Facilities District).

Significance after Mitigation

There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Implementation of Mitigation Measure 3.13-2 ensures new officers and police protection facilities are provided to meet increased demand for police protection services. The Public Facilities Fee establishes a uniform procedure for fairly allocating the cost of the public improvements and ensures that new development pays its fair share for public facilities. Furthermore, annexation into community facilities district ensures that new residential development pays for the cost of providing services to new development so that existing development will not be subject to a reduced level of service, the financial resources of the City will not be unduly burdened, and the City may continue to maintain essential City services.

IMPACT 3.13-3 *Increased Demand for Public School Facilities and Services. Implementation of future projects proposed under the Specific Plan would generate new students in the CUSD. Students would attend La Rosa Elementary School, Cesar Chavez Junior High School, and Central Valley High School. While it is likely that Cesar Chavez Junior High School would have sufficient capacity to accommodate all anticipated middle school students, La Rosa Elementary School and Central Valley High School would potentially have insufficient capacity to accommodate all anticipated elementary school students and high school students at buildout of the proposed project. The project applicants would pay State-mandated school impact fees and the California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. Therefore, this impact is considered* ***less than significant****.*

The Specific Plan Area is located within the CUSD boundaries and could result in the construction and occupation of up to 281 single-family dwelling units and 160 multi-family dwelling units. Based on student-yield generation rates shown in Table 3.13-7, implementation of the proposed Specific Plan would generate approximately 185 new elementary school students (grades K–6), 55 middle school students (grades 7–8), and 95 high school students (grades 9–12). This yield is a general estimate. Actual student generation could be different for different housing types and would vary according to demographic and other influences.

Students within the Specific Plan Area would attend would attend La Rosa Elementary School and Cesar Chavez Junior High School, both of which are located within the Specific Plan Area, and Central Valley High School, which is approximately 2.5 miles southwest of the Specific Plan Area. As shown in Table 3.13-1, La Rosa Elementary School and Cesar Chavez Junior High School are below capacity, and Central Valley High School is currently exceeding design capacity. It is likely that Cesar Chavez Junior High School would have sufficient capacity to accommodate all anticipated middle school students (55 new students). La Rosa Elementary School, which has a remaining capacity for 181 students, could potentially have insufficient capacity to accommodate all elementary school students (185 new students) at buildout of the proposed Specific Plan. Central Valley High School, which is exceeding capacity, would potentially have insufficient capacity to accommodate all anticipated elementary school students (185 new students) and high school students (95 new students) at buildout of the proposed Specific Plan Area. Therefore, a shortfall of elementary school and high school services and facilities would occur.

Table 3.13-7. Student-Yield Generation Rates for the Ceres Unified School District

Grade Level	Single Family (Students per Dwelling Unit)	Multi-Family (Students per Dwelling Unit)	Total Students[1]
Elementary (K–6)	0.421	0.414	185
Middle (7–8)	0.140	0.100	55
High (9–12)	0.298	0.071	95
Total Students	--	--	**335**

Note: The total number of students is based on construction of 281 single-family dwelling units and 160 multi-family dwelling units.
Source: CUSD 2015:11

Project applicants for future projects proposed under the Specific Plan would pay the State-mandated school impact fees to the CUSD that are being levied at the time of development. The City would determine the assessable square footage that would be subject to the fee at the time of development. The California Legislature has declared that payment of the State-mandated school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section 65996). Because project applicants for future projects proposed under the Specific Plan would pay State-mandated school impact fees, impacts related to school services and facilities are considered **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.13-4 Increased Demand for Parks and Recreation Facilities. *Implementation of the proposed Specific Plan would result in increased demand for new parks and recreational facilities. The proposed Specific Plan includes approximately 5.2 acres of public open space. Therefore, this impact is considered* ***less than significant****.*

Implementation of the proposed Specific Plan would result in increased demand for parks and recreational facilities. Ceres 2035 General Plan Policies 6.C.4 and 6.C.5 and Chapters 17.34 and 17.46 of the Ceres Municipal Code require a diversity of park types at a ratio of at least four acres of parkland for every 1,000 residents to meet demand. Based on the estimated 1,485 new residents generated by the proposed Specific Plan, approximately 5.9 acres of parks and open space would be required to be consistent with these Ceres 2035 General Plan policies and ordinances.

The proposed project includes approximately 5.2 acres of public open space located in the center of the Specific Plan Area. The City anticipates that this open space would provide passive recreational opportunities and stormwater management features, as well as a high-quality, east-west bicycle and pedestrian connection across the Specific Plan Area. The proposed 5.2 acres of public open space is slightly less than the 5.9 acres required to meet the City's parkland requirements.

Funding for parks and recreation facilities resulting for new construction is facilitated through the Public Facilities Fee (Title 16, Chapter 16.08 of the City of Ceres Municipal Code). This one-time fee provides financing for City public facilities, including parks, to maintain adequate levels of service and ensure that new development pays its

fair share for those public facilities. In addition, the City requires as a condition of approval of a tentative subdivision map or parcel map, the subdivider must dedicate land for development of local parks and/or, pay a park fee in lieu of land dedication (Title 17, Chapter 17.34 of the City of Ceres Municipal Code). Project applicants for future projects proposed under the Specific Plan would be required to pay in-lieu parkland fees on a fair-share basis to account for the approximately 0.7-acre shortfall between the City's parkland standard and that proposed on-site.

Residents of the Specific Plan could use on-site open space, Neel Park, Persephone Park, Roeding Park, and other parks in the unincorporated area of the County and incorporated areas of the City. Given anticipated on-site facilities relative to the overall parkland standards of the City, it is not anticipated that the proposed Specific Plan's generation of off-site demand for other recreational facilities or an increase in the use of existing regional recreational facilities would occur such that significant adverse environmental impacts would occur related to the construction or operation of new recreational facilities or deterioration of existing recreational facilities. Because the proposed Specific Plan would provide public open space and future projects proposed under the Specific Plan would pay the Public Facilities Fee, this impact is considered **less than significant**.

Physical impacts associated with construction of the proposed public open space are evaluated in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, since these facilities are considered to be part of the land uses and development consistent with the Specific Plan. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR.

Mitigation Measure

No mitigation measure would be required.

IMPACT 3.13-5 Increased Demand for Water Supplies. *Implementation of the proposed project would result in an increased demand for water supplies. The City's UWMP indicates water supply is projected to be sufficient to meet demand through 2035 in normal, single-dry, and multiple-dry years. The water supply demands for the Specific Plan Area were accounted for in water demand projections contained in the City's UWMP (City of Ceres 2016c). Therefore, sufficient water supplies would be available to meet the demands of the Specific Plan. This impact is considered* less than significant.

Potable water is supplied to La Rosa Elementary School and Cesar Chavez Junior High School primarily but not solely from the Eastgate well, which has a pumping capacity of 1,150 gpm. The combined water supply demand at La Rosa Elementary School and Cesar Chavez Junior High School is 33.3 gpm (54.0 afy). Water supplies for agricultural uses and for the six homes within the Specific Plan Area are provided by private wells and TID. The wells would be abandoned consistent with *City of Ceres Improvement Standards* after annexation and the development of those properties where those wells exist.

Historical records of groundwater pumped from the on-site well to meet existing agricultural needs indicate that total average annual production was 156 afy (0.14 mgd) for agricultural use, as compared to a total projected water demand for the proposed project of 213.8 afy (0.19 mgd) average daily demand. Therefore, the proposed project would result in an increase in overall groundwater use.

Development of the proposed Specific Plan would increase the demand for municipal water supplies. As shown on Table 3.13-8, the water supply demand for the Specific Plan would be less than anticipated in the City's Water

Master Plan. The estimated water supply demand would be approximately 213.8 afy at buildout of the Specific Plan. Excluding the current water supply demand for the La Rosa Elementary School and Cesar Chavez Junior High School (54.0 afy), the total increase in water supply demand for residential and parks/open space uses would be 159.8 afy.

The City of Ceres Water Master Plan water-demand factors were applied to the acreage for each land use designation that generates water use within the city. The City's Water Master Plan determined that water supply demand for the Specific Plan would be 183.3 afy.[3] Therefore, the water supply demand for the Specific Plan would be less than anticipated in the City's Water Master Plan.

Table 3.13-8. Whitmore Ranch Specific Plan Water Demands

Land Use Category	Unit Water Demand Factors (afy)	Land Use (Acres)	Water Demand (afy)
Low-Density Residential	3.3	28.0	92.4
Medium-Density Residential	2.9	6.6	19.1
High-Density Residential	4.3	6.4	27.5
Existing Schools	1.5	36.0	54.0
Parks/Open Space	4.0	5.2	20.8
Total	--	**82.2**	**213.8**

Notes: af/ac/yr = acre-feet per acre per year; afy = acre-feet per year.

[1] Source: West Yost Associates 2011:3-15

The City anticipates groundwater supplies will be used to meet all of the City's current water needs through 2020 (City of Ceres 2016c:7-5). The City, as a member of the SRWA, has entered into a water sales agreement for delivery of 1,825 million gallons per year (5,600 afy) of TID surface water (City of Ceres 2016c:6-5). TID anticipates providing the City with surface water supply starting in 2022 (City of Ceres 2016c:6-1).

Table 3.13-4 identifies groundwater and surface water supplies and demand within the City over the UWMP's planning period in normal, single-dry, and multiple-dry years. In all year types, if demand cannot be met from surface water alone, the City plans to meet any additional demand through increased groundwater pumping, ensuring the City will maintain 100 percent supply reliability (City of Ceres 2016c:7-7). As shown in the Table 3.13-4, water supply is projected to be sufficient to meet demand through 2035 in all water years. The water supply demands for the Specific Plan Area were accounted for in water demand projections contained in the City's UWMP (City of Ceres 2016c). Therefore, sufficient water supplies would be available to meet the demands of the Specific Plan. Therefore, this impact is considered **less than significant**.

Mitigation Measure

No mitigation measure would be required.

[3] The Water Master Planned assumed 34.7 acres of low-density residential, 14.5 acres of medium-density residential, and 6.2 acres of high-density residential land uses. The same unit demand factors identified in Table 3.13-9 were applied to these land uses. No parks or open space were anticipated within the Specific Plan Area.

IMPACT 3.13-6 Increased Demand for Water Supply Conveyance Facilities. *Implementation of the proposed Specific Plan would require construction of on-site water supply conveyance facilities. Sufficient on-site water supply facilities would be designed and sized to provide adequate service to the Specific Plan would be constructed. Physical impacts associated with construction and operations of utilities are evaluated throughout this EIR. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. The impact is considered* ***less than significant****.*

Implementation of the proposed Specific Plan would require construction of on-site water supply conveyance facilities. The on-site water system would consist of a looped trunk line system consisting of 8-inch water mains within road rights-of-way that would connect to new 16-inch water main along Whitmore Avenue. Exhibit 3.13-4 shows the proposed on-site looped system and identifies existing and proposed on-site water mains. Water transmission pipelines to distribute the water to individual residences would be constructed and would be required to be sufficiently sized to provide fire flows. Therefore, impacts associated with water supply conveyance facilities are considered **less than significant**.

Physical impacts associated with construction and operation of utilities are evaluated throughout this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, which specifically analyze the potential for project construction and implementation. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR.

The City will only approve new development that relies on a public water supply and demonstrates adequate water supply conveyance facilities exist or will be provided (Ceres 2035 General Plan Policy 6.D.1). The following mitigation measure is provided for planning purposes to ensure water supply infrastructure is designed and sized to provide adequate service to the Specific Plan.

Mitigation Measure 3.13-6: Prepare and Submit A Water Supply Conveyance Improvement Plan in Compliance with Applicable Standards and Construct Water Supply Conveyance Infrastructure Prior to Occupancy.

Projects applicants for projects proposed under the Specific Plan shall prepare a detailed water conveyance infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure, in conjunction with other site-specific improvement plans. Proposed on-site water facilities shall be designed and sized to provide adequate service to the project site for the amount of development identified in the tentative subdivision map, based on *City of Ceres Improvement Standards*. A final water conveyance infrastructure improvement plan shall be approved by the City of Ceres Engineering Division before approval of the final subdivision map and issuance of building permits from the City of Ceres Planning and Building Division. All required infrastructure shall be in place prior to occupancy of development anticipated under the proposed project.

Implementation: Project applicant and contractor(s).

Timing: Before approval of the final subdivision map and issuance of building permits.

Enforcement: City of Ceres Engineering Division and City of Ceres Planning and Building Division.

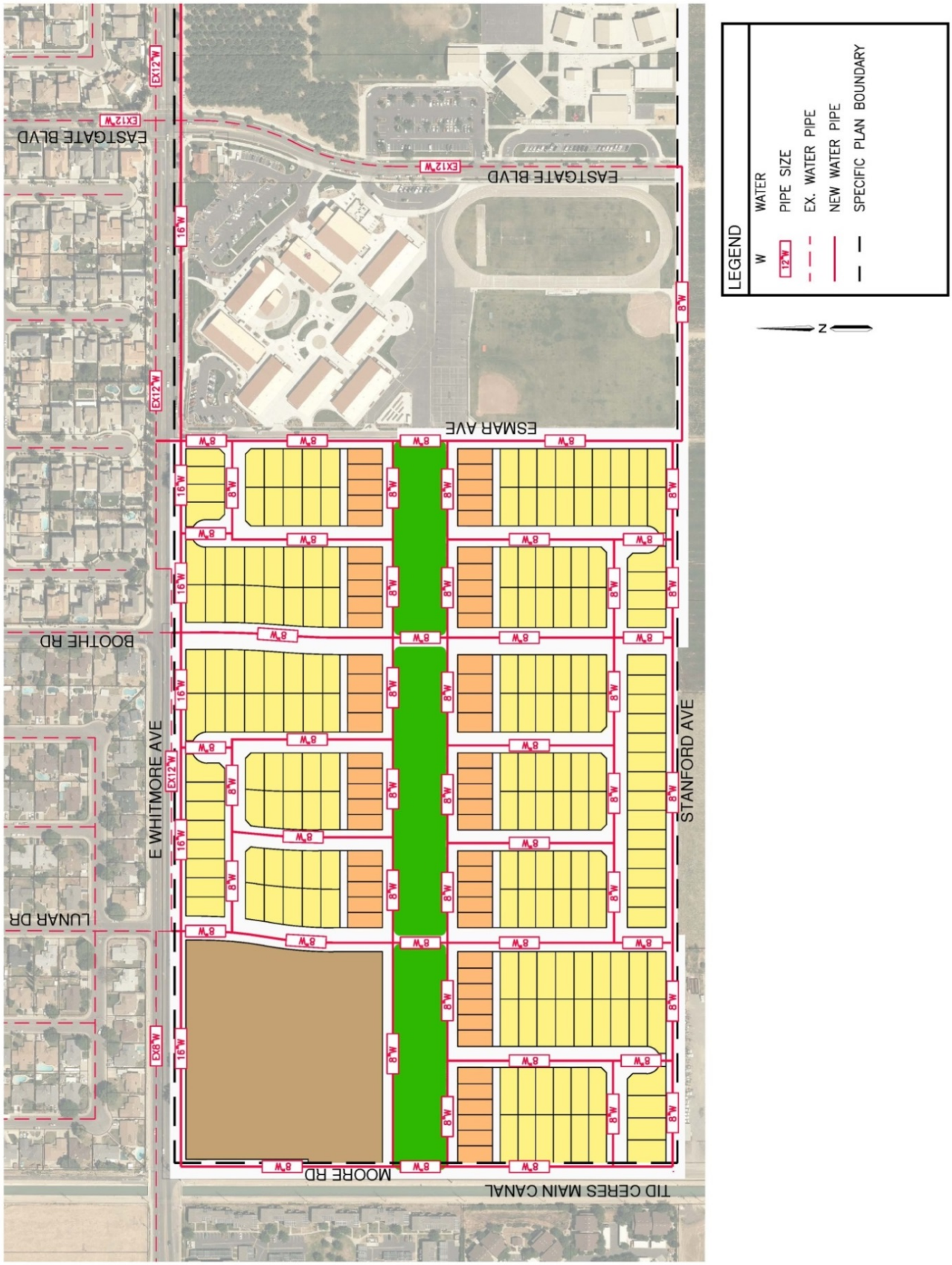


Exhibit 3.13-4 Proposed Water Facilities

Significance after Mitigation

There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Mitigation Measure 3.13-6 would ensure adequate water supply conveyance facilities would be documented before approval of the final subdivision map and issuance of building permits.

IMPACT 3.13-7 Increased Demand for Wastewater Collection and Conveyance Facilities. *Implementation of the proposed Specific Plan would require construction of on-site wastewater collection and conveyance facilities. On-site wastewater collection and conveyance facilities would be designed and sized to provide adequate service to the Specific Plan. Physical impacts associated with construction and operations of utilities are evaluated throughout this EIR. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. The impact is considered* ***less than significant****.*

The proposed Specific Plan would require construction of on-site wastewater collection and conveyance facilities. Currently, an 8-inch sewer pipeline within Eastgate Boulevard collects wastewater flows generated at the La Rosa Elementary School and Cesar Chavez Junior High School and conveys them to the sewer pipeline in Whitmore Avenue where it is then conveyed to the Barbour Lift Station (Exhibit 3.13-3). The remainder of the Specific Plan has no municipal sewer service.

The on-site wastewater collection and conveyance system would consist of 8-inch gravity sewers constructed within road rights-of-way that would convey wastewater flows to the proposed 10-inch gravity sewer in Whitmore Avenue (Exhibit 3.13-4). As stated previously in Section 3.13.1, "Existing Conditions," the Specific Plan Area is identified in the SSMP and the Ceres 2035 General Plan as within Area 17. Sewer lines within Area 17 in Whitmore Avenue are surcharged and the Barbour's Lift Station. The City has recently upgraded the capacity of the lift station and its capacity is no longer an issue to serve upstream peak flows from existing and anticipated future development, including this Specific Plan Area. The City also recently installed a 27-inch gravity main on Mitchell Road from the Barbour's Lift Station south to Service Road, as well as a 36-inch gravity main on Service Road. The two existing schools and the undeveloped parcel north of the elementary school would continue to use the existing 8-inch sewer pipeline in Eastgate Boulevard to convey wastewater flows to Whitmore Avenue. However, new development in the Specific Plan Area would not use the lift station, but rather would be routed south along Moore Road to Roeding Road, and then west to the 27-inch gravity line in Mitchell Road. Therefore, wastewater collection and conveyance facilities would be available to serve the Specific Plan. This impact is considered **less than significant**.

Physical impacts associated with construction and operation of utilities is evaluated throughout this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, which specifically analyze the potential for project construction and implementation. There are **no additional significant impacts** beyond those comprehensively considered throughout the other sections of this EIR.

The City requires project applicants to demonstrate that necessary wastewater collection and conveyance facilities are available or adequately financed before approval of proposed development (Ceres 2035 General Plan Policy 6.E.5). The following mitigation measure is provided for planning purposes to ensure wastewater conveyance infrastructure is designed and sized to provide adequate service to the Specific Plan.

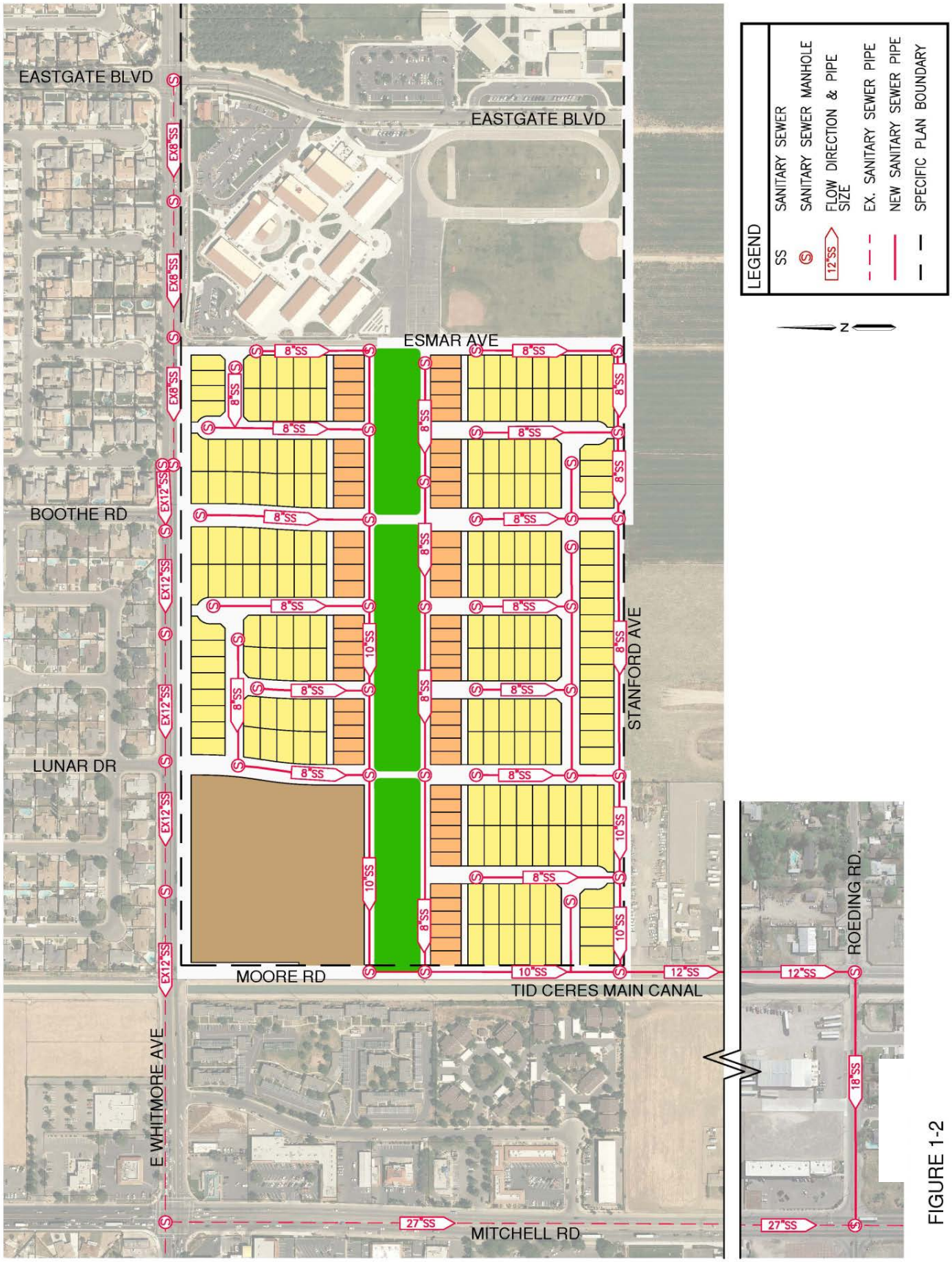


FIGURE 1-2

Exhibit 3.13-5 Proposed Sanitary Sewer Facilities

Mitigation Measure 3.13-7: Prepare and Submit A Wastewater Conveyance Improvement Plan in Compliance with Applicable Standards and Construct Wastewater Conveyance Infrastructure Prior to Occupancy.

Projects applicants for projects proposed under the Specific Plan shall prepare a detailed wastewater infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure in conjunction with other site-specific improvement plans. Proposed on-site wastewater facilities shall be designed and sized to provide adequate service to the project site for the amount of development identified in the tentative subdivision map based on the City's *Sewer System Management Plan* and the City's *Improvement Standards*. A final wastewater infrastructure improvement plan shall be approved by the City of Ceres Engineering Division before approval of the final subdivision map by the City Council. All required infrastructure shall be in place prior to occupancy of development anticipated under the proposed project.

Significance after Mitigation

There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Implementation of Mitigation Measure 3.13-7 requires a wastewater infrastructure improvement plan to be prepared and approved before approval of the final subdivision map and issuance of building permits and constructed before occupancy of development.

IMPACT 3.13-8 Increased Demand for the City of Ceres Wastewater Treatment Plant Facilities. *Implementation of the proposed project would not result in an increase in wastewater flows that would not exceed the current disposal capacity of 4.5 mgd average dry-weather flow. This impact would be* ***less than significant****.*

Table 3.13-9 shows the average dry-weather flow generated by the existing La Rosa Elementary School and Cesar Chavez Junior High School and the estimated average dry-weather flow generated by the proposed Specific Plan. The wastewater flows for each land use was calculated using the SSMP's wastewater generation rate. The estimated average dry-weather flow would be approximately 0.479 mgd at build-out of the Specific Plan. Excluding the current generated by the La Rosa Elementary School and Cesar Chavez Junior High School (0.254 mgd), the total wastewater generated by the proposed Specific Plan would be 0.225 mgd.

Table 3.13-9. Whitmore Ranch Specific Plan Wastewater Generation

Land Use Category	Number of Units	Equivalent Dwelling Units	Wastewater Generation Rate (mgd)[1]	Average Dry-Weather Flow (mgd)
Low-Density Residential	196	196	0.050	0.118
Medium-Density Residential	85	85	0.022	0.043
High-Density Residential	160	139	0.036	0.064
Existing Schools	0	1,728[2]	0.133	0.254
Total	**441**		--	0.479

Notes: mgd = million gallons per day.

[1] The wastewater generation rate for new development is 260 gallons per day per Equivalent Dwelling Unit as indicated in the City of Ceres Sewer System Master Plan.

[2] The wastewater generation rate for schools is 48 students per acre with an average per-capita wastewater flow of 77 gallons per day as indicated in the City of Ceres Sewer System Master Plan.

Source: Stantec 2013

Wastewater flows generated by the CSSA are ultimately transported to the Ceres WWTP and Turlock Regional Water Quality Control Facility for treatment and disposal. The Ceres WWTP currently has a waste discharge permit limits the disposal capacity to 2.5 mgd. The City has a contract in place to send 2.0 mgd of treated wastewater to the City of Turlock Regional Water Quality Control Facility for disposal. As a result, the City has a total disposal capacity of 4.5 mgd. As of 2016, the Ceres WWTP treats approximately 2.7 mgd average dry-weather flow.

When proposed Specific Plan-related wastewater flows (0.225 mgd) are combined with the current average dry-weather flows (2.7 mgd), implementation of the proposed Specific Plan would not result in an increase in wastewater flows that exceed the current disposal capacity of 4.5 mgd average dry-weather flow. In the long term, the SSMP and the Ceres 2035 General Plan estimate the average daily flow would be 8.1 mgd at buildout of the City's Planning Area. The City plans to improve the existing Ceres WWTP with increased pumping capacity. In addition, the City plans to fund development to export wastewater to Modesto's Jennings WWTP. Ceres would also provide funding for pumps to increase capacity at Turlock's wastewater treatment facilities for treatment of a portion of the City's wastewater flows. With these planned improvements, the City would have the ability to treat increased wastewater generation as planned in the General Plan Land Use Diagram, including the Specific Plan Area, through 2035. (City of Ceres 2017:6-35.) Furthermore, Ceres 2035 General Plan Policy 6.E.2 promotes reduced wastewater system demand in new development through efficient water use by requiring water-conserving design and equipment in new construction, and by requiring that new wastewater systems are designed to minimize inflow and infiltration to the extent economically feasible. Therefore, the City would ensure sufficient long-term wastewater treatment is available to treat wastewater flows generated at buildout of the CSSA service area, including flows generated by the proposed Specific Plan. This impact is considered **less than significant**.

Mitigation Measure

No mitigation measure would be required.

IMPACT 3.13-9 Increased Generation of Solid Waste and Compliance with Solid Waste Regulations. *Implementation of the proposed Specific Plan would result in the increase generation of solid waste. The Fink Road Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the proposed project and the proposed project does not include any components that would violate any applicable federal, state, or local solid waste regulations. This impact is considered than* ***less than significant****.*

Implementation of the proposed Specific Plan would generate temporary and short-term debris and waste during construction that would be disposed of at the Stanislaus Resource Recovery Facility or the Fink Road Landfill. Residential land uses would generate typical household waste, such as paper, cardboard, and plastics. Hazardous household waste, such as household cleaners, electronic wastes, paint, oil, pool chemicals, fertilizers, and pesticides, would be disposed of properly (see Section 3.8, "Hazards and Hazardous Materials") Therefore the proposed Specific Plan does not include any components that would violate any applicable federal, State, or local solid waste regulations.

Construction of the proposed Specific Plan would generate various construction-related wastes, including scrap lumber, scrap finishing materials, various scrap metals, and other recyclable and non-recyclable construction-related wastes. The 2016 CALGreen Code (Title 24, Part 11 of the California Code of Regulations) requires all

construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both (California Building Standards Commission 2016). In addition, the 2016 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

CalRecycle estimates a residential solid waste generation rate for the Stanislaus County Regional Solid Waste Planning Agency area, which includes the City of Ceres, would be approximately 4.2 pounds per resident per day, or 0.002 tpd (CalRecycle 2016c). Therefore, the estimated total population for the proposed Specific Plan (1,485 persons) would generate approximately 3.0 tpd of solid waste (0.002 × 1,485).

Solid waste collected from the Specific Plan Area would be hauled to the Fink Road Landfill, which has a maximum permitted throughput of 2,400 tpd. The estimated 3.0 tpd of solid waste generated by the proposed Specific Plan would be less than one percent of the maximum tpd that could be received at the landfill.

CalRecycle estimate that the Fink Road Landfill has a capacity until 2023. However, based on lower disposal rates, the County recently revised its projections for the life of the landfill to 2029 for Class III waste and 2043 for Class II (Stanislaus County 2014). In addition, the County has initiated plans for an expansion and reconfiguration of the existing facility to extend its useful life by another 10 to 15 years beyond the revised projections (Stanislaus County 2009:2-1). Therefore, the Fink Road Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the proposed Specific Plan. This impact is considered **less than significant**.

Mitigation Measure

No mitigation measure would be required.

IMPACT 3.13-10 Consumption of Energy. *Implementation of the proposed Specific Plan would result in energy consumption for the duration of the proposed project's construction phases in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Implementation of the proposed Specific Plan would also require energy for operational phases. There is no significant impact associated with the use of energy that is not already addressed in an environmental-topic-specific section off this EIR. This impact is considered* ***less than significant****.*

Construction-Related Energy Consumption

Implementation of projects proposed in the future under the Specific Plan would increase the consumption of energy for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be associated with construction equipment and vehicle fueling. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment operating on-site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site during both construction and demolition.

Table 3.13-10 presents the total fuel consumption for the proposed construction activities, shown both for the overall construction period and amortized over a 30-year period of building operation. This assumes a default construction schedule for the entirety of the Specific Plan Area with construction beginning in 2017 and ongoing until 2024. As shown in Table 3.13-10, total construction fuel requirements are estimated to be 423,760 gallons of diesel and 263,976 gallons of gasoline. When amortized over 30 years, fuel consumption would be approximately 14,125 gallons of diesel and 8,799 gallons of gasoline per year. The calculations are based on the CalEEMod emissions calculations for proposed construction activities and application of standard CO_2 emissions coefficients to estimate fuel consumption for each phase of construction activities.

Table 3.13-10. Whitmore Ranch Specific Plan Annual Fuel Consumption and Energy Demand for Proposed Project Construction

Construction Phase	Source	MT CO_2e per year [a]	Fuel Type	Factor (MT CO_2/gallon) [b]	Gallons per year
Demolition	Offroad Equipment	124.81	Diesel	0.01016	12,284
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	4.14	Gasoline	0.008887	466
Site Preparation	Offroad Equipment	70.06	Diesel	0.01016	6,896
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	20.81	Gasoline	0.008887	2,342
Grading	Offroad Equipment	313.99	Diesel	0.01016	30,905
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	8.60	Gasoline	0.008887	967
Building Construction	Offroad Equipment	1,300.59	Diesel	0.01016	128,011
	Hauling	0.00	Diesel	0.01016	-
	Vendor	2,535.46	Diesel	0.01016	249,553
	Worker	2,284.76	Gasoline	0.008887	257,090
Paving	Offroad Equipment	75.71	Diesel	0.01016	7,452
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	3.75	Gasoline	0.008887	422
Architectural Coating	Offroad Equipment	9.59	Diesel	0.01016	944
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	28.02	Gasoline	0.008887	3,153
			Total Fuel Demands	**Diesel**	**423,760**
				Gasoline	**263,976**
			Amortized Fuel Demands*	**Diesel**	**14,125**
				Gasoline	**8,799**

* Construction emissions were amortized over 30 years, which is the assumed lifetime of the proposed Specific Plan.

Sources:

[a] Modeled by AECOM in 2018;

[b] EMFAC2014 (v1.0.7) Web Database

[c] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Projects proposed in the future under the Specific Plan are not anticipated to include unusual characteristics that would necessitate the use of construction equipment that would be less energy-efficient compared to other construction sites in the County or state. It is expected that construction fuel consumption associated with projects proposed in the future under the Specific Plan would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Mitigation Measure 3.7-1a in Section 3.7 of this EIR, "Greenhouse Gas Emissions," would require contractors(s) for projects within the Specific Plan Area to use electric and renewable fuel powered construction equipment and renewable diesel fuel, where commercially available, and would require construction vehicles to operate with the highest tier engines commercially available. In addition to addressing the greenhouse gas emissions, as intended, this mitigation measure would reduce the consumption of energy by reducing fuel consumption by construction equipment, and thus, would increase the project's energy efficiency for construction-related activities.

Development-Related Energy Consumption

Development-related construction within the Specific Plan Area would be required to meet all applicable energy efficiency standards at the time of construction and would be required to comply with the current energy performance standards found Title 24 of the California Code of Regulations, including the CalGreen Code (Part 11 of Title 24) Building Energy Efficiency Standards. The 2016 CalGreen Code, was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. The 2016 Building Energy Efficiency Standards are anticipated to reduce statewide annual electricity consumption by approximately 281 GWh per year, electrical peak demand by 195 MW, and natural gas consumption by 16 million therms per year (CEC 2015c).

As shown in Table 3.13-11, electrical demands would be approximately 3,156,320 kWh per year. Natural gas consumption would be approximately 111,415 million therms per year. The City requires that new development meets California Green Building Code requirements for energy conservation and encourages the use of energy conservation devices and passive design concepts which make use of natural climate to increase energy efficiency (see Section 3.7, "Greenhouse Gas Emissions" for details). The Specific Plan includes energy conservation strategies, including window shading devices, selection of colors to reduce heat gain, energy efficient windows, cool roofs, high-quality insulation and radiant barriers, solar panels, and whole house energy systems, to reduce energy consumption associated with heating and air conditioning during winter and summer months.

Table 3.13-11. Whitmore Ranch Specific Plan Annual Electricity and Natural Gas Demand

CalEEMod Land Use Category (Specific Plan Land Use)	Electrical Demand (kWh/year)	Natural Gas Demand (kBtu/year)
Apartments Low Rise (HDR)	807,613	2,999,940
Condo/Townhouse (MDR)	502,947	1,848,880
Single Family Housing (LDR)	1,845,760	6,292,690
Total	3,156,320	11,141,510

Notes: kWh = kilowatt-hours; kBtu = thousand British thermal unit.

Source: Modeled by AECOM in 2018

Since energy efficiency requirements for new construction have increased over time, the buildings that are proposed in the future in the Specific Plan Area would generally be more energy efficient that existing similar residential buildings in the area, which were constructed according to existing or previous less stringent energy efficiency standards. In addition, older buildings tend to decrease in energy efficiency as infrastructure begins to degrade with time. Therefore, the space heating and cooling, lighting, and other operational-related energy uses for buildings that are proposed in the future in the Specific Plan Area would likely be more efficient than existing buildings in the region.

Transportation-Related Energy Consumption

As noted, transportation is, by far, the largest energy consuming sector in California, and since transportation accounts for more energy consumption than heating, cooling, and powering of buildings, powering industry, or any other use, travel demand is a critical consideration in assessing energy efficiency (U.S. Energy Information Administration 2015, Lawrence Berkeley National Laboratory 2013).

Buildout of the Specific Plan could generate 3,424 daily trips on weekdays, 3,688 daily trips on Saturdays, and 3,159 daily trips on Sundays.[4] This equates to an approximate total daily VMT of 27,415, which would generate an estimated annual energy demand of 60,441 MMBtu.[5,6] Daily VMT for residential components of the Specific Plan is estimated to be approximately 27,202, which is approximately 18 VMT per day per capita.[7] Table 3.13-12 shows estimated annual fuel consumption from transportation associated with the proposed project operations.

Table 3.13-12. Whitmore Ranch Specific Plan Annual Fuel Consumption and Energy Demand for Proposed Project Mobile Operations

Land Use Category	MT CO_2e/yr [a]	% Average Fleet Mix [b]	Factor (MT CO_2/gallon) [c]	Gallons/year
Annual Project Mobile CO_2e emissions	4444.7476			
Diesel		14.27%	1.02E-02	62,446
Gasoline		82.89%	8.89E-03	414,542

Sources:

[a] Modeled by AECOM in 2018;

[b] EMFAC2014 (v1.0.7) Web Database

[c] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Mitigation Measure 3.7-1b in Section 3.7 of this EIR, "Greenhouse Gas Emissions," would be implemented to reduce operational GHG emissions. The majority of the proposed actions under Mitigation Measure 3.7-1b would address mobile-related operations, such as providing safe and convenient pedestrian and bicycle connections, considering the provision of a bus stop and appropriate amenities, and providing EV-ready parking spaces with electric vehicle charging states in the HDR-designated area. These actions would promote and providing options for alternative modes of transportation throughout the Specific Plan Area. In addition to addressing the

4 This estimate of daily trips is derived using default assumptions from the CalEEMod air pollutant emissions model.

5 This VMT estimate is derived using default assumptions from CalEEMod air pollutant emissions model. This analysis assumes diesel (heat content) is 5.8 MMBtu/barrel, that for vehicular gasoline there are 5.25 MMBtu/barrel, and that there are 42 gallons/barrel. These assumptions are consistent with guidance provided in the 2017 Climate Registry Default Emission Factors: Table 13.1.

6 Trip summary information modeled in CalEEMod can be reviewed in Appendix B of this EIR.

7 Analysis based on an annualization factor of 365 days/per. CalEEMod generated a residential population based on an assumed future population of 1,485.

greenhouse gas emissions, as intended, this mitigation measure would reduce the consumption of energy by reducing fuel consumption for operations-related transportation, and thus, would increase the project's energy efficiency for construction-related activities.

Conclusion

Energy would be consumed through all phases of project construction and operations. Energy-requiring activities range from equipment operation, to building operations and lighting of the parking lot, to transportation during all phases of the proposed project. Table 3.13-13 summarizes total energy requirements for the proposed project. For comparison purposes, Table 3.13-13 shows conversion of all energy requirements to a common energy unit of British thermal units (Btu).

Table 3.13-13. Summary of Whitmore Ranch Specific Plan Annual Energy Requirements

Phase	Energy Requirement	Unit	Annual Energy Consumption (MMBtu)[b]
Construction (amortized over 30 years)			
Diesel	14,125	gallons/year	1,951
Gasoline	8,799	gallons/year	1,100
		Subtotal	*3,051*
Development Operations			
Apartments Low Rise			
Electrical	807,613	KWh/year	2,756
Natural Gas	2,999,940	kBTU/year	3,000
Condo/Townhouse			
Electrical	502,947	KWh/year	1,717
Natural Gas	1,848,880	kBtu/year	1,849
Single Family Housing			
Electrical	1,845,760	KWh/year	6,300
Natural Gas	6,292,690	kBtu/year	6,293
		Subtotal	*21,914*
Operational Transportation			
Diesel	62,446	gallons/year	8,623
Gasoline	414,542	gallons/year	51,818
		Subtotal	*60,441*
		Total	***173,872***

Notes:
kBtu/year = thousand British thermal units per year; KWh/year = kilowatt-hours per year; MMBtu = million British thermal units
Totals do not add due to rounding.
Sources:
[a] Modeled by AECOM in 2018
[b] Calculation based on Co_2 emissions factors from U.S. Energy Information Administration 2016

As discussed above, construction fuel consumption associated with projects proposed in the future under the Specific Plan would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region. The Specific Plan would encourage energy conservation strategies in new development that would likely

result in new development being more efficient than existing buildings in the region. Operational transportation is a substantially greater energy-consuming factor than construction or building operations. As discussed above, Mitigation Measures 3.7-1a and 3.7-1b would reduce transportation-related fuel consumption during construction and operations, respectively, the two largest energy consuming elements of the proposed project. These mitigation measures would further increase energy efficiency associated with implementation of the proposed Specific Plan. Therefore, this impact is considered **less than significant**.

The use of energy can be an indicator of potential adverse physical environmental impacts. Please refer to Section 3.3 of this EIR, "Air Quality," which comprehensively analyzes and provides feasible mitigation for air pollutant emissions; Section 3.7, "Greenhouse Gas Emissions," comprehensively analyzes and provides feasible mitigation for GHG emissions; and Section 3.11, "Noise and Vibration," which comprehensively analyzes and provides feasible mitigation for noise and vibration impacts. There is no significant impact associated with the use of energy that is not already addressed in an environmental-topic-specific section of this EIR.

Mitigation Measure

No mitigation measure would be required.

IMPACT 3.13-11 New or Expanded Electrical and Natural Gas Utilities. *Implementation of the proposed Specific Plan would require electrical and natural gas supplies and infrastructure. TID and PG&E have confirmed they have capacity to serve the Specific Plan. Physical impacts associated with construction and operations of utilities are evaluated throughout this EIR. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. The impact is considered* ***less than significant****.*

Implementation of the Specific plan would increase demand for electricity and natural gas and the proposed project would require the development of new utility infrastructure to deliver services to the Specific Plan Area. Electrical and natural gas service in the city is provided by TID and PG&E, respectively. TID would provide electrical infrastructure and PG&E would provide natural gas infrastructure to the project site through extension of existing off-site facilities, as necessary. In the vicinity of the Specific Plan Area, TID has existing overhead transmission and distribution lines along the west side of the TID Main Canal; along the north side of Whitmore Avenue; and just west of the Boothe Road intersection at Whitmore Avenue. Underground electric facilities also are in place along Eastgate Boulevard, south of Whitmore Avenue. PG&E has an existing buried natural gas transmission main within the Moore Road, Whitmore Avenue, and Esmar Avenue rights-of-way along.

Projects under the Specific Plan would construct a self-contained distribution system that connects to the existing off-site electrical and natural gas systems. The on-site service lines would be installed in proposed joint utility trenches within neighborhoods, sized to meet the demands of the Specific Plan, and public utility easements would be dedicated for all underground facilities. The location of this infrastructure would be planned in collaboration with TID and PG&E and the location of infrastructure would be identified in the final project design. As part of the project approval process, the project applicant would be required to coordinate with, and meet the requirements of TID and PG&E regarding the extension and locations of on-site infrastructure.

The proposed electrical-utility improvements would be required to comply with all existing local and utility requirements, Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) and

applicable requirements of the California Building Standards Code and TID's electric service rules and construction standards identified in the *Developer Information Book for Installing Underground Electrical Facilities*. Natural gas facilities are to be installed in accordance with established Pacific Gas and Electric rules and construction standards, as required in the PG&E's *Electrical & Gas Service Requirements* (also referred to as the Greenbook Manual).

The City has consulted with TID and PG&E and both service providers have confirmed they have capacity to serve the Specific Plan. The TID electric system and PG&E natural gas improvements are designed and constructed on a per-project basis, adhering to the rules and standards referred to above. Therefore, this impact is considered **less than significant.**

Physical impacts associated with construction and operation of utilities are evaluated throughout this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, which specifically analyze the potential for project construction and implementation. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR.

The following mitigation measure is provided for planning purposes to ensure electrical and natural gas supplies are available and infrastructure is designed and sized to provide adequate service to the Specific Plan.

> Mitigation Measure 3.13-11: Collaborate with Utility Providers to Prepare Utility Service Plans for Electrical and Natural Gas Services and Submit Written Verification to the City that Adequate Infrastructure is Available Before Approval of a final subdivision map.
>
> The project applicant(s) shall prepare a utility service plan that identifies the electrical and natural gas infrastructure sizing and locations to serve proposed development. The project applicant(s) shall submit to the City written verification that TID has adequate electrical infrastructure and PG&E has adequate natural gas supplies and infrastructure available for the amount of proposed development before issuance of building permits.

Significance after Mitigation

There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Implementation of Mitigation Measure 3.13-11 requires a utility service plan to be prepared and written verification is provided to the City that electrical and natural gas infrastructure is available before approval of the final subdivision map and issuance of building permits.

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3.14 TRANSPORTATION

This section summarizes the transportation and traffic impacts analysis prepared by KD Anderson & Associates to support this EIR. The following scenarios were analyzed in a traffic study prepared to support this EIR (KD Anderson & Associates 2018) and included as Appendix G:

- **Existing Conditions –** represents the baseline condition upon which project impacts are measured.
- **Existing plus Approved Projects (EPAP) Conditions (Baseline) –** reflects changes in traffic and circulation conditions associated with short-term future conditions that assume occupancy of other approved development projects.
- **Existing plus Approved Projects (EPAP) Plus Project Conditions (Baseline) –** reflects changes in traffic and circulation conditions associated with short-term future conditions that assume occupancy of other approved development projects plus the Specific Plan.
- **Cumulative[1] No-Project Conditions –** reflects the future 2040 without implementation of the proposed project.
- **Cumulative plus Project Conditions –** reflects changes in future 2040 traffic and circulation associated with the implementation of the proposed project.

3.14.1 ENVIRONMENTAL SETTING

STUDY AREA

The Specific Plan Area is in unincorporated Stanislaus County adjacent to the city of Ceres (Exhibit 2-1; Exhibit 2-2). Roadways are the primary existing type of transportation facility within the vicinity of the Specific Plan Area. The existing roadway network consists of freeways, thoroughfares, arterials, collectors, and rural roadways. The studied intersections are shown in Figure 1 in Appendix G. A description of the major transportation facilities, major roadway segments, current traffic volumes, and alternative transportation modes is provided below.

EXISTING CONDITIONS

The existing physical and operating characteristics of the roadway system, transit system, and bicycle/pedestrian system are described in this section to provide a context for understanding the severity of impacts caused by the proposed project and future annexation and urbanization activities that could be experienced in the Specific Plan Area.

Roadway System

Implementation of the proposed project will most directly affect roadways under the jurisdiction of the County of Stanislaus and the City of Ceres, as well as the California Department of Transportation (Caltrans) (State Route 99 [SR 99]). Currently, regional access to the Specific Plan Area is provided by State Route 99, by several City of

[1] Cumulative conditions are discussed in Chapter 5.0, "Other CEQA".

Ceres arterial streets and by rural roads in the unincorporated area of Stanislaus County. State Route 99 connects the project with the Modesto urban area to the north and the Turlock area to the south. Today, access occurs at the Mitchell Road interchange south of the Specific Plan Area, at the El Camino Avenue ramps in downtown Ceres, and at the Whitmore Avenue interchange to the west. Mitchell Road provides access to central Modesto north of the Tuolumne River. Roeding Road extends east of downtown Ceres and south of the Specific Plan Area. Other local and collector streets link the area with residential neighborhoods.

The following 9 roadway segments and 11 intersections (Table 3.14-1) were selected for analysis based on their proximity to the Specific Plan Area and the expected use of these facilities for Specific Plan-related uses. The roadway segments identified below represent the study area for the transportation analysis summarized in this EIR.

Table 3.14-1. Study Area Roadway Segments and Intersections

Number	Name	Jurisdiction
Roadway Segments		
1.	Whitmore Avenue from Mitchell Road to Della Drive	City of Ceres
2.	Whitmore Avenue from Della Drive to Moore Road	City of Ceres
3.	Whitmore Avenue from Moore Road to Boothe Road	City of Ceres/County of Stanislaus
4.	Whitmore Avenue from Boothe Road to Eastgate Boulevard	City of Ceres/County of Stanislaus
5.	Whitmore Avenue from Eastgate Boulevard to Faith Home Road	City of Ceres/County of Stanislaus
6.	Faith Home Road from Whitmore Avenue to Roeding Road	County of Stanislaus
7.	Eastgate Boulevard South of Whitmore Avenue	County of Stanislaus
8.	Moore Road from Whitmore Avenue to Roeding Road	City of Ceres/County of Stanislaus
9.	Roeding Road from Moore Road to Faith Home Road	County of Stanislaus
Intersections		
1.	Mitchell Road / Roeding Road	City of Ceres
2.	Moore Road / Roeding Road	City of Ceres/County of Stanislaus
3.	Esmar Road / Roeding Road (Northbound Approach)	County of Stanislaus
4.	Faith Home Road / Roeding Road	County of Stanislaus
5.	Mitchell Road / Whitmore Avenue	City of Ceres
6.	Della Drive / Whitmore Avenue (Northbound Approach and Southbound Approach)	City of Ceres
7.	Moore Road / Whitmore Avenue (Northbound Approach)	City of Ceres/County of Stanislaus
8.	Lunar Drive / Whitmore Avenue (Southbound Approach)	City of Ceres/County of Stanislaus
9.	Boothe Road / Whitmore Avenue (Southbound Approach)	City of Ceres/County of Stanislaus
10.	Eastgate Boulevard / Whitmore Avenue	City of Ceres/County of Stanislaus
11.	Faith Home Road / Whitmore Avenue	City of Ceres/County of Stanislaus

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

State Highway 99 (SR 99)

State Highway 99 (SR 99) is the major north-south route serving Ceres and Stanislaus County as a whole. SR 99 extends through the Central Valley from a junction on Interstate 5 south of Bakersfield to the Red Bluff area of Tehama County. In Ceres, SR 99 is a 6-lane controlled access freeway with access via four interchanges.

Caltrans compiles traffic count data for the state highway system and reports this information yearly. The most recent traffic counts available from Caltrans suggest that SR 99 carries an Annual Average Daily Traffic (AADT) volume of about 94,000 vehicles per day (2015) in the area north of the Mitchell Road interchange and 101,500 AADT to the south.

Future plans for the State highway in this area involve the development of an expanded Mitchell Road interchange that would provide improved access to southern Ceres. The City of Ceres has selected a preferred alternative for reconstructing the SR 99 / Mitchell Road interchange that will link Service Road directly with the state highway. As a part of the project, Mitchell Road would be widened from four to six travel lanes from SR 99 to Don Pedro and Service Road would be widened to six lanes between Moffett Road and Mitchell Road.

Whitmore Avenue

Whitmore Avenue is an east-west Arterial in the Ceres 2035 General Plan Transportation and Circulation Element (City of Ceres 2018). Whitmore Avenue originates at an intersection on Carpenter Road and extends easterly for about 14 miles across SR 99 along the Specific Plan Area to Hughson and rural Stanislaus County. In the area of the Specific Plan Area, Whitmore Avenue is a two-lane facility that is being incrementally widened to four lanes as local development occurs. Two westbound travel lanes are already provided in the vicinity of the Specific Plan Area, and the posted speed limit is 45 mph. A 25 mph school zone exists in the vicinity of Cesar Chavez Junior High School and La Rosa Elementary School.

Daily traffic counts completed for this traffic study in October 2016 indicate that the current daily traffic volume on Whitmore Avenue was 16,432 vehicles per day (vpd) east of the Mitchell Road intersection, with the volume dropping to 6,900 vpd just west of Faith Home Road. The highest volume occurs in the area between Moore Road and Boothe Road with 18,320 vehicles per day.

Mitchell Road

Mitchell Road is a north-south Arterial that extends north from an interchange on SR 99 through Ceres to the Tuolumne River crossing an intersection on SR 132 in Modesto. In the vicinity of the Specific Plan Area, Mitchell Road is a four-lane facility with a speed limit of 45 mph. Mitchell Road is to be widened to six lanes in the future. Traffic counts made for the City's 2035 General Plan Update EIR indicated that Mitchell Road carried 38,168 vpd north of Whitmore Avenue, 34,986 vpd between Whitmore Avenue and Roeding Road, and 36,106 vpd south of Roeding Road.

Roeding Road

Roeding Road is an east-west Primary Collector that extends easterly from 6th Street near the SR 99/El Camino Avenue ramps across Mitchell Road past south of the Specific Plan Area to its eastern terminus on Tully Road south of Hughson. In the vicinity of the Specific Plan Area, Roeding Road is a two-lane rural facility with a speed

limit of 55 mph. Traffic counts conducted for this traffic study in October 2016 indicate that Roeding Road carried 1,814 vpd in the vicinity of the Specific Plan Area east of Moore Road.

Faith Home Road

Faith Home Road is a north-south street serving eastern Ceres and rural Stanislaus County. Faith Home Road extends south from an intersection on Hatch Road near the Tuolumne River to an interchange on SR 99 before continuing to Merced County. Faith Home Road is designated an expressway in the Ceres 2035 General Plan Transportation and Circulation Element (City of Ceres 2018), but today Faith Home Road is a rural two-lane road, and the speed limit is 55 mph. Traffic counts conducted for the City's General Plan Update EIR indicated that the road carries 4,100 vpd in the vicinity of the Specific Plan Area.

Esmar Road and Boothe Road

Esmar Road and Boothe Road are designated Primary Collectors in the Ceres 2035 General Plan Transportation and Circulation Element (City of Ceres 2018). Today, Boothe Road extends as a two-lane road from an intersection on Hatch Road south to Whitmore Avenue. Based on the peak-hour traffic volumes observed today, the daily traffic volume on Boothe Road is estimated to be 4,600 vehicles per day.

Today, Esmar Road originates at an intersection on Roeding Road and continues southerly as a two-lane rural road to an intersection on Rohde Road near SR 99. The Circulation Element indicated that these two roads will be linked via a new road constructed from Whitmore Avenue to Roeding Road across the Specific Plan Area.

Eastgate Boulevard

Eastgate Boulevard is a north-south two-lane Secondary Collector that traverses the neighborhood north of the Specific Plan Area and extends south of Whitmore Avenue to provide access to La Rosa Elementary School and Cesar Chavez Junior High School. Ultimately, the road will continue to Roeding Road. Traffic counts conducted for this analysis indicated that Eastgate Boulevard carried 3,402 vehicles per day south of Whitmore Avenue.

Existing Traffic Operations

To quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without project-generated traffic, Levels of Service were determined at study area roadway segments and intersections. "Level of Service" (LOS) is a quantitative measure of traffic operating conditions whereby a letter grade "A" through "F" is assigned to an intersection. LOS "A" through "F" represents progressively worsening traffic conditions. The characteristics associated with the various LOS for intersections are presented in Table 1 of Appendix G. The City of Ceres has identified LOS C as the minimum standard for secondary collectors and local streets and has established LOS "D" as the minimum standard for major roadways, such as primary collectors, arterials, expressways, and freeways.

The following summarizes traffic operations under existing conditions, including peak-hour roadway segment, and intersection operations.

Existing Roadway Segment Operations

The LOS on individual roadway segments was determined based on daily traffic volume thresholds identified in the City of Ceres 2035 General Plan Update Existing Conditions report and presented in Table 2 of Appendix G.

Table 3.14-2 displays daily traffic volumes and level of service for key roadway segments that will provide primary access to the Specific Plan Area. As indicated, with one exception, the study area street system carries traffic volumes that satisfy the City of Ceres' minimum LOS standards. The exception is the segment of Whitmore Avenue from Moore Road easterly to Cesar Chavez Junior High School along the Specific Plan Area frontage, where only one eastbound lane is available. This segment operates at LOS E, which exceeds the City's LOS D minimum.

Table 3.14-2. Roadway Segment Operations – Existing Conditions

Roadway	Location	Classification	Lanes	Daily Volume	Level of Service
Whitmore Avenue	Mitchell Road to Della Drive	Arterial	4	16,432	A
	Della Drive to Moore Road	Arterial	2+	16,432	D
	Moore Road to Boothe Road	Arterial	2+	**18,320**	**E**
	Boothe Road to Eastgate Boulevard	Arterial	2+	13,600	B
	Eastgate Boulevard to Faith Home Road	Arterial	2	6,900	A
Faith Home Road	Whitmore Avenue to Roeding Road	Rural Road	2	4,100	C
Eastgate Boulevard	South of Whitmore Avenue	Secondary Collector	2	3,402	A
Moore Road	Whitmore Avenue to Roeding Road	Local	2	3,127	A
Roeding Road	Moore Road to Faith Home Road	Collector	2	1,814	A

Notes:
Bold values exceed the minimum LOS standard.
Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

The City is pursuing a Safe Routes to School program to widen Whitmore Avenue between Moore Road and Cesar Chavez Junior High School to provide improved pedestrian and bicycle facilities. That work would also provide four lanes on Whitmore Avenue.

Intersection Operations

Levels of Service were calculated using the methodology contained in the 2010 Highway Capacity Manual (HCM) using Synchro software. The overall LOS for intersections was determined based on the average length of delays for all motorists at signalized intersections and all-way stop-controlled intersections. At un-signalized intersections controlled by side-street stop signs, the reported LOS is that associated with the "worst case." The study intersections were noted in Figure 1 of Appendix G and applicable a.m. and p.m. peak-hour traffic counts are shown in Figure 3 of Appendix G. Current information regarding the number of lanes and traffic control devices are also presented in Appendix G, Figure 3.

Table 3.14-3 displays the existing a.m. and p.m. peak-hour traffic operations analysis results at the 11 study intersections (refer to Appendix G for detailed calculations).

Table 3.14-3. Peak-Hour Intersection Level of Service – Existing Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour		Signal Warrants Met?
		Average Delay[1] (sec/veh)	LOS[1]	Average Delay[1] (sec/veh)	LOS[1]	
Mitchell Road / Roeding Road	Signal	13.4	B	12.6	B	n.a.
Moore Road / Roeding Road	All-Way Stop	15.0	B	9.3	A	No
Esmar Road / Roeding Road						
Northbound Approach	NB Stop	9.5	A	9.4	A	No
Faith Home Road / Roeding Road	All-Way Stop	9.9	A	9.2	A	No
Mitchell Road / Whitmore Avenue	Signal	48.3	D	43.5	D	n.a.
Della Drive / Whitmore Avenue						
Northbound Approach		19.7	C	18.8	C	
Southbound Approach	NB/SB Stop	12.4	B	16.1	C	No
Moore Road / Whitmore Avenue						
Northbound Approach	NB Stop	**38.0**	**E**	33.5	D	Yes[2]
Lunar Drive / Whitmore Avenue						
Southbound Approach	SB Stop	29.0	D	13.7	B	Yes[2]
Boothe Road / Whitmore Avenue						
Southbound Approach	SB Stop	**258.8**	**F**	21.2	C	Yes
Eastgate Boulevard / Whitmore Avenue	Signal	38.3	D	18.6	B	n.a.
Faith Home Road / Whitmore Avenue	All-Way Stop	13.2	B	15.3	C	No

Notes: sec/veh = Second per Vehicle; n.a. = Not Applicable.

Bold values exceed the minimum LOS standard.

[1] Average delay (rounded to the nearest second) and LOS for signalized and all-way stop-controlled intersections is the weighted average for all movements. Average delay and LOS at side-street stop-controlled intersections shown for both worst-case side street movement (in parentheses) and intersection as a whole.

[2] Although peak hour Traffic Signal Warrants may be met for these intersections, other improvements as further described in this report will result in conditions that will not require installation of a new traffic signal.

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

Most of the existing study intersections have signal control, except for the following:

- The northbound approach at the Whitmore Avenue / Moore Road intersection operates at LOS E in the a.m. peak hour.
- The southbound approach at the Whitmore Avenue / Boothe Road intersection operates at LOS F in the a.m. peak hour.

The Specific Plan Area adjoins Cesar Chavez Junior High School and La Rosa Elementary School, and these facilities attract appreciable vehicular traffic during the periods immediately before and after the end of the school day. As is typically the case with schools, congestion created by on-site drop-off and loading activities can extend back onto the adjoining public streets. Thus, traffic flow may be indicative of conditions that are poorer than would be suggested by LOS Analysis predicated on traffic volumes and intersection capacity. The congestion created by school is short-term in nature and typically lasts for about 15 minutes.

Traffic Signal Warrants

The extent to which current traffic conditions at un-signalized intersection might justify a traffic signal was evaluated based on the warrants contained in the Manual of Uniform Traffic Control Devices. As noted in Table 3.14-3, the volume of traffic occurring at three intersections on Whitmore Avenue satisfies peak-hour warrants. However, traffic engineers often find that traffic signals are not the preferred control when the majority of approach traffic turns right, as is the case with the existing traffic on northbound Moore Road, southbound Lunar Drive and southbound Boothe Road. The applicable traffic control strategy is discussed later in this report to address Specific Plan impacts.

Traffic Safety Deficiencies

The extent to which the existing layout of the study area circulation system presents operational or safety deficiencies has been considered based on consistency with current City of Ceres roadway design standards. Because the study area is transitioning from rural Stanislaus County roads to city streets, many segments do not currently meet urban standards for lane width, curb and gutter, and sidewalks. These deficiencies alone do not necessarily create safety or operational problems, and rural roads can safely accommodate moderate traffic volumes.

Within the study area, the most noteworthy deficiency occurs at the Whitmore Avenue / Moore Road intersection near the TID Main Canal. The route of the TID Canal Trail crosses Whitmore Avenue at a marked crosswalk that is immediately adjacent to Moore Road, and the limit line on the northbound approach extends into the intersection. As a result, the space available for westbound left turns onto southbound Moore Road is very limited, and when northbound traffic is waiting to turn left, the southbound movement must typically be made at slow speed. An appreciable number of westbound left turns occur during peak hours as Moore Road is used as an alternative north-south route in the area between Mitchell Road and Faith Home Road.

Intersection design is similarly a constraint at the Moore Road / Roeding Road intersection since the canal is very close to the intersection. However, while the intersection is narrow, current traffic volumes at this all-way stop controlled location do not create the issues existing on Whitmore Avenue.

Bicycle and Pedestrian Facilities

Although pedestrian and bicycle facilities do not exist along the Specific Plan Area frontage, sidewalks and bicycle lanes have been constructed as eastern Ceres has been developed. Sidewalk exists on the north side of Whitmore Avenue from the Mitchell Road intersection to a point midway between Eastgate Boulevard and Faith Home Road. Sidewalk exists on the south side of the street in the immediate vicinity of the two Specific Plan Area schools and in the area between Mitchell Road and Moore Road. Sidewalks are also available on Eastgate Boulevard and on the other streets serving the Eastgate Community north of Whitmore Avenue opposite the Specific Plan Area.

Today, school-age pedestrians walk along the south side of Whitmore Avenue where no sidewalks exist on their way to Cesar Chavez Junior High School and La Rosa Elementary School. The potential exists for conflicts between motor vehicles, bicycles, and pedestrians in this area where paved shoulder and dirt path are available. The City of Ceres was awarded a Safe Routes to School Program to develop improvements in this area, with anticipated construction in the summer of 2018.

Bicycle facilities have been installed at many locations in Ceres and are planned for expansion as the community is developed. The 2013 StanCOG Non-Motorized Transportation Master Plan guides bicycle planning in this area.

Chapter 1000 of the Caltrans Highway Design Manual defines three classes of bicycle facilities and details the minimum requirements for those facility types:

- Class 1 Bicycle Paths – a paved right of way completely separated from any street or highway.
- Class 2 Bicycle Lanes – a striped and stenciled lane for one-way travel on a street or highway.
- Class 3 Bicycle Routes – a typical roadway identified as a preferred bicycle route with signage. They may also include shared use lane markings, "SHARE THE ROAD" signage or wide shoulders.

In the StanCOG Plan, a Class 3.5 bicycle route designation is also used. Class 3.5 facilities indicate a Class 3 bicycle route, as defined by Caltrans, with wide shoulders, typically four to eight feet in width. Class 3 Share the Lane indicates Class 3 bicycle routes, as defined by Caltrans, with "SHARE THE ROAD" signage, typically on narrow, rural roadways.

In the vicinity of the Specific Plan Area, a Class 1 Bike Path exists along the TID Main Canal adjoining the Specific Plan Area. This path links Hatch Road on the north with the southern City limits and current construction will extend the path to Service Road.

Class 2 Bike Lanes exist on Boothe Road north of Whitmore Avenue and on Whitmore Avenue west of Moore Road. The StanCOG plan indicates that Class 2 bike lanes should be developed on Eastgate Boulevard north of Whitmore Avenue and on Whitmore Avenue east of Moore Road to Faith Home Road.

Transit Facilities

The Ceres area is served by various transit providers. Stanislaus Regional Transit (StaRT), Ceres Dial-A-Ride (CDAR), Ceres Area Transit (CAT), and Modesto Area Express (MAX) provide bus service in Ceres. The agencies have bike-rack equipped bus fleets. Dial-A-Ride services are provided on a first-come, first-served basis.

City of Ceres fixed route service "CAT" is designed to meet various transit needs of the community. The CAT route covers most of the City from 6:15 a.m. to 6:10 p.m. and runs along a designated route that extends towards the Specific Plan Area as far as the Whitmore Avenue / Mitchell Road intersection.

Ceres Dial-A-Ride is an on-demand, shared-ride public transportation system available to all members of the public. The Specific Plan Area is included in its service area.

StaRT programs also connect to Ceres. The developed areas of Ceres are accessed by fixed route service (Route 10 Express and Route 15). Route 15 reaches the corner of Whitmore Avenue / Mitchell Road.

The Specific Plan Area is also within the coverage area for Stanislaus Regional Transit's Turlock – Modesto Runabout. Runabouts are a transit service that combines designated fixed stops (like a fixed route) and curb-to-curb service (like a dial-a-ride). Passengers can catch the service at the designated fixed stops without having to phone ahead and book a ride. However, those passengers can only be dropped off at other designated fixed stops. For those passengers that want curb-to-curb service, it is necessary to call ahead and book a ride.

The City of Ceres Public facilities fee program includes the cost of bus pull-outs at the Whitmore Avenue / Boothe Road intersection.

3.14.2 REGULATORY FRAMEWORK

STATE PLANS, POLICIES, LAWS, AND REGULATIONS

California Department of Transportation

Caltrans is responsible for planning, designing, constructing, operating, and maintaining State-owned roadways. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State highway system within the Stanislaus County or the City of Ceres need to be approved by Caltrans.

Caltrans operates and maintains SR 99, which provide regional access to the city and the Specific Plan Area. Additionally, the Caltrans Division of Planning has four major functions: the Office of Advance Planning, Regional Planning/Metropolitan Planning Organization (MPO), Local Assistance/Intergovernmental Relations/California Environmental Quality Act, and System Planning Public Transportation. The Office of System Planning Public Transportation prepares Transportation Concept Reports (TCRs) in coordination with the regional planning partners and other district divisions. The TCRs are long-term planning documents, which evaluate current and projected conditions along specified routes. The TCRs establish 20-year planning visions and concepts and recommend long-term improvements to achieve the concept. The TCRs also reflect the plans of the applicable Regional Transportation Planning Agencies and MPOs, such as StanCOG for the Stanislaus region) for managing local and regional travel demand on State routes. Caltrans has established a Concept Level of Service for all roadways under its jurisdiction. The Concept LOS assumes a 20-year horizon and improvements to the identified facility. For planning purposes, Caltrans has established LOS D as the minimally acceptable level of service for all roadways under its jurisdiction.

REGIONAL AND LOCAL PLANS, POLICIES, LAWS, AND REGULATIONS

StanCOG Regional Transportation Planning Agency

The Stanislaus Council of Governments (StanCOG) is a council of city and county governments that was established to address regional transportation issues. StanCOG is responsible for the preparation of, and updates to, the MPO, the Regional Transportation Planning Agency (RTPA) and the Local Transportation Authority (LTA) for the Stanislaus region. StanCOG is comprised of the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford, and Stanislaus County. The MTP provides a 20-year transportation vision and a corresponding list of projects. The current MTP, the MTP/Sustainable Communities Strategy (SCS) 2035, was adopted in June 2014 (StanCOG 2014). StanCOG is also responsible for the oversight and distribution of most federal and State transportation funding sources.

City of Ceres 2035 General Plan

The following policies from the Ceres 2035 General Plan (City of Ceres 2018) related to transportation and traffic are applicable to the proposed Specific Plan.

Land Use and Community Design

- **Policy 2.A.12 Integrate Transportation and Land Use**. Integrate transportation and land use to plan for well-connected neighborhoods with safe and convenient vehicle, pedestrian, bicycle, and transit accessibility.

- **Policy 2.A.14 Maintenance**. Maintain and invest in the public realm, including parks, sidewalks, and streets to enhance safety and character and to encourage upkeep and investment by private property owners.

- **Policy 2.F.5 Pedestrian-Oriented Streetscape**. Require streetscapes and buildings to encourage pedestrian activity and comfort.

- **Policy 2.I.2 Area-wide Plans**. Use area-wide plans (i.e., master plans or specific plans) to comprehensively plan for new neighborhood developments. Each residential area-wide plan should at minimum address the following [among others]:

    - Distribution and location of roadways, including design standards for and the general alignment of arterial and collector streets. Specific provisions for local streets and bikeways should be shown, where necessary.

    - Provisions for the extension of the existing city roadway system into new development areas. New development shall be linked to adjacent existing neighborhoods and planned neighborhoods.

    - Provisions for linking residential neighborhoods, parks, schools, shopping areas, and employment centers through a system of pedestrian and bicycle pathways.

- **Policy 2.I.3 Fiscal Responsibility**. Require new development to pay for its fair share portion of costs of impacts on infrastructure.

Transportation and Circulation

- **Policy 3.A.1 Multi-Modal Network**. Provide for a comprehensive, integrated transportation network in accordance with the functional classification system described in this chapter and reflected in the Circulation Diagram with infrastructure and design that allows safe and convenient travel along and across streets for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility.

- **Policy 3.A.2 Level of Service**. Develop and manage the roadway system to maintain Level-of-Service ("LOS") C or better on secondary collectors and local streets and Level-of-Service D or better on primary collectors, arterials, expressways, and freeways. One service level deviation may be permitted at locations where land development or transportation improvement projects support other goals from the General Plan including transit, active transportation, and economic development. Exceptions may also be allowed in areas where the City finds that the improvements or other measures required to achieve the "LOS" standards are unacceptable because of right-of-way limitations, physical impacts on surrounding properties, adverse effects on other travel modes, and/or the visual aesthetics of the required improvement and its impact on community identity and character.

- **Policy 3.A.3 Transportation Impact Analysis**. Require transportation analysis to determine the effects of traffic from major development projects (generally those that would generate 100 or more peak-hour trips). Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share contribution towards improvements that provide benefits to others.

- **Policy 3.A.4 Reduce Vehicle Miles Traveled (VMT)**. Support statewide efforts to reduce vehicle miles of travel (VMT) from existing and new development by encouraging infill and mixed use development, providing a multi-modal transportation network, and incorporating transportation and parking demand management measures into new development by design.

- **Policy 3.A.5 Transportation Financing**. Pursue financing in a timely manner from a variety of sources to maintain, enhance, and expand the roadway, sidewalk, bicycle, and transit networks to achieve and maintain a safe and efficient complete transportation network.

- **Policy 3.A.6 Development Fees**. Assess fees on new development sufficient to cover the fair share portion of that development's cumulative impacts on the local and regional transportation system, including transit, bicycle, and pedestrian systems.

- **Policy 3.B.1 Complete Streets Corridors**. Maintain adequate travel flow along Ceres' major corridors while allowing for new development or redevelopment. To this end, the following shall be considered in site plan development for new development and redevelopment along Hatch Road, Mitchell Road, and Whitmore Avenue:

    - Require consolidation of driveway access to reduce the number of vehicle/pedestrian/bicycle conflicts areas; if necessary, driveway improvements should include relocation of driveway access points on existing sites;

    - Require combination of parking lots and access points with joint access and reciprocal parking agreements where possible;

    - Require medians within the existing cross-section to limit turning movements and to provide pedestrian refuges at mid-block crossing locations;

    - Require site plans to locate entrance and exits to avoid vehicle queue spillback to the public right-of-way;

    - Require a continuous, safe, and convenient walkway from the public right of way, including transit stops where appropriate, to building entrances that minimizes pedestrian/vehicle conflicts; and

    - Limit or prohibit drive-up windows where peak vehicle queues cannot be accommodated on-site.

- **Policy 3.B.4 Sidewalk Network**. Require sidewalks for all new developments along major corridors.

- **Policy 3.C.1 Residential Neighborhood Streets**. Consider the effects of new development on local streets in residential areas and require new development to mitigate significant impacts to existing residential neighborhoods.

- **Policy 3.C.2 Pedestrian and Bicycle Connectivity**. Provide pedestrian and bicycle connectivity in residential street patterns. Where cul-de-sacs are permitted, pedestrian and bicycle connections to other streets or community facilities such as parks and schools is required, where feasible.

- **Policy 3.C.3 Sidewalks**. Require sidewalks for all new streets in residential developments.

- **Policy 3.D.1 Off-Street Parking Requirements**. Require new development and redevelopment to provide adequate off-street parking for vehicles and bicycles that considers urban design, economic development, and alternative travel modes, including secure long-term bicycle parking at employment centers and transit centers. Parking shall be landscaped, located convenient to new development, and easily accessible from the street system.

- **Policy 3.D.2 Context Sensitive Parking Requirements**. Provide parking supplies using a context-sensitive approach that considers the potential for shared parking and reduced parking requirements in walkable mixed-use neighborhoods and transit oriented areas.

- **Policy 3.D.3 Electric Vehicle Parking**. Incorporate electric vehicle charging stations into new multifamily, P

- **Policy 3.E.3 Transit Right-of-Way**. Consider the need for future transit right-of-way in reviewing and approving plans for development. Rights-of-way may either be exclusive or shared with other vehicles. Require new development to reserve space for future public transit stops, with turnouts, where sufficient population or employment concentrations will warrant an existing or future route.

- **Policy 3.F.1 Non-Motorized Transportation System**. Develop a comprehensive non-motorized transportation system that provides a network of connections between the city's major employment, recreational, educational, and housing areas via existing and planned bikeways and pedestrian facilities, and consider the different needs of recreational bicyclists and commuter bicyclists.

- **Policy 3.F.3 New Development**. Require developers to finance and install pedestrian pathways, bikeways, and multi-purpose paths within new development, as appropriate.

- **Policy 3.F.4 Right-of-Way**. Require new development to provide adequate rights-of-way to accommodate bikeways where identified on the bikeways map and as specified in the Bicycle and Pedestrian Master Plan, and to contribute to the development of planned bikeways.

- **Policy 3.F.5 On-Site Bicycle Facilities**. Require new multi-family residential, commercial and industrial developments to provide bicycle facilities, including bicycle parking. For employment locations with more than 50 employees, other amenities may be required, including showers and changing facilities.

- **Policy 3.F.8 Pedestrian Facility Design**. Provide safe, continuous and pleasant pedestrian paths of travel, including sidewalk width appropriate for the land use context of the street, enhanced street crossings, landscape and/or parking buffers, and pedestrian scale lighting throughout the city.

City of Ceres Public Facility Fee (PFF)

The City of Ceres has adopted Public Facility Fees that fund transportation improvements. The current fees are based on the Public Facilities Fee Nexus Study, June 14, 2010, which includes costs for a variety of public

facilities that are included in the fee. In the area of the proposed Specific Plan Area, the PFF includes the improvements listed in Table 8 of Appendix F.

3.14.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODOLOGY

The transportation impact analysis identifies foreseeable and possible impacts to roadway, transit, and bicycle/pedestrian facilities.

Roadway System

Roadway segments were evaluated by comparing average daily traffic volumes and V/C ratios for key study roadway segments. Consistent with the Ceres 2035 General Plan transportation analysis, the analysis presented in this report is based on average daily traffic volumes to address traffic flow that occurs on some study facilities associated with project area commute patterns. Table 2 of the traffic study prepared to support this EIR (Appendix F), displays daily roadway segment service volume thresholds used to evaluation roadway capacity.

Intersections

Levels of Service were calculated for this study using the methodology contained in the 2010 Highway Capacity Manual (HCM) using Synchro software. The overall LOS for intersections was determined based on the average length of delays for all motorists at signalized intersections and all-way stop-controlled intersections. At un-signalized intersections controlled by side-street stop signs the reported LOS is that associated with the "worst case."

Trip Generation

The amount of traffic generated by development of the Specific Plan Area has been estimated based on the trip generation characteristics of planned uses. Table 5 of the traffic study prepared to support this EIR (Appendix F) presents the trip generation rates employed for this analysis. Rates for residential uses were drawn from the Institute of Transportation Engineers (ITE) publication Trip Generation, 9th Edition.

As shown in Table 6 of the traffic study prepared to support this EIR (Appendix F), development of the Specific Plan Area could result in about 3,749 daily vehicle trips. During peak traffic hours, the Specific Plan may generate 294 a.m. peak-hour trips and 382 p.m. peak-hour trips.

The two existing schools located at the eastern end of the Specific Plan Area already generate trips that are part of the background traffic counts on study area roads. Based on ITE rates, these schools could be expected to be generating roughly 1,878 daily trips (½ inbound and ½ outbound) with 646 trips in the a.m. peak hour and 202 trips in the p.m. peak hour. However, Eastgate Boulevard is the primary access to the schools, and that street carries 3,402 daily trips, with 984 trips in the a.m. peak hour and 262 trips in the p.m. peak hour. Adding in the traffic volumes observed at the school access, the two schools appear to be generating about 3,960 daily trips and 1,145 a.m. peak-hour trips.

Planned Improvements

Consistent with City policy, development in the Specific Plan Area will be required to install frontage improvements as development occurs. This will include widening of Whitmore Avenue to its ultimate 4-lane section from Moore Road to Cesar Chavez Junior High School. The Specific Plan internal street system will be constructed, including extensions of Lunar Drive and Boothe Road south of Whitmore Avenue. A new local street will be constructed along the eastern limit of the new residential area abutting Cesar Chavez Junior High School and this road will use the existing western school access on Whitmore Avenue. Internal streets will also connect to Moore Road, and Moore Road will be improved as part of the project. Development in the Specific Plan Area will be accompanied by portions of a new east-west secondary collector street (Stanford Avenue) that will connect Cesar Chavez Junior High School to Boothe Road.

Trip Distribution

The regional distribution of the new trips generated by the Specific Plan will reflect the location on the eastern end of the urbanized Ceres area. The distribution of project trips has been determined from review of existing local traffic patterns, as well as consideration of traffic patterns suggested by the Ceres 2035 General Plan traffic model. The distribution pattern identified in the school's EIR was assumed. Table 7 of the traffic study prepared to support this EIR (Appendix F) presents the assumed distribution of project trips under "Existing plus Project" conditions.

The relationship between new residential development and adjoining schools has been considered in developing the a.m. peak-hour distribution assumptions. Because the Specific Plan provides ample connections to the schools, it is anticipated that most school-age children will be able to walk or ride bicycles to La Rosa Elementary School and Cesar Chavez Junior High School. However, some parents are still likely to drive onto the school campuses to drop-off or load students.

Trip Assignment

Project trips were assigned to the local area street system under the distribution assumptions presented above and the access assumptions described previously based on the "least time path" available from various locations within the Specific Plan Area. The resulting "project only" trip assignment for residentially generated traffic alone is presented in Figure 4 of the traffic study prepared to support this EIR (Appendix F).

CITY OF CERES STANDARDS OF SIGNIFICANCE

The City of Ceres has determined that the proposed project would have a significant impact on transportation and traffic if the project would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or reduction in Level of Service), either during the plus project condition, or the cumulative plus project condition.

- Exceed, either individually or cumulatively, a Level of Service standard established by the City of Ceres or Caltrans for designated roads or highways.

Roadways/Signalized Intersections: The project is considered to have a significant effect if it would:

- Cause deterioration of a signalized intersection from LOC C for secondary collectors and local streets or LOS D for primary collectors, arterials, expressways and freeways (or better) to LOS E or LOS F, or an increase in the service volume of any approach by 5 percent or more for a signalized intersection operating at LOS E or LOS F under Baseline (Existing) Conditions, or an increase in average delay of 5 or more seconds for a signalized intersection operating at LOS E or LOS F under Baseline (No Project) conditions.

- Cause deterioration of a controlled movement at an un-signalized intersection from LOS D (or better) to LOS E or LOS F, or at intersections where a controlled movement already operates at LOS E or F, one of the following:

    1. Project traffic results in satisfaction at the peak hour volume traffic signal warrant;

    2. Project traffic increases minor movement delay by more than 30 seconds; or

    3. Where the peak hour signal warrant is met without the project traffic and delay cannot be estimated, project increases traffic by 10 or more vehicles per lane on the controlled approach during the peak hour.

- The project, or any project-related mitigation measures, disrupts existing transit services or facilities. This includes disruptions caused by proposed project driveways on transit streets, impacts to transit stops/shelters, and impacts to transit operations from traffic improvements proposed or resulting from the project.

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

- Result in inadequate emergency access.

- Result in inadequate parking capacity.

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Bicycle / Pedestrian / Transit Facilities

An impact is considered significant if implementation of the project will disrupt or interfere with existing or planned bicycle, pedestrian, or transit facilities.

IMPACT ANALYSIS

IMPACT 3.14-1 Conflict with an Applicable Transportation Plan, Ordinance, Policy, or Congestion Management Program. *Development of the Specific Plan Area may generate new vehicle trips that may contribute to unacceptable traffic operations under existing plus project and existing plus approved project conditions. This could conflict with an applicable transportation plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, pedestrian and bicycle paths, and mass transit. This could also conflict with an applicable congestion management program, including, but not limited to the level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. This impact is considered* ***potentially significant****.*

Existing plus Project Traffic

The analysis of project impacts assumes 100 percent buildout of the Specific Plan Area and superimposes this traffic onto current background traffic volumes that have been adjusted to reflect the new route through the project to adjoining schools. The resulting "Existing plus Specific Plan Build Out" traffic volumes are presented in Figure 6 of Appendix F. The LOS on roadway segments based on daily volume and the peak-hour LOS occurring at study area intersections, with the development of the Specific Plan have been evaluated.

Daily Roadway Segment Operation

For the purposes of comparison, daily traffic volumes on study area roads have been projected assuming full buildout of the Specific Plan. These forecasts are presented in Table 3.14-4. As noted, this table lists Specific Plan trips, as well as the total segment volume including redistributed existing traffic.

Table 3.14-4. Roadway Segment Operations – Existing plus Project Conditions

Roadway	Location	Classification	Lanes	Existing		Existing Plus Specific Plan		
						Daily Volume		LOS
				Daily Volume	LOS	Project Only	Total	
Whitmore Avenue	Mitchell Road to Della Drive	Arterial	4	16,432	A	2,750	19,340	A
	Della Drive to Moore Road	Arterial	2+	16,432	D	**2,750**	**19,340**	**E**
	With Four Lanes		4	16,432	A		19,340	A
	Moore Rd to Boothe Road	Arterial	2+	**18,320**	**E**	**2,065**	**20,490**	**F**
	With Four Lanes		4	18,320	A		20,490	A
	Boothe Rd to Eastgate Boulevard	Arterial	2+	13,600	B	820	14,380	B
	Eastgate to Faith Home Road	Arterial	2	6,900	A	510	7,415	A
Faith Home Road	Whitmore Avenue to Roeding Road	Rural Road	2	4,100	C	80	4,180	C
Eastgate Boulevard	South of Whitmore Ave	Secondary Collector	2	3,402	A	70	3,410	A
Moore Road	Whitmore Avenue to Roeding Road	Local	2	3,127	A	1,015	4,090	A
Roeding Road	Moore Road to Faith Home Road	Collector	2	1,814	A	50	1,870	A

Notes:

Bold values exceed the minimum LOS standard. Highlighted values are a significant impact. Total volume is the sum or current traffic, WRSP trips and redistributed existing traffic.

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

As noted in Table 3.14-3, the addition of Specific Plan Area will not result in any new locations carrying daily volumes in excess of the City of Ceres minimum LOS D goal. However, without improvement, the Specific Plan will cause the segment of Whitmore Avenue from Della Drive to Moore Road to operate at LOS E and will add traffic to the segment of Whitmore Avenue from Moore Road to Boothe Road, which already operates at LOS F. Causing the segment to operate at LOS E is a significant impact, and under City policy an increase in daily traffic volumes greater than 5 percent is considered to be a significant impact when background conditions exceed LOS D. In this case, the Specific Plan's increase represents an 11-percent increase.

Development in Specific Plan Area will be required to make frontage improvements to Whitmore Avenue as development proceeds, and ultimately the project will mitigate its impacts by widening Whitmore Avenue. However, depending on where development proceeds there may be an interim period when the road is not fully widened and the Specific Plan's impact remains significant. Development in the Specific Plan Area would cause the daily traffic on Whitmore Avenue to increase by 5 percent (i.e., 916 vehicles per day) when roughly 44 percent of the Specific Plan Area residences are occupied.

Therefore, development of the Specific Plan will result in Whitmore Avenue operating at a LOS that exceeds the City's LOS D minimum or increases the current volume significantly at locations where LOS already exceed the LOS D minimum. This is considered a **potentially significant** impact. The following mitigation is applicable.

Mitigation Measure

Mitigation 3.14-1a: Widen Whitmore Avenue to Four Lanes.

If this has not occurred as a part of a separate project, the Specific Plan applicant shall cause the segment of Whitmore Avenue from Della Drive to Cesar Chavez Junior High School to be widened to 4 lanes before 44 percent of the dwelling units are occupied within the Specific Plan Area, or as directed by the City of Ceres. If this improvement is pursued under a different project, future projects under the Specific Plan shall contribute a fair share to the widening of Whitmore Avenue.

Significance after Mitigation

With the implementation of Mitigation Measure 3.14-1a, the roadway will operate at LOS A and the impact would be **less than significant**.

Peak-Hour Intersection Operations

Projected peak-hour traffic volumes have been used to project LOS assuming that, with the exception of programmed improvements at Mitchell Road / Roeding Road, no change to the traffic controls that exist today. Table 3.14-5 compares "Existing" and "Existing plus Specific Plan" LOS. As shown, development of the Specific Plan will increase the volume of traffic passing through study area intersections, and resulting traffic conditions will exceed the City's minimum standard at three locations.

The LOS on the northbound approach to the Whitmore Avenue / Moore Road intersection will continue to exceed the City's LOS D minimum with the Specific Plan, but the incremental change in delay will exceed the 30.0 seconds permitted under City guidelines. That increment could be exceeded when only 5 percent of the Specific Plan Area's residences are occupied. However, this conclusion is dependent on the actual location of initial development, as residences on the west end of the Specific Plan Area use Moore Road to a greater extent.

In the a.m. peak hour, the LOS on the southbound approach to the Whitmore Avenue / Lunar Drive intersection will drop from LOS D to LOS E, and the northbound approach will operate at LOS F. The northbound approach will operate at LOS E in the p.m. peak hour. These Levels of Service exceed the City's minimum LOS D standard. The LOS will become unacceptable when 50 percent of the residences in Specific Plan Area are developed, but again that conclusion is dependent on the location of initial development.

Development in the Specific Plan Area could cause the northbound approach to the Whitmore Avenue / Boothe Road intersection to operate at LOS F in the a.m. and p.m. peak hour. LOS F exceeds the City's minimum standard. While the LOS on the southbound approach will continue to be LOS F in the a.m. peak hour, the Specific Plan will reduce delays on this approach by adding the second eastbound through lane as a part of frontage improvements. Comparison of current and plus Specific Plan conditions indicates that the LOS E threshold would be exceeded on the northbound approach when roughly 10 percent of the residences in the Specific Plan Area are occupied.

Therefore, development of the Specific Plan will result in study intersections operating at LOS that exceed the City's LOS D minimum or increase delays significantly at locations where Levels of Service already exceed the LOS D minimum and traffic signal warrants are satisfied. This is considered a **potentially significant** impact.

The following mitigation is applicable, and the results of their implementation are noted in Figure 7 of Appendix F and Table 3.14-5.

Table 3.14-5. Intersection Operations – Existing plus Project & Mitigated Existing Plus Specific Plan Conditions

Roadway	Control	AM Peak Hour with Specific Plan				PM Peak Hour with Specific Plan			
		No Mitigation		Mitigated		No Mitigation		Mitigated	
		Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
Mitchell Road / Roeding Road	Signal	20.6	B	21.4	C	16.5	B	14.4	B
Moore Road / Roeding Road	All-Way Stop	15.7	B	17.8	D	9.5	A	10.5	B
Esmar Road / Roeding Road Northbound Approach	NB Stop	9.6	A	9.6	A	9.4	A	10.3	B
Faith Home Road / Roeding Road	All-Way Stop	10.1	B	10.0	A	9.3	A	9.3	A
Mitchell Road / Whitmore Avenue	Signal	53.1	D	53.1	D	48.3	D	48.3	D
Della Drive / Whitmore Avenue Northbound Approach Southbound Approach	NB/SB Stop	17.1 13.5	C B	16.9 13.3	C B	20.8 15.1	C C	19.7 15.3	C C
Moore Road / Whitmore Avenue Northbound Approach	NB Stop	**772.9**	**F**	14.3	B	**89.0**	**F**	15.6	C
Lunar Drive / Whitmore Avenue Southbound Approach Northbound Approach	SB Stop	34.1 **74.9**	D **F**	20.5 12.0	C B	13.8 **39.3**	B **E**	10.8 12.0	B B
Boothe Road / Whitmore Avenue	Signal	**>999**	**F**	39.7	D	**229.9**	**F**	27.2	C
Eastgate Boulevard / Whitmore Avenue	Signal	34.3	C	34.3	C	18.2	B	18.6	B
Faith Home Road / Whitmore Avenue	All-Way Stop	16.0	C	16.0	C	19.6	C	19.4	C

Notes: sec/veh = Second per Vehicle.

Bold values exceed the minimum LOS standard.

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

Mitigation Measure

Mitigation Measure 3.14-1b: Improvements for Full Buildout of the Specific Plan Area.

Specific Plan traffic volumes have been compared to MUTCD peak-hour warrants, and the results are noted in Table 12 of Appendix F. As indicated the same locations that satisfy warrants under existing conditions do so with the implementation of the Specific Plan. However, as noted previously, signalization is not necessary the preferred action at each location. Alternatives for improving the LOS at study intersections have been evaluated and a preferred plan has been developed that will improve the LOS. Implementation of the following improvements is recommended to provide acceptable, LOS D or better operations:

- The Specific Plan applicant shall cause the construction of a barrier at the Whitmore Avenue / Moore Road intersection to prohibit northbound left turns when directed by the City of Ceres.
- The Specific Plan applicant shall cause the construction of a barrier at the Whitmore Avenue / Lunar Drive intersection to prohibit northbound and southbound left turns and cross traffic when directed by the City of Ceres.
- The Specific Plan applicant shall cause the construction of a signalized intersection with separate left turn lanes at the Whitmore Avenue / Boothe Road intersection before 10 percent of the Specific Plan's dwelling units are occupied or when directed by the City of Ceres.

Significance after Mitigation

The "triggers" for these improvements have been identified based on the need to avoid impacts at specific locations. However, in the case of the mitigation for intersections on Whitmore Avenue, the amount of development which triggers intersection impacts varies from 5 percent occupancy at Moore Road to 60 percent at Mitchell Road. Thus, the choice of trigger for a mitigation that affects all intersections, such as the Eastgate Boulevard extension, will need to be determined by the City of Ceres. The recommended trigger is linked to impacts to the Whitmore Avenue / Boothe Road intersection, where occupancy of 10 percent of the Specific Plan residences would impact the intersection.

With Mitigation 3.14-1b at the Whitmore Avenue / Moore Road intersection, the northbound left turns will be prohibited and the length of delays on the northbound approach will greatly reduce. Westbound traffic leaving the Specific Plan Area would be diverted to Boothe Road and to Roeding Road. The City's LOS D minimum can be met in the a.m. and p.m. peak hour. In the long term, the City may elect to further eliminate Moore Road access, which was the case with the area north of Whitmore Avenue. Similarly, with Mitigation T-1B, prohibiting left turns onto Whitmore Avenue would be the applicable strategy at the Whitmore Avenue / Lunar Drive intersection. Existing southbound left turns and the Specific Plan northbound left turns would be diverted to the Boothe Road intersection. With this change, the City's LOS D minimum can be met in the a.m. and p.m. peak hour. The traffic signal included in the City's current PFF program is the applicable action at the Whitmore Avenue / Boothe Road intersection. Concurrently, with Mitigation T-1C, the northbound approach will be widened to accommodate a separate left turn lane. Therefore, with the implementation of Mitigation Measure 3.14-1b, peak hour Levels of Service satisfying the City of Ceres' minimum LOS D standard are

projected and these measures would reduce the significant impacts associated with some intersections operations under the Specific Plan Area to a **less-than-significant** level.

Existing plus Approved Projects Traffic

This report section considers the impacts of the Specific Plan within the context of short-term future conditions that assume occupancy of other approved projects.

Daily Roadway Segment Operation

As shown in Table 3.14-6, occupancy of Specific Plan will incrementally increase the volume of traffic on study area roads, and the LOS on Whitmore Avenue from Della Drive to Cesar Chavez Junior High School will continue to exceed the LOS D standard. However, the issue is addressed by Mitigation 3.14-1, and no further mitigation is required.

Table 3.14-6. Roadway Segment Operations – Existing plus Approved Projects Conditions

Roadway	Location	Classification	Lanes	Existing			Existing Plus WRSP		
				Daily Volume		LOS	Daily Volume		LOS
				Daily Volume	Total		Project Only	Total	
Whitmore Avenue	Mitchell Road to Della Drive	Arterial	4	585	17,020	A	2,750	19,925	A
	Della Drive to Moore Road	Arterial	2+	585	17,020	D	**2,750**	**19,925**	**E**
	Moore Rd to Boothe Road	Arterial	2+ / 4	**585**	**18,905**	**E**	2,065	21,075	A
	Boothe Road to Eastgate Boulevard	Arterial	2+	585	14,195	B	820	14,785	B
	Eastgate to Faith Home Road	Arterial	2	405	7,305	A	510	7,820	A
Faith Home Road	Whitmore Avenue to Roeding Road	Rural Road	2	665	4,765	C	80	4,845	C
Eastgate Boulevard	South of Whitmore Avenue	Secondary Collector	2	40	3,445	A	70	3,410	A
Moore Road	Whitmore Avenue to Roeding Road	Local	2	0	3,130	A	1,015	4,090	A
Roeding Road	Moore Road to Faith Home Road	Collector	2	1,195	3,010	A	50	3,065	A

Notes:

Bold values exceed the minimum LOS standard. Highlighted values are a significant impact. Total volume is the sum or current traffic, WRSP trips and redistributed existing traffic.

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

Peak-Hour Intersection Operations

As indicated in Table 3.14-7, the addition of Specific Plan trips to the baseline EPAP conditions will contribute to one intersection changing to LOS E and three intersections continuing to operate at LOS in excess of the City's LOS D standard.

The Mitchell Road / Whitmore Avenue intersection will operate at LOS E. LOS E exceeds the City's LOS D minimum standard. The incremental change in delay caused by the project is 8.8 seconds, which exceeds the City's allowable standard of 5.0 seconds. The intersection improvements included in the City fee program will be needed (i.e., 6-lane Mitchell Road).

The LOS on the northbound approach to the Whitmore Avenue / Moore Road intersection will continue to exceed the City's LOS D minimum with the project, and the incremental change in delay will exceed the 30.0 seconds permitted under City guidelines.

In the a.m. peak hour, the LOS on the southbound approach to the Whitmore Avenue / Lunar Drive intersection will drop from LOS D to LOS E, and the northbound approach will operate at LOS F in the a.m. and LOS E in the p.m. peak hour. These Levels of Service exceed the City's minimum LOS D standard.

Development in Specific Plan Area could cause the northbound approach to the Whitmore Avenue / Boothe Road intersection to operate at LOS F in the a.m. and p.m. peak hour. LOS F exceeds the City's minimum standard.

Therefore, development of Specific Plan will increase delays significantly at locations where Levels of Service already exceed the LOS D minimum under existing condition and traffic signal warrants are satisfied. This is considered a **potentially significant** impact.

While these impacts are significant, the same on-site mitigations identified for Existing plus Project impacts remain valid, and two additional mitigations are applicable. Figure 10 of Appendix G presents Mitigated EPAP plus WRSP traffic volumes. Table 3.14-7 also identifies mitigated Levels of Service.

Table 3.14-7. Intersection Operations – Existing plus Approved Projects & Mitigated Existing plus Approved Projects Conditions

Roadway	Control	AM Peak Hour with WRSP				PM Peak Hour with WRSP			
		No Mitigation		Mitigated		No Mitigation		Mitigated	
		Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
Mitchell Road / Roeding Road	Signal	20.0	C	20.2	C	24.4	C	25.4	C
Moore Road / Roeding Road	All-Way Stop	17.2	C	19.6	C	10.8	B	10.9	B
Esmar Road / Roeding Road Northbound Approach	NB Stop	9.9	A	9.8	A	10.2	B	10.2	B
Faith Home Road / Roeding Road	All-Way Stop	10.3	A	10.3	A	10.1	B	10.1	B
Mitchell Road / Whitmore Avenue	Signal	52.3	D	51.3	D	**66.5**	**E**	54.8	D
Della Drive / Whitmore Avenue Northbound Approach Southbound Approach	NB/SB Stop	17.4 13.6	C B	17.1 13.3	C B	21.5 15.5	C C	22.5 15.1	C C
Moore Road / Whitmore Avenue Northbound Approach	NB Stop	**785.6**	**F**	14.5	B	**102.8**	**F**	17.1	C
Lunar Drive / Whitmore Avenue Southbound Approach Northbound Approach	SB Stop	**35.0** **72.6**	**E** **F**	20.7 12.1	C B	14.1 **42.4**	B **E**	11.4 12.5	B B
Boothe Road / Whitmore Avenue	Signal	**>999**	**F**	52.6	D	**267.3**	**F**	23.2	C
Eastgate Boulevard / Whitmore Avenue	Signal	35.1	D	34.9	C	18.8	C	18.8	B
Faith Home Road / Whitmore Avenue	All-Way Stop	17.2	C	17.2	C	28.5	D	28.7	D

Notes: Second per Vehicle.

Bold values exceed the minimum LOS standard.

Source: KD Anderson & Associates 2018, Data compiled by AECOM in 2018.

Mitigation Measure

Mitigation Measure 3.14-1c: Improvements at Mitchell Road / Whitmore Avenue Intersection.

The City's impact fee program includes funds for improving Mitchell Road to a 6-lane facility. This improvement will result in LOS D or better conditions. Implementation of the following improvements is recommended to provide acceptable, LOS D or better operations:

- The Specific Plan applicants shall contribute their fair share towards the cost of constructing an additional through- lane in each direction on Mitchell Road by paying adopted traffic impact mitigation fees.

Significance after Mitigation

With Mitigation 3.14-1c Mitchell Road will be widened to a 6-lane facility. Therefore, adequate LOS will be provided, and the project's impact would be **less than significant**.

IMPACT 3.14-2 Hazards Due To a Design Feature. *Future development activities within the Specific Plan Area would not increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). This impact is considered less than significant.*

This impact is related to site-specific design features and potentially incompatible uses. Potential hazardous design features that may occur to provide access to future development include sharp curves, dangerous intersections, or shared turn lanes. However, Policy 2.A.14 indicates that the City shall promote street, alley, and sidewalk maintenance to encourage safe use for transportation purposes. Therefore, any future roadway improvements required within the City limits or Specific Plan Area would be constructed to American Association of State Highway and Transportation Officials, Caltrans, County, and City's roadway standards, as applicable, and would therefore not result in potential traffic-related hazards. Therefore, impacts are considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.14-3 Inadequate Emergency Access. *Future development activities within the Specific Plan Area would not result in inadequate emergency access. This impact is considered less than significant.*

This impact is related to site-specific design features and emergency access. Emergency access impacts would be evaluated at a project-specific level by the City at the time of future development application submittal.

Ceres 2035 General Plan Policy 3.B.1 indicates that the City shall seek to maintain acceptable traffic flow conditions along Ceres' major corridors while allowing for new development along these corridors. To this end, the City shall require site plans for new development along Hatch Road, Mitchell Road, and Whitmore Avenue. This policy requires consolidation of driveway access; if necessary, driveway improvements should include relocation of driveway access points on existing sites, and it also requires combination of parking lots and access points with joint access and parking agreements where possible.

As discussed previously, the City is pursuing a Safe Routes to School program to widen Whitmore Avenue between Moore Road and Cesar Chavez Junior High School to provide improved pedestrian and bicycle facilities. That work would also provide four lanes on Whitmore Avenue in the area of existing homes. This would also provide sufficient width for emergency vehicle access. In addition to compliance with Ceres 2035 General Plan policies, the City would assure that continuous and adequate emergency access would occur throughout the Specific Plan Area. Therefore, the impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.14-4 Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities, or Otherwise Decrease the Performance or Safety of Such Facilities. *Future development activities within the Specific Plan Area could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise, decrease the performance or safety of such facilities. Therefore, this impact is considered* ***potentially significant****.*

Bicycles and Pedestrians

The proposed Specific Plan would construct and develop structures or infrastructure (including roadways) that could potentially result in the decreased performance or safety of public transit, bicycle, or pedestrian facilities. The Ceres 2035 General Plan seeks to protect residential neighborhoods from excessive and high-speed traffic to maintain the quality and safety of these neighborhoods. Ceres 2035 General Plan Policies 3.F.1, 3.F.3, 3.F.4, 3.F.5, and 3.F.8 are all intended to promote the design of new neighborhoods that incorporate pedestrian/bike routes and develop a comprehensive non-motorized transportation system.

As noted under the discussion of existing conditions, facilities for pedestrians and bicyclists are present on most streets north of Whitmore Avenue. However, dedicated pedestrian facilities are absent along the Specific Plan Area's Whitmore Avenue frontage. This route is already used by pedestrians, including children walking to Cesar Chavez Junior High School and La Rosa Elementary School, and the Specific Plan will result in an appreciable increase in traffic on Whitmore Avenue.

The City's Safe Routes to School project in concert with developer frontage improvements will address this issue. Development in the Specific Plan Area will be required to make frontage improvements to Whitmore Avenue as development proceeds, and ultimately the project will mitigate its impacts by widening Whitmore Avenue including sidewalks and bicycle lanes. However, depending on where development proceeds and the schedule for the Safe Routes to School program there may be an interim period when the safe route is not completed when the Specific Plan's impact remained significant. Development in the Specific Plan Area would cause the daily traffic on Whitmore Avenue to increase substantially (i.e., by 5 percent) when roughly 44 percent of the Specific Plan Area residences are occupied.

As a result potential motor vehicles and pedestrian conflicts may occur. Therefore, development of Specific Plan will result in potential conflicts between motor vehicles and pedestrians on Whitmore Avenue where dedicated facilities are lacking and the Specific Plan's traffic increase is substantial. This is considered a **potentially significant** impact. The following mitigation is applicable.

Mitigation Measure

Mitigation Measure 3.14-4a: Construct Pedestrian Facility.

Implementation of the following improvement is recommended to provide adequate pedestrian facilities:

- The Specific Plan applicant shall cause an all-weather pedestrian facility to be constructed on the south side of the segment of Whitmore Avenue from Della Drive to Cesar Chavez Junior High School before 44 percent of the dwelling units are occupied within the Specific Plan Area, or as directed by the City of Ceres.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-4a would ensure that future pedestrian and bicycle needs are properly planned and designed to support the developments. With this improvement, adequate pedestrian facilities will be provided, and the project's impact will be **less than significant**.

Public Transit

The proposed Specific Plan Area would construct or develop structures or infrastructure (including roadways) that could potentially result in the decreased performance or safety of public transit facilities. Also, the residents within the Specific Plan Area may create the demand for transit services as an alternative to the private automobile. However, assuming two percent of the residences creates a candidate for transit service, the number of Specific Plan riders alone could reach eight. This demand can be accommodated by current services and would not justify changes to current transit routes. However, the Specific Plan can contribute to the cumulative demand for transit service by constructing the bus-pull outs at the Whitmore Avenue / Boothe Road intersection that are included in the City PFF program.

Therefore, development of Specific Plan Area result in an incremental increase in area demand for transit service and the impact is considered **potentially significant.** The following mitigation is applicable.

Mitigation Measure

Mitigation Measure 3.14-4b: Construct Transit Facility.

The City PFF program includes constructing the bus-pull outs at the Whitmore Avenue / Boothe Road intersection. Implementation of the following improvements is recommended to provide adequate transit facilities:

- The Specific Plan applicant shall cause a bus pull-out to be constructed at the Whitmore Avenue / Boothe Road intersection.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-4b would ensure that future transit facility needs are properly planned and designed to support the developments. With this improvement, adequate transit facilities will be provided, and the project's impact would be **less than significant**.

4 ALTERNATIVES

CEQA requires that an EIR describe the relative environmental effects of alternatives to the proposed project and evaluate their comparative impacts. The City has considered a range of alternatives that can feasibly attain most of the basic project objectives and avoid or substantially lessen one or more significant effects. Alternatives that would impede to some degree the attainment of the project objectives or would be more costly may also be considered.

The alternatives analysis must identify the potential alternatives, and include sufficient information about each to allow meaningful evaluation, analysis, and comparison with the proposed project. The discussion must focus on potentially feasible alternatives that can avoid or substantially reduce the significant effects of the proposed project. The environmentally superior alternative must be identified among the alternatives considered.

Qualitative and quantitative measures of alternative feasibility may include site suitability, economic viability, availability of infrastructure, general plan consistency, consistency or conflict with other plans or regulatory limitations, jurisdictional boundaries, and whether the project applicant can reasonably acquire, control, or otherwise have access to an alternative site. Similarly, if an alternative would cause one or more significant effects, in addition to those that would be caused by the proposed project, the significant effects of the alternative must be discussed, but in less detail than the project analysis.

As required by CEQA, an alternatives analysis must evaluate the "no project" alternative. "No project" is defined as what would occur within the project site if the project were not to be approved. The "no project" alternative may consider what could reasonably occur on the project site if existing development trends continue, to the degree that adopted or proposed general plans and zoning, and existing infrastructure, services, or other relevant conditions allow.

4.1 SELECTION OF ALTERNATIVES

Alternatives were selected for evaluation in this EIR based on criteria in the *CEQA Guidelines* (California Code of Regulations [CCR] Section 15126.6). These criteria include

- Ability of the alternative to attain most of the basic project objectives;
- Feasibility of the alternative; and
- Ability of the alternative to avoid or substantially reduce one or more significant environmental effects of the proposed project.

The City also received input as a part of the Notice of Preparation (NOP) and scoping process regarding environmental issues of interest, some of which are addressed, as appropriate, by the alternatives provided in this section:

- water supply
- traffic
- noise
- biological resources

- air quality impacts, including criteria air pollutants and health impacts
- consistency with airport land use plans
- agricultural resources
- availability of public services

Please see Appendix A for the NOP and responses to the NOP.

4.1.1 Ability of the Alternative to Attain Most Project Objectives

Potential alternatives were identified and evaluated relative to the objectives of the proposed project. For the purpose of alternatives analysis under CEQA, project objectives may not be defined so narrowly that the range of alternatives is unduly constrained.

Project Objectives

Key objectives for the proposed project are:

- Promote a distinct, identifiable neighborhood that integrates a variety of housing types;
- Encourage walking, bicycling, and transit use by Specific Plan Area residents, and provide bicycle and pedestrian connectivity throughout the Specific Plan Area and to adjacent bicycle and pedestrian facilities;
- Provide safe bicycle and pedestrian connections to and from the two schools within the Specific Plan Area;
- Ensure appropriate access and connectivity between the Specific Plan Area and existing developed areas, as well as areas planned for future development;
- Incorporate best practices and conservation measures into the design and provision of sewer, water, storm drainage, parks and open space, and other public improvements necessary to serve future development of the Specific Plan Area; and
- Develop a Specific Plan that would facilitate annexation of the existing Cesar Chavez Junior High School and La Rosa Elementary School.

4.1.2 Feasibility of the Alternatives

Each alternative was evaluated according to the "rule of reason" and general feasibility criteria suggested by the CEQA Guidelines Section 15126.6 as follows:

> The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

The inclusion of an alternative in an EIR does not necessarily mean the alternative is feasible. Rather, the inclusion of an alternative in an EIR indicates that lead agency staff has determined that the alternative is potentially feasible.

4.1.3 AVOIDANCE OR SUBSTANTIAL REDUCTION OF SIGNIFICANT EFFECTS

The evaluation of alternatives must also take into account the potential of the alternative to avoid or substantially lessen any of the significant effects of the proposed project, as identified in this EIR. The potential environmental effects of the proposed project are summarized in the "Executive Summary" of this EIR.

4.2 ALTERNATIVES CONSIDERED BUT REJECTED FROM DETAILED ANALYSIS IN THE EIR

4.2.1 OFF-SITE ALTERNATIVE

Oftentimes, an off-site alternative is evaluated to consider the possibility of avoiding significant location-related impacts and provide a greater range of possible alternatives to consider in the decision making process. The key question is whether an off-site alternative is available that would feasibly attain most of the basic objectives of the proposed project and avoid or substantially lessen any of the environmental effects of the proposed project (CEQA Guidelines Section 15126.6[a]).

In this case, the applicant owns property within the Specific Plan Area. The Specific Plan Area is bordered on two sides by existing City limits and by City infrastructure and services. LAFCo policy would not support an alternative location that was not adjacent to the City limits and that could create an island. The applicant does not have access to any other similarly and conveniently-located property or group of properties that could generate the same amount of residential development that the proposed project site could.

In addition, an off-site alternative would not meet all of the project's basic objectives. Specifically, one of the objectives is to provide safe bicycle and pedestrian connections to the two schools within the Specific Plan Area. With an off-site alternative, these connections would not be developed. In addition, an off-site alternative would not facilitate the annexation of the two existing schools. The City of Ceres currently provides sewer and water services to those existing schools under an Out of Boundary Agreement approved by Stanislaus LAFCO, which asserts that annexation of those schools would someday be considered by the City of Ceres.

In addition, many of the potential impacts occur on a regional scale. An alternative anywhere in the same air basin would have the same impacts on air quality. It is expected that potentially significant and significant impacts on agricultural resources; air quality; biological resources; geology, soils, minerals, and paleontological resources; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; noise and vibration; population and housing; public services and utilities, including recreation and energy; and transportation identified throughout this EIR for the proposed project would be similar because an off-site alternative would be likely be located in a similar environmental setting and would have similar impacts.

Given that this is the only project site that would meet the above-described project objectives; the likelihood that a similar site would have similar environmental impacts; and feasibility considerations related to site acquisition, the City has elected in this case not to examine an off-site alternative in detail.

4.2.2 REDUCED SIZE ALTERNATIVE

Another common alternative analyzed to reduce significant impacts is based on an environmental resource that is tied to a specific geographic location. For example, a proposed project that impacts on-site wetlands could be compared to an alternative that avoids impacts to on-site wetlands by reducing the project size. Alternatively, if a portion of a proposed project site has a higher potential for cultural resources to occur, a smaller project might be proposed that avoids that portion. However, in this case, the Specific Plan Area lacks sensitive environmental resources, such as significant cultural resources, biological resources, scenic vistas, mineral resources, or established communities and significant environmental constraints, such as on-site hazards, geologic formations unsuitable for structures, flood hazard zones, or significant streams or rivers. Avoiding a certain portion of the project site would not reduce any significant impacts to a less-than-significant level. Since there are no specific areas of the Specific Plan Area that contain environmental resources or constraints, the City has elected not to examine this alternative in detail.

4.2.3 DEVELOPMENT WITHIN THE COUNTY

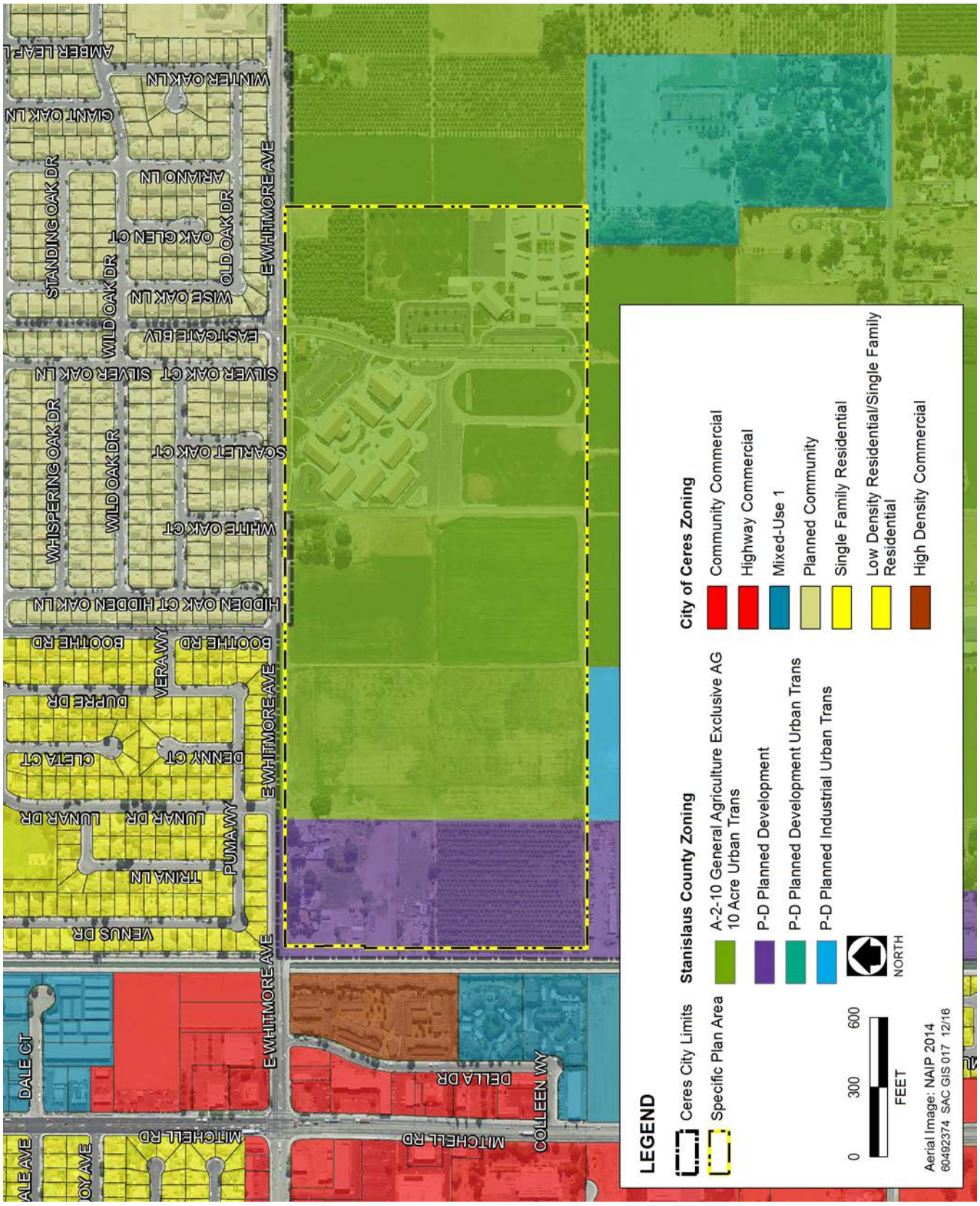
The Specific Plan Area is currently in unincorporated Stanislaus County and the County's General Plan has land use designations and zoning for properties within the Specific Plan Area. The Specific Plan Area is designated by the County General Plan as Urban Transition and, as shown in Exhibit 4-1, is zoned by Stanislaus County as General Agriculture with a 10-acre minimum lot size (A-2-10) and Planned Development.

Development of the Specific Plan Area consistent with the County's General Plan land use and zoning designations would be inconsistent with the Ceres 2035 General Plan. The Ceres 2035 General Plan identifies the Specific Plan Area as within the City's Urban Growth Area, which encompasses all land envisioned for development. The Specific Plan is included in the Ceres 2035 General Plan Land Use Diagram, and includes the same land use designations for the Specific Plan Area (City of Ceres 2018; see also Exhibit 2-4 in Chapter 2, "Project Description").

In addition, development under Stanislaus County zoning designations would not meet the project objectives, specifically to promote a distinct, identifiable neighborhood that integrates a variety of housing types and develop a Specific Plan that would facilitate annexation of the existing Cesar Chavez Junior High School and La Rosa Elementary School. Therefore, the City has elected not to examine this alternative in detail.

4.2.4 AGRICULTURAL BUFFER

As described in Section 3.2, "Agricultural Resources," residential uses planned in the southern portion of the Specific Plan Area would be partially set back from ongoing and potential future agricultural operations by Stanford Avenue. Stanford Avenue is proposed as a two-lane roadway with sidewalks in the southeastern and southwestern portions of the Specific Plan Area. In these areas, Stanford Avenue would provide an approximately 28-foot buffer from the property line of residences to the existing agricultural uses south of the project site. Although a buffer zone would be established between the edge of development and adjacent off-site agricultural land, conflicts could still occur between agricultural and urban land uses. In addition, the whole Specific Plan Area wound Agricultural-urban interfaces have the potential for conflicts between agricultural practices and adjacent urban land uses, depending on specific future agricultural practices. Health risks and nuisances potentially created by agricultural operations include, but are not limited to, exposure to pesticide and herbicide applications, exposure to dust (from soil preparation), exposure to noise (from machinery and trucks), and odors.



Source: County of Stanislaus, City of Ceres

Exhibit 4-1 Zoning

Implementation of Mitigation Measure 3.2-2 would require the City to provide a Right-to Farm Notice to notify prospective residents of potential land use conflicts associated with agricultural activities adjacent to the project site.

As shown in Exhibit 4-1, much of the area adjacent to the project site is designated by the County General Plan as Urban Transition and zoned by Stanislaus County as General Agriculture with a 10-acre minimum lot size (A-2-10). Stanislaus County has guidelines to minimize conflicts resulting from normal agricultural practices as a consequence of new or expanding uses approved in, or adjacent to the A-2 (General Agriculture) zoning district. County guidelines suggest a minimum 150-foot wide buffer. Permitted uses within a buffer area include public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low people intensive uses or permitted and permanent non-agricultural uses. Walking and bike trails are allowed within setback areas provided they are designed without rest areas. In addition, a six-foot-high fence of uniform construction must be installed along the perimeter of the developed area of the use to prevent trespassing onto adjacent agricultural lands (County of Stanislaus 2015).

Even though the County's buffer guidelines would not be applicable once the project site is annexed to the City, it should be noted that the 28-foot buffer provided by Stanford Avenue is less than the County's recommended standard of 150 feet between active agricultural land and new non-agricultural uses.

However, in this instance, these guidelines are not appropriate since the Ceres 2035 General Plan Land Use Diagram shows the area to the south and east of the project site as planned for future development (i.e., Low Density Residential, Service Commercial, and Light Industrial) (City of Ceres 2035). Areas designated for continuing agricultural land uses are located east of Faith Hill Road and south of East Redwood Road. No areas identified for continued agricultural use in the Ceres 2035 General Plan are adjacent to the Specific Plan Area (City of Ceres 2018). Thus, agricultural conflicts will likely not be an issue as the City develops consistent with its 2035 General Plan.

4.3 ALTERNATIVES CONSIDERED IN DETAIL IN THE EIR

This section provides a comparative analysis of the alternatives that were selected for detailed analysis in the EIR:

- Alternative 1: No Project Alternative – Existing Land Use
- Alternative 2: Revised Site Plan Alternative to Reduce Transportation, Noise, and Greenhouse Gas Emissions Impacts
- Alternative 3: Revised Site Plan Alternative to Protect Existing Trees

The below Table 4.3-1 shows an initial comparison between the alternatives compared to the proposed project.

Table 4.3-1. Proposed Project and Alternatives Summary

	Proposed Project		Alternative 1: No Project Alternative – Existing Land Use			Alternative 2: Revised Site Plan Alternative to Reduce Transportation, Noise, and Greenhouse Gas Emissions		Alternative 3: Revised Site Plan Alternative to Protect Existing Trees	
Land Use	Acres	Units	Acres	Units		Acres	Units	Acres	Units
Agricultural	0	N/A	44.3	N/A		0	N/A	0	N/A
School	36								
Low-Density Residential	28	196	9.3	6		15.0	130	28	196
Medium-Density Residential	6.6	85	0	0		9.8	142	6.6	85
High-Density Residential	6.4	160	0	0		7.0	168	6.4	160
Parks / Open Space	5.2	N/A	0	N/A		7.8	N/A	5.2	N/A
Undeveloped	0	N/A	1.9	N/A		0	N/A	0	N/A
Streets and Rights-of-Way	12.2	N/A	2.9	N/A		18.8	N/A	12.2	N/A
Total Units	**441 units**		**6 units**			**440 units**		**441 units**	

Notes: The acreages for each use type may vary from that shown in the table above as roadways are aligned, lots are configured, and other site-specific elements are refined as a part of future development within the Specific Plan Area.

4.3.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE – EXISTING LAND USE

CEQA Guidelines Section 15126.6(e)(2), states that a discussion of the "No Project" alternative must consider "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans." The Specific Plan Area is currently under the jurisdiction of Stanislaus County and currently accommodates agricultural uses, housing, and schools. The site has almond orchards in the southwestern and northeastern portions and alfalfa, oats, and rye hay in the central portion. Some portions are fallow or not currently under production. Ceres Unified School District operates two schools within the Specific Plan Area: Ceres Chavez Junior High School and La Rosa Elementary School. There are existing single-family homes within the Specific Plan Area on lots of between approximately ½ acre and 2 acres in land area.

Therefore, the No-Project Alternative for purposes of this analysis consists of continued agricultural, housing, and school use, as shown in Table 4.3-1.

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

This alternative would not meet the project's objectives to promote a distinctive, identifiable neighborhood that integrates a variety of housing types and develop a Specific Plan that would facilitate annexation of the existing Cesar Chavez Junior High School and La Rosa Elementary School.

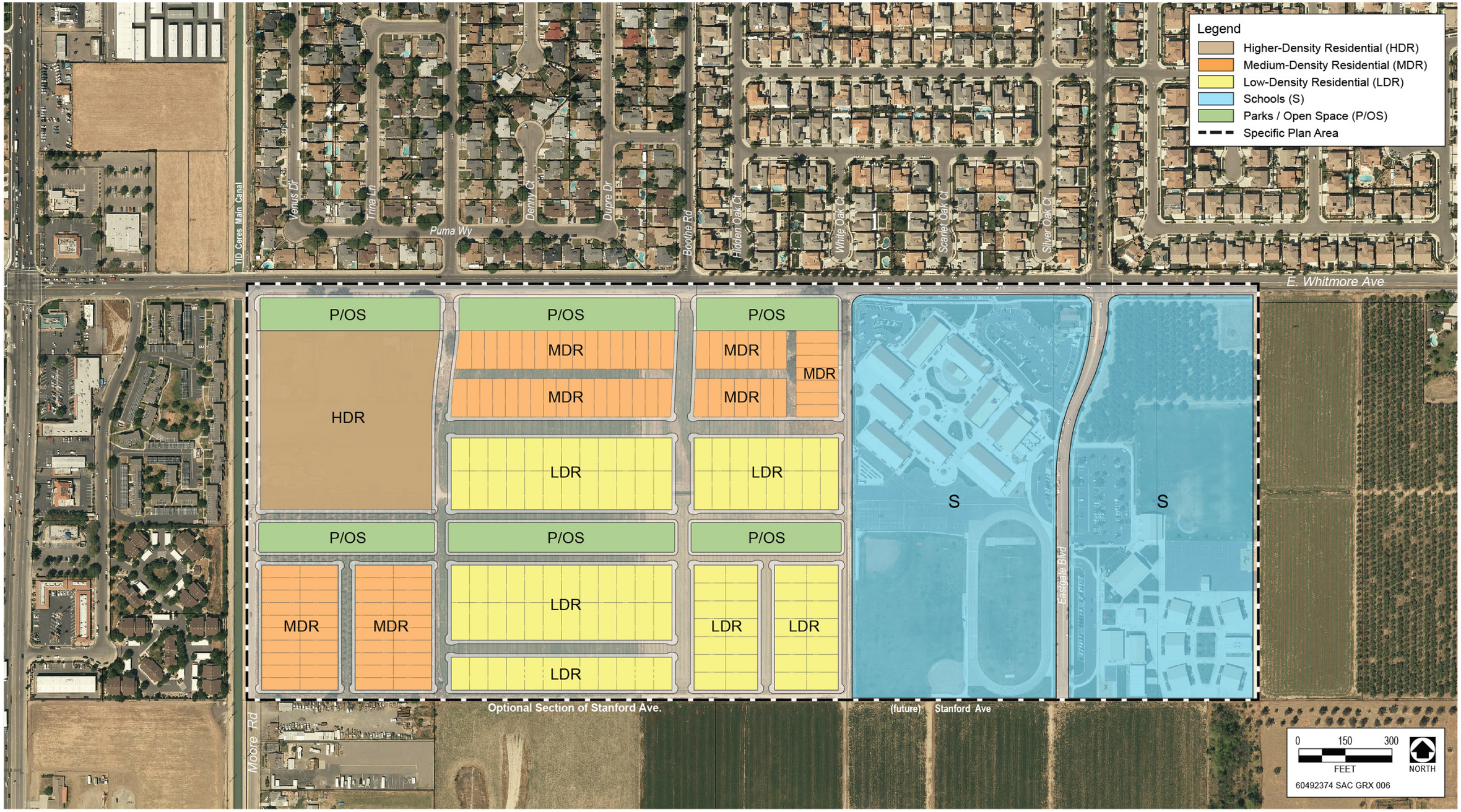
4.3.2 ALTERNATIVE 2: REVISED SITE PLAN ALTERNATIVE TO REDUCE TRANSPORTATION, NOISE, AND GREENHOUSE GAS EMISSIONS IMPACTS

This alternative is intended to reduce potential impacts related to transportation, noise, and greenhouse gas emissions. Alternative 2 includes a buffer from Whitmore Avenue that is sufficient to achieve 65 decibels (dB) at the front façade of homes to be consistent with guidance in the City's General Plan. This would require a buffer of approximately 107 feet from the centerline of Whitmore Avenue. This alternative would also increase the amount of open space along a relatively higher-volume roadway compared to the proposed project (7.8 rather than 5.2 acres) (Exhibit 4-2).

This alternative would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (vehicle miles traveled, or "VMT") compared to the proposed project, along with decreasing the rate of transportation-related greenhouse gas (GHG) emissions. Also, as density increases, typically energy demand per unit would decrease. So, with a greater proportion of this alternative for medium- and high-density residential development, GHG emissions associated with energy generation and use would be decreased compared to the proposed project.

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

Alternative 2 could potentially meet each of the project objectives. Development of a reduced size alternative could be designed in a way that would promote a distinct, identifiable neighborhood that integrates a variety of housing types, encourage a variety of forms of transit, provide connectivity, and incorporate best practices into the design. However, Alternative 2 would not meet the City's objective related to best practices and conservation measures in providing multi-use parks, open space, and drainage to the same degree as the proposed project. Instead of focusing on the efficient development and operation of the Central Park, as anticipated under the proposed Specific Plan, this alternative would break the open space into two areas along the northern edge of the Specific Plan Area, as well as just south of the center of the Specific Plan Area. This would not provide an approach that would be as efficient for construction or long-term maintenance of these two multi-use open space areas. From a combined stormwater, parks, and open space perspective, Alternative 2 would have less space for actual open space activities and trails because most of the room would be needed for stormwater slopes and drainage. Alternative 2 would be less efficient and more costly than the proposed Specific Plan. With two multi-use drainage, park, and open space areas, there would higher costs and associated environmental effects associated with grading, higher costs related to additional inlet/outlet structures, and higher costs associated with additional drainage piping and manholes. Long-term maintenance costs would be higher, as well. While the City considers alternative that may be more costly, for the other reasons outlined here, this alternative would not achieve the City's objective to the same extent as would the proposed Specific Plan.



Source: AECOM 2016

Exhibit 4-2 Alternative 2

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4.3.3 ALTERNATIVE 3: REVISED SITE PLAN ALTERNATIVE TO PROTECT EXISTING TREES

The analyses in Section 3.1, "Aesthetics," and Section 3.4, "Biological Resources," conservatively assumed that all existing vegetation, including mature trees at existing residential properties, could be removed as a result of the project and that all existing habitat functions would be lost. This is a conservative assumption since it is possible future site planning and design efforts could avoid the loss of these trees and since the Specific Plan would allow, but does not require development.

This alternative is intended to reduce the potential that the two large valley oak (*Quercus lobata*) trees present within the fenced back yard of the residence just west of the junior high school would be lost. For this alternative, the low-density residential development planned for this area would be switched with some of the open space, as shown in Exhibit 4-3. Alternative 3 would have the same yield as the proposed project.

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

Alternative 3 could potentially meet each of the project objectives. Alternative 3 could be designed in a way that would promote a distinct, identifiable neighborhood that integrates a variety of housing types, encourage a variety of forms of transit, provide connectivity, and incorporate best practices into the design.

4.4 COMPARISON OF ALTERNATIVES

This section compares the potential environmental effects of each alternative to the potential environmental effects of proposed project that are examined in detail in this EIR.

4.4.1 AESTHETICS

ALTERNATIVE 1

Alternative 1 envisions continued agricultural production, residential, and school uses on the project site. The site's visual character would not change. There would be no impact on scenic vistas or scenic resources. There would be no additional sources of light or glare. The aesthetic impacts associated with Alternative 1 would be similar to existing conditions and would be substantially reduced compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project. As such, the type of aesthetics impacts would be similar to those of the proposed project. Alternative 2 would considerably alter existing views of, and from the project site. Alternative 2 would alter the visual character of the project site from both public and private viewing locations.

In addition, just as with the proposed project, Alternative 2 would bring sources of nighttime lighting and could construct facilities with reflective surfaces that could cause glare. However, Alternative 2 includes a buffer along Whitmore Avenue that would reduce light spillage beyond public rights-of-way. *[Reduced]*

ALTERNATIVE 3

Alternative 3 would include the same type of development as the proposed project, but arranged differently within the project site. As such, the type and extent of aesthetics impacts would be similar to those of the proposed project. This alternative is intended to keep two existing valley oak trees and, as such, would reduce impacts relative to the proposed project in relation to these specific existing on-site features. The City's Land Use and Community Design Element includes a policy suggesting the City will support a robust system of street trees in order to increase shade, minimize runoff, and create a comfortable and visually attractive environment (Policy 2.F.7) and other policies direct the preparation of streetscape plans that include street trees (Policies2.A.13, 2.L.3, 2.L.6, 3.F.8, 4.E.1, and 4.E.2). The Agriculture and Natural Resources Element identifies a preference for the planting of native trees to preserve the visual integrity of the landscape (Policy 4.D.4). The City's policy framework suggests that trees, and native trees, in particular, are valued for their aesthetic benefits.

Like the proposed project, Alternative 3 would considerably alter existing views of, and from the project site. Alternative 3 would alter the visual character of the project site from both public and private viewing locations. In addition, just as with the proposed project, Alternative 3 would bring sources of nighttime lighting and could construct facilities with reflective surfaces that could cause glare. This would increase ambient nighttime lighting and daytime glare in the vicinity of the project site, similar to the proposed project. However, with the preservation of the oak trees, the impact would be reduced compared to the proposed project. *[Reduced]*

4.4.2 AGRICULTURAL RESOURCES

ALTERNATIVE 1

According to the Stanislaus County Important Farmland map, published by the California Division of Land Resource Protection (DOC 2014d), a little more than half of the project site is designated as Prime Farmland and active agricultural land uses on the project site coincide with this farmland designation.[1] Under Alternative 1, the project site would continue to be used for continued agricultural, housing, and school uses. There would be no conflict with any Williamson Act contracts or agricultural zoning, or any other impact to agricultural resources. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would involve approximately the same amount of development as the proposed project. Similar to the proposed project, implementation of Alternative 2 would permanently convert an estimated 44 acres agricultural farmland, including Prime Farmland, to nonagricultural uses. *[Similar]*

ALTERNATIVE 3

Alternative 3 would involve approximately the same amount of development as the proposed project. Similar to the proposed project, implementation of Alternative 3 would permanently convert an estimated 44 acres agricultural farmland, including Prime Farmland, to nonagricultural uses. *[Similar]*

[1] Using the Farmland Mapping and Monitoring Program GIS files from the Department of Conservation produces totals for the land area in the project site that are very slightly different from the totals reported elsewhere in this EIR. The difference is less than five acres.



Source: AECOM 2017

Exhibit 4-3 Alternative 3

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4.4.3 AIR QUALITY

ALTERNATIVE 1

Under Alternative 1, the project site would continue to be used for continued agricultural, housing, and school uses. Existing air pollutant emissions associated with agricultural activities would still occur under Alternative 1. However, since no construction or development would occur, the amount of construction -related air pollutants that would be generated under Alternative 1 would be substantially reduced as compared to the proposed project. Operational generation of criteria air pollutants and precursors, as well as exposure to toxic air contaminants, would also be reduced compared to the proposed project. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would allow development on a smaller development footprint compared to the proposed project. This alternative would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (VMT) compared to the proposed project, along with associated air pollutant emissions. There is extensive literature quantifying the connections between characteristics of the built environment and travel behavior, including extensive empirical evidence showing that development density, mixing of land uses, and a highly connected transportation network can reduce trip frequency and expand mode choice (to modes other than passenger vehicle). There have also been several efforts to synthesize studies of the relationships between travel demand (trip generation, mode, and trip length) and land use, community design, characteristics of the transportation network, and other related factors.[2] Also, as density increases, typically energy demand per unit would decrease, reducing off-site air pollutant emissions impacts related to energy generation.

As with the proposed project, Alternative 2 would involve the temporary and short-term generation of criteria air pollutants and precursors resulting from demolition and construction activities. Constructing Alternative 2 could also expose sensitive receptors to substantial pollutant concentrations. Earthmoving and construction activities associated with off-site improvements would generate temporary and short-term criteria air pollutant and precursor emissions, as well, and could partly occur at the same time that on-site grading and other activities take place. Overall, impacts would be similar compared to the proposed project. *[Similar]*

ALTERNATIVE 3

Alternative 3 envisions a similar mix of uses and density as the proposed project. Unlike Alternative 2, Alternative 3 would have the same overall density as the proposed project. As with the proposed project, Alternative 3 would involve the temporary and short-term generation of criteria air pollutants and precursors resulting from demolition and construction activities. Constructing Alternative 3 could also expose sensitive receptors to substantial pollutant concentrations. Earthmoving and construction activities associated with off-site

[2] Reid Ewing and Robert Cervero. 2001. "Travel and the Built Environment" Transportation Research Record, 1780, Paper No. 01-3515. Robert Schneider, Kevan Shafizadeh, and Susan Handy. 2012 (December). "Methodology for Adjusting ITE Trip Generation Estimates for Smart-Growth Projects. California Smart-Growth Trip Generation Rates Study. University of California, Davis. U.S. Environmental Protection Agency. 2013 (June). Our Built and Natural Environments: A Technical Review of the Interactions among Land Use, Transportation, and Environmental Quality. Second Edition. UC Davis Institute of Transportation Studies. Richard Lee, Joshua Miller, Rachel Maiss, Mary Campbell, Kevan Shafizadeh, Deb Niemeier, and Susan Handy. 2011 (September). Evaluation of the Operation and Accuracy of Five Available Smart Growth Trip Generation Methodologies. Research Report – UCD-ITS-RR-11-12.

improvements would generate temporary and short-term criteria air pollutant and precursor emissions, as well, and could partly occur at the same time that on-site grading and other activities take place. Impacts would be similar compared to the proposed project. *[Similar]*

4.4.4 BIOLOGICAL RESOURCES

ALTERNATIVE 1

Because no development would occur under Alternative 1, no impacts to wildlife and their habitats would occur. The users of the land would be required to comply with all applicable State and federal regulations that prohibit impacts to special-status animals and their habitats. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would be the same amount of development as the proposed project. Similar to the proposed project, Alternative 2 could potentially result in the loss of suitable nesting and foraging habitat for Swainson's hawk, white-tailed kite, burrowing owl, and other raptors; loss and disturbance of potential nesting habitat for loggerhead shrike; and loss of orchard trees and other trees that may support breeding western red bats. Mitigation Measures 3.4-1a, 3.4-1b, 3.4-1c, 3.4-2, 3.4-3 would reduce significant impacts on raptors and other birds to a less-than-significant level because these measures would ensure that these species are not disturbed during nesting. Implementing Mitigation Measure 3.4-3 and 3.4-5 would reduce potentially significant impacts on bats to a less-than-significant level because it would ensure that project construction would not result in bat mortality or abandonment and loss of young and would provide replacement roosts to compensate for loss of existing maternity roosts of common bat species. Impacts related to the loss and disturbance of forging and nesting habitat for special-status wildlife would be similar in type and extent since the area envisioned for development would be the same. [*Similar*]

ALTERNATIVE 3

Alternative 3 would be the same amount of development as the proposed project. As with the proposed project, Alternative 3 would adversely affect nesting and forging habitat for Swainson's hawk, white-tailed kite, burrowing owl, and other raptors and for loggerhead shrike and other common birds. Mitigation Measures 3.4-1a, 3.4-1b, 3.4-1c, 3.4-2, 3.4-3 would reduce significant impacts on raptors and other birds to a less-than-significant level because these measures would ensure that these species are not disturbed during nesting. Implementing Mitigation Measure 3.4-3 and 3.4-5 would reduce potentially significant impacts on bats to a less-than-significant level because it would ensure that project construction would not result in bat mortality or abandonment and loss of young and would provide replacement roosts to compensate for loss of existing maternity roosts of common bat species. Overall, the impact of this alternative is similar to the proposed project. *[Similar]*

4.4.5 CULTURAL RESOURCES

ALTERNATIVE 1

As stated above, continued agricultural, housing, and school uses on the existing parcels would not meet the definition of a "project" under CEQA and, therefore, a mitigation monitoring plan would not be implemented. However, all property owners would still be required to comply with Section 7050.5 of the Health and Safety Code, which governs the treatment of human remains. In addition, Section 5097.98 of the California Public

Resources Code prevents any person from obtaining or possessing Native American artifacts or human remains taken from a grave or cairn.

Archaeological investigations at the project site concluded that no known significant cultural resources are present. Although there is always a potential that previously unknown deposits may be present under the ground surface, the project site has been disturbed by agricultural cultivation and the construction and use of residences, and the identification of surface prehistoric resources during project implementation is unlikely. Because Alternative 1 would entail continued agricultural, housing, and school uses, a very small amount of earth-moving activities would occur as compared to the proposed project. Therefore, the potential for adverse impacts to cultural resources would be substantially lower. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would entail the same amount of ground disturbance as the proposed project and would be subject to similar regulations protecting cultural resources. Therefore, the potential for adverse impacts to cultural resources would be similar. [*Similar*]

ALTERNATIVE 3

Alternative 3 would entail the same amount of ground disturbance as the proposed project and would be subject to similar regulations protecting cultural resources. Therefore, the potential for adverse impacts to cultural resources would be similar. [*Similar*]

4.4.6 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

ALTERNATIVE 1

Under Alternative 1, the project site would continue to be used for continued agricultural, housing, and school uses. Thus, no site-specific geotechnical reports or grading and erosion control plans would be prepared. A records search indicated that no paleontological resources have been recorded from the project site. Because the project site is composed of a paleontologically sensitive rock formation, fossils may be present under the ground surface. However, portions of the project site have already been disturbed by the construction of residences and schools. Because Alternative 1 would entail continued agricultural, housing, and school uses, a very small amount of earth-moving activities would occur as compared to the proposed project. Furthermore, ground disturbance associated with continued agricultural activities would not be deep enough to affect any undiscovered subsurface paleontological resources. Therefore, the potential for adverse impacts to paleontological resources would be substantially lower compared to the proposed project. No additional properties would be at risk under Alternative 1, while the proposed project would add housing and recreational open space. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would be the same amount of development as the proposed project. The same mitigation measures identified for the proposed project would also be available to Alternative 2, such as incorporating recommendations from site-specific geotechnical reports, grading and erosion control plans, and preservation of paleontological resources if encountered during construction. *[Similar]*

ALTERNATIVE 3

Alternative 3 would be the same amount of development as the proposed project. The same mitigation measures identified for the proposed project would also be available to Alternative 3, such as incorporating recommendations from site-specific geotechnical reports, grading and erosion control plans, and preservation of paleontological resources if encountered during construction. *[Similar]*

4.4.7 GREENHOUSE GAS EMISSIONS

ALTERNATIVE 1

Under Alternative 1, the area would continue to be used for agricultural, housing, and school use. Agriculture does produce some GHG emissions, but the emissions associated with ongoing agriculture would be less than the GHG emissions associated with construction and operation of the proposed project. Thus, the amount of GHG emissions that would be generated under Alternative 1 would be substantially reduced as compared to the proposed project. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would allow development on a smaller development footprint compared to the proposed project. As noted, this alternative would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (VMT) compared to the proposed project, along with associated air pollutant emissions. Increasing development density can reduce trip frequency and expand mode choice (to modes other than passenger vehicle). Also, as density increases, typically energy demand per unit would decrease, reducing off-site GHG emissions impacts related to energy generation. Overall density would increase by approximately 30 percent under Alternative 2 compared to the proposed project.

As with the proposed project, Alternative 2 would involve the temporary and short-term generation of GHG emissions resulting from demolition and construction activities. Earthmoving and construction activities associated with off-site improvements would generate temporary and short-term GHG emissions, as well, and could partly occur at the same time that on-site grading and other activities take place. Overall, impacts would be similar compared to the proposed project. *[Reduced]*

ALTERNATIVE 3

Alternative 3 envisions a similar mix of uses and density as the proposed project. Unlike Alternative 2, Alternative 3 would have the same overall density as the proposed project. As with the proposed project, Alternative 3 would involve the temporary and short-term generation of GHG emissions resulting from demolition and construction activities. Earthmoving and construction activities associated with off-site improvements would generate temporary and short-term GHG emissions, as well, and could partly occur at the same time that on-site grading and other activities take place. Impacts would be similar compared to the proposed project. *[Similar]*

4.4.8 HAZARDS AND HAZARDOUS MATERIALS

ALTERNATIVE 1

Since Alternative 1 would not include any construction, the potential for accidental spills of hazardous materials or construction workers exposure to hazardous materials would be greatly reduced.

Pesticides may have been used historically at the site, and ongoing pesticide use could be expected on site and on the adjacent agricultural lands. Agricultural chemical use represents a potential source of environmental contamination that could pose a human health and environmental hazard during future activities. It is possible that the residences or schools could use hazardous materials as well. However, the potential hazardous materials impacts of the baseline conditions and its potential impacts would be reduced relative to impacts associated with implementation of the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would involve the same mix of uses and same location as the proposed project. Therefore, the potential for accidental spills of hazardous materials or construction workers exposure to hazardous materials would be similar. *[Similar]*

ALTERNATIVE 3

Alternative 3 would involve the same mix of uses and same location as the proposed project. Therefore, the potential for accidental spills of hazardous materials or construction workers exposure to hazardous materials would be similar. *[Similar]*

4.4.9 HYDROLOGY AND WATER QUALITY

ALTERNATIVE 1

Alternative 1 would result continued agricultural, housing, and school use of the project site. Because specific measures required under the proposed project to address water quality (a grading and erosion control plan, a stormwater pollution prevention plan, a drainage plan, and a best management practice and water quality maintenance plan) would not be implemented, agricultural production—which would allow the use of fertilizers and pesticides. While the City does not have any information to suggest that on-site agricultural operations have or will cause water quality issues, it is possible that agriculture can negatively affect water quality, even when done properly, due to nutrient loads from fertilizer, toxic fecal coliform from animal waste, or increased erosion and runoff. Agricultural uses would be required to comply with appropriate Stanislaus County Department of Agricultural regulations for environmental protections and Title 9, “Health and Safety,” of the Stanislaus County Municipal Code.

Development of impervious surfaces within the Specific Plan Area would reduce the amount of water available for local groundwater recharge. Under Alternative 1, continued agricultural uses would continue to allow irrigation water and stormwater to percolate through the soil to the aquifer. Therefore, Alternative 1 would reduce impacts associated with depletion of groundwater supplies as compared to the proposed project. [*Reduced*]

ALTERNATIVE 2

Construction and grading activities associated with implementation of Alternative 2 have the potential to cause temporary and short-term increased erosion and sedimentation. Construction-related chemicals, dust, and suspended solids could potentially contribute to pollutant loads in stormwater runoff.

Alternative 2 would reduce the amount of impervious surfaces added on-site compared to the proposed project and therefore would decrease the peak discharge flow and rate of stormwater runoff generated on the project site. Thus, Alternative 2 would also reduce potential effects related to groundwater recharge compared to the proposed project.

Mitigation strategies identified for the proposed project could also apply to this alternative, such as a grading and erosion control plan, a stormwater pollution prevention plan, a drainage plan, and a best management practice and water quality maintenance plan. Because the proposed project would implement requirements to reduce construction-related water quality impacts, and because the project would appropriately collect, convey, and treat stormwater runoff generated during project operation, potential hydrology and water quality impacts from the proposed project would be reduced to a less-than-significant level after mitigation. [*Reduced*]

ALTERNATIVE 3

Construction and grading activities associated with implementation of Alternative 3 have the potential to cause temporary and short-term increased erosion and sedimentation. Construction-related chemicals, dust, and suspended solids could potentially contribute to pollutant loads in stormwater runoff.

Alternative 3 have the same amount of impervious surfaces added on-site compared to the proposed project and therefore would have the same peak discharge flow and rate of stormwater runoff generated on the project site. Thus, Alternative 3 would have similar potential effects related to groundwater recharge compared to the proposed project.

Mitigation strategies identified for the proposed project could also apply to this alternative, such as a grading and erosion control plan, a stormwater pollution prevention plan, a drainage plan, and a best management practice and water quality maintenance plan. Because the proposed project would implement requirements to reduce construction-related water quality impacts, and because the project would appropriately collect, convey, and treat stormwater runoff generated during project operation, potential hydrology and water quality impacts from the proposed project would be reduced to a less-than-significant level after mitigation. [*Similar*]

4.4.10 LAND USE AND PLANNING

ALTERNATIVE 1

The use of the project site for continued agricultural, housing, and school use would not impact land use and planning. Similar to the proposed project, Alternative 1 would not conflict with any applicable land use or habitat conservation plan or divide an established community. *[Similar]*

ALTERNATIVE 2

Similar to the proposed project, Alternative 2 could require some minor changes to land use designations in order to accommodate access, on-site open space, and other site-specific conditions. However, this alternative could be designed in a way that would not conflict with any applicable land use. It would also not conflict with any habitat conservation plan or divide an established community. *[Similar]*

ALTERNATIVE 3

Similar to the proposed project, Alternative 3 could require some minor changes to land use designations in order to accommodate access, on-site open space, and other site-specific conditions. However, this alternative could be designed in a way that would not conflict with any applicable land use. It would also not conflict with any habitat conservation plan or divide an established community. *[Similar]*

4.4.11 NOISE AND VIBRATION

ALTERNATIVE 1: NO-PROJECT ALTERNATIVE

Alternative 1 envisions continued agricultural, housing, and school use. Each of these uses can produce some noise, but with the assumed development of the proposed project, on- and off-site construction and operational noise and vibration would be substantially higher than with Alternative 1. Noise associated with the use of agricultural equipment could continue on the project site. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (VMT) compared to the proposed project, along with associated transportation noise. Also, Alternative 2 includes a buffer from Whitmore Avenue that is sufficient to achieve 65 decibels (dB) at the front façade of homes to be consistent with guidance in the City's General Plan. This would require a buffer of approximately 107 feet from the centerline of Whitmore Avenue. This would reduce noise exposure for on-site proposed residences. As with the proposed project, Alternative 2 would involve the temporary and short-term noise and vibration resulting from demolition and construction activities. Earthmoving and construction activities associated with off-site improvements would generate temporary and short-term noise and vibration, as well. Overall, impacts would be similar compared to the proposed project. *[Reduced]*

ALTERNATIVE 3

Alternative 3 has approximately the same mix of uses and is in the same location as the proposed project. Unlike Alternative 2, Alternative 3 would have the same overall density as the proposed project and would not decrease travel demand and associated transportation noise compared with the proposed project. As with the proposed project, Alternative 3 would involve the temporary and short-term noise and vibration resulting from demolition and construction activities. Earthmoving and construction activities associated with off-site improvements would generate temporary and short-term noise and vibration. Overall, impacts would be similar compared to the proposed project. *[Similar]*

4.4.12 POPULATION AND HOUSING

ALTERNATIVE 1

Under Alternative 1, the project site would continue to be used for agricultural, housing, and school use. No population or housing would be added. No people or existing housing would be displaced, necessitating the construction of replacement housing elsewhere. No improvements would be completed that could induce population growth. Impacts would be reduced. [*Reduced*]

ALTERNATIVE 2

Alternative 2 has a slightly different mix of housing compared with the proposed project. This alternative could provide housing opportunities for a fewer number of people – adding up to 1,476 compared to the estimate for the proposed project of 1,485 persons (see Table 4.4-1). As with the proposed project, this alternative could potentially result in the demolition of approximately six existing single-family homes if the owners choose to sell or develop their property. Thus, impacts would be similar. *[Similar]*

Table 4.4-1. Alternative 2 Estimated Population

Land Use	Dwelling Units	Average Household Size	Estimated Population
Low-Density Residential (LDR)	130	3.6	468
Medium-Density Residential (MDR)	142	3.6	511
High-Density Residential (HDR)	168	2.96	497
Total	**440**	**N/A**	**1,476**

Source: 2011-2015 American Community Survey (ACS)

ALTERNATIVE 3

Under Alternative 3, a similar amount of development would occur compared to the proposed project. The estimated maximum population would be the same compared to the proposed project (see Table 4.4-2). As with the proposed project, this alternative could potentially result in the demolition of approximately six existing single-family homes if the owners choose to sell or develop their property. Thus, impacts would be similar. *[Similar]*

Table 4.4-2. Alternative 3 Estimated Population

Land Use	Dwelling Units	Average Household Size	Estimated Population
Low-Density Residential (LDR)	196	3.6	706
Medium-Density Residential (MDR)	85	3.6	306
High-Density Residential (HDR)	160	2.96	474
Total	**441**	**N/A**	**1,485**

Source: 2011-2015 American Community Survey (ACS)

4.4.13 PUBLIC SERVICES, INCLUDING RECREATION, UTILITIES, AND SERVICE SYSTEMS + ENERGY

ALTERNATIVE 1

Alternative 1, which would entail continued agricultural, housing, and school use, would have only a minor, negligible effect related to the provision of law enforcement, fire protection, education, and parks and recreation services. Alternative 1 would not increase the demand for water, wastewater service and treatment, electrical services, natural gas services, and communications services. Continued agricultural production under Alternative 1 would use a similar amount of water (156 acre-feet per year [afy]) compared to existing conditions and would have less water demand than the proposed project, Alternative 2, or Alternative 3. The energy demands would not change compared to baseline conditions. [*Reduced*]

ALTERNATIVE 2

Since Alternative 2 would marginally reduce the number of residents that would be accommodated with new housing on-site, the project's law enforcement, fire protection, public school services, and parks and recreational services needs would be proportionally reduced compared with the proposed project. However, since both Alternative 2 and the proposed project would be required to comply with applicable requirements and pay applicable development impact fees, the impact on public services and recreation would be similar.

Alternative 2 would result in the same amount of development as the proposed project. Therefore, the increased demand for water supply, wastewater treatment, solid waste disposal, electricity, and natural gas under Alternative 2 would be similar to the proposed project.

Alternative 2 would consume energy for both construction and operation. However, it is expected that construction-related fuel consumption associated with either the proposed project or Alternative 2 would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region. This alternative – just as with the proposed project – would be required to comply with State building code standards that require a high level of energy efficiency. In addition, the residences constructed in the project area would generally be more energy efficient than average, similar use buildings in the area. This is because current building code energy efficiency requirements are more stringent compared to those applied in the past and future effective building code energy efficiency requirements will be more stringent than those that currently apply.

Considering this information, similar to the proposed project, Alternative 2 would not be expected to cause the inefficient, wasteful, or unnecessary consumption of energy. While the total energy demand may be more under the proposed project compared to Alternative 2, the efficiency of energy use is anticipated to be similar. [*Similar*]

ALTERNATIVE 3

Alternative 3 would be similar to the proposed project related to the provision of law enforcement, fire protection, education, and parks and recreation services. However, since both Alternative 3 and the proposed project would be required to comply with applicable requirements and pay applicable development impact fees, the impact on public services and recreation would be similar.

Alternative 3 would result in the same amount of development as the proposed project. Therefore, the increased demand for water supply, wastewater treatment, solid waste disposal, electricity, and natural gas under Alternative 3 would be similar to the proposed project.

Alternative 3 would consume energy for both construction and operation. However, it is expected that construction-related fuel consumption associated with either the proposed project or Alternative 3 would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region. This alternative – just as with the proposed project – would be required to comply with State building code standards that require a high level of energy efficiency. In addition, the residences constructed in the project area would generally be more energy efficient than average, similar use buildings in the area. This is because current building code energy efficiency requirements are more stringent compared to those applied in the past and future effective building code energy efficiency requirements will be more stringent than those that currently apply.

Considering this information, similar to the proposed project, Alternative 3 would not be expected to cause the inefficient, wasteful, or unnecessary consumption of energy. The total energy demand and the efficiency of energy use are anticipated to be similar. [*Similar*]

4.4.14 TRAFFIC

ALTERNATIVE 1

Because Alternative 1 would entail continued agricultural, housing, and school use and would not require any construction, the volume of construction- and operation-related traffic would be substantially lower than the proposed project. Alternative 1 would not provide circulation improvements that would benefit existing schools on-site. [*Reduced*]

ALTERNATIVE 2

As with the proposed project, Alternative 2 would generate travel demand during construction and long-term occupation of the Specific Plan Area. Compared to the proposed project, this alternative would decrease the amount of land for low-density residential development and increase the amount of land provided for medium-density and high-density development compared to the proposed project. This would reduce per-unit travel demand (VMT) compared to the proposed project. Increasing development density can reduce trip frequency and expand mode choice (to modes other than passenger vehicle). Overall density would increase by approximately 30 percent under Alternative 2 compared to the proposed project. As with the proposed project, Alternative 2 would involve the temporary and short-term trips during demolition and construction activities – since this alternative is very similar in overall scale to the proposed project, construction-related trips are anticipated to be similar, as well. Overall, impacts would be similar compared to the proposed project. [*Reduced*]

ALTERNATIVE 3

Alternative 3 envisions a similar mix of uses and density as the proposed project. Unlike Alternative 2, Alternative 3 would have the same overall density as the proposed project. As with the proposed project, Alternative 3 would involve the temporary and short-term trips during demolition and construction activities. Impacts would be similar compared to the proposed project. [*Similar*]

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Alternative 1 would be the Environmentally Superior Alternative, as shown in Table 4.5-1. This alternative provides the greatest opportunity for reduction in environmental effects of the proposed project, reducing impacts in 13 topic areas. However, Alternative 1 does not meet any of the project objectives including annexation of the existing schools, Cesar Chavez Junior High and La Rosa Elementary. Other than Alternative 1, Alternative 2 would be the Environmentally Superior Alternative, reducing impacts in five topic areas compared to the proposed project. However, as noted above, Alternative 2 would not meet the project objectives to the same extent as the proposed Specific Plan.

Table 4.5-1. Comparison of Significant Environmental Effects of the Alternatives to the Proposed Project

Environmental Issue Area	Alternative 1: No Project Alternative – Existing Land Use	Alternative 2: Revised Site Plan Alternative to Reduce Transportation, Noise, and Greenhouse Gas Emissions	Alternative 3: Revised Site Plan Alternative to Protect Existing Trees
Aesthetics	Reduced	Reduced	Reduced
Agricultural Resources	Reduced	Similar	Similar
Air Quality	Reduced	Similar	Similar
Biological Resources	Reduced	Similar	Similar
Cultural Resources	Reduced	Similar	Similar
Geology, Soils, Minerals, and Paleontological Resources	Reduced	Similar	Similar
Greenhouse Gas Emissions	Reduced	Reduced	Similar
Hazards and Hazardous Materials	Reduced	Similar	Similar
Hydrology and Water Quality	Reduced	Reduced	Similar
Land Use And Planning	Similar	Similar	Similar
Noise and Vibration	Reduced	Reduced	Similar
Population and Housing	Reduced	Similar	Similar
Public Services, Including Recreation, Utilities, and Service Systems + Energy	Reduced	Reduced	Similar
Traffic	Reduced	Reduced	Similar
Total Reduced Impact Topics	**13**	**5**	**1**

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5 OTHER CEQA CONSIDERATIONS

This chapter addresses California Environmental Quality Act (CEQA) considerations that are required as part of an EIR, including:

- Cumulative Effects (Section 5.1);
- Growth-Inducing Effects (Section 5.2);
- Significant Irreversible Environmental Changes (Section 5.3); and
- Significant and Unavoidable Environmental Effects (Section 5.4).

5.1 CUMULATIVE IMPACTS

Cumulative impacts do not refer to project-related impacts, but the impacts of a proposed project when considered with the impacts of past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (*CEQA Guidelines*). Other past, present, and future projects that would contribute to environmental impacts of the proposed project are referred to as "related projects."

The *CEQA Guidelines* require that cumulative impacts be analyzed in an EIR. As set forth in the *CEQA Guidelines* (14 CCR Section 15130[b]), "the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. The analysis should be guided by the standards of practicality and reasonableness, and it should focus on the cumulative impacts to which the other identified projects contribute to the cumulative impact."

As stated in CEQA Section 21083(b)(2), a project may have a significant effect on the environment if "its effects are individually limited but cumulatively considerable." According to the CEQA Guidelines Section 15355:

> "Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project which added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, as per the *CEQA Guidelines*: "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." The analysis in this section includes:

- a determination of whether the long-term impacts of related past, present, and future plans and projects would cause a cumulatively significant impact; and

- a determination as to whether implementation of the Specific Plan would have a "cumulatively considerable" contribution to any significant cumulative impact. (See CEQA Guidelines Sections 15130[a]-[b], Section 15355[b], Section 15064[h], and Section 15065[c]).

In other words, the required analysis intends to first create a broad context through which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale beyond the Specific Plan Area itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from related projects is itself significant (*i.e.*, "cumulatively considerable" according to CEQA).

5.1.1 METHODS OF ANALYSIS

The *CEQA Guidelines*, Section 15130(b)(1), identifies two approaches to analyzing cumulative impacts. The first is the summary approach (also known as the "plan" approach), wherein the relevant projections, as contained in an adopted general plan or related planning document that evaluates regional or areawide conditions, are summarized. The second is the list approach, through which a defined set of past, present, and reasonably anticipated future projects producing related or cumulative impacts is considered for analysis.

Cumulative analyses included in this EIR are based on an understanding of anticipated growth within the region that would affect the severity of project impacts identified in this EIR, based on adopted plans for Ceres and the region. In addition, to further enhance the cumulative analysis, major projects occurring within the vicinity of the Specific Plan Area have been considered, as described below. Using both the plan approach and list approach provides the most comprehensive set of land use change that could contribute to potential cumulative effects.

5.1.2 CUMULATIVE CONTEXT

REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The *Stanislaus County 2014 Regional Transportation Plan/Sustainable Communities Strategy* (2014 RTP/SCS) is the region's blueprint for future transportation improvements and investments based on specific transportation goals and objectives defined by the Stanislaus Council of Government (StanCOG), the public, and elected officials (StanCOG 2014a). The 2014 RTP/SCS is intended to strengthen the link between land use and transportation planning, recognizing the significant connection between these two areas and their impact on the region's quality of life. The plan presents a strategy to accommodate the substantial expected growth in the region, while promoting economic vitality, providing more housing and transportation choices, promoting healthy living, and improving communities through an efficient and well-maintained transportation network (StanCOG 2014a). The California Air Resources Board (ARB) established greenhouse gas (GHG) emissions reduction targets for passenger vehicles (on-road light-duty trucks and cars). These targets were used as the basis for developing the SCS. For the StanCOG region, the targets include: providing a 5 percent reduction from 2005 emissions levels by 2020 and providing a 10 percent reduction from 2005 emissions levels by 2035 (StanCOG 2014b).

StanCOG prepared an EIR to examine the impacts of regional land use change assumed under the RTP/SCS (State Clearinghouse Number 2013012012) (StanCOG 2014b). This EIR, which helps to establish the cumulative context for the proposed project, is incorporated by reference. Please see Appendix F for a summary of impacts and mitigation measures. StanCOG's EIR identified significant and unavoidable impacts related to aesthetic

changes, loss of agricultural land, construction-related air pollutant emissions, toxic air contaminant exposure, loss of special status species and habitat, loss of known and unknown cultural resources, risk from ground shaking, soil constraints for development, construction-related GHG emissions, increase in water demand, erosion and runoff, flood hazards, disruption of existing residences and businesses, construction-related noise and vibration, traffic noise, and operational environmental noise exposure.

The RTP/SCS uses land use change assumptions that were developed at the regional level and considered proposed land use changes in San Joaquin County and Merced County, as well as Stanislaus County (both incorporated and unincorporated areas). The impact analysis focused on Stanislaus County, but these other counties were included in order to better understand land use and transportation relationships in the broader region. A baseline year of 2008 was used to prepare the RTP/SCS, as well as a planning horizon of 2040. In 2008, the RTP/SCS analysis identified a total population of 501,597, 169,075 households, and 174,997 employees. By 2040, the RTP/SCS analysis projects that these figures would increase to a population of 688,730, with 235,433 households and 236,032 employees. This assumed land use change includes Ceres, as well as development in Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, Waterford, and unincorporated Stanislaus County. The countywide population increase was estimated to be 37% between 2008 and 2040[1] (StanCOG 2014a).

For Ceres, the RTP/SCS assumed that between 2010 and 2040, the population of Ceres will increase from 45,417 to 74,256 (63 percent), the number of housing units will increase from 13,673 to 21,864 (60 percent), and employment will increase from 7,349 to 10,709 (46 percent) (StanCOG 2014a). As discussed in Section 3.10, Land Use and Planning," the preferred scenario identified in the RTP/SCS anticipates development of new housing within the Specific Plan Area, and development under the Specific Plan is consistent with this regional scenario.

CITY OF CERES 2035 GENERAL PLAN

The other planning document that establishes the cumulative context for the project is the Ceres 2035 General Plan (2018). The Ceres 2035 General Plan formalizes a long-term vision for the physical evolution of Ceres and is intended to guide day-to-today decisions concerning Ceres' development. The Ceres 2035 General Plan outlines policies, standards, and program to guide development in the City's Planning Area.[2] In addition, the Ceres 2035 General Plan identifies an Urban Growth Area that encompasses all land envisioned for development and designates a Residential Reserve and an Industrial Reserve for areas intended for future planning and development after the planning horizon of the General Plan (City of Ceres 2018).

The Ceres 2035 General Plan establishes the city's overall approach to development, transportation, environmental quality, public services, infrastructure, and parks and open spaces through 2035. The Ceres 2035 General Plan anticipates approximately 24,000 new residents, 6,900 new housing units, and 20,800 new jobs (City of Ceres 2018:2-34).

[1] The California Department of Finance (DOF) provides another point of reference. DOF's population projections show a total of 714,910 Stanislaus County in 2040 (DOF 2017). This is a 34-percent increase compared to the 2015 total of 532,297.

[2] City of Ceres Planning Area consists of the area within the city limits, the area within its sphere of influence, and areas within the adjacent unincorporated areas where the City anticipates annexation in the future.

CITY OF CERES MASTER PLANS AND SPECIFIC PLANS

The City has adopted the Ceres Downtown Specific Plan, Mitchell Road Corridor Specific Plan, West Landing Specific Plan, and Eastgate Planned Community Master Plan. Two additional master plans, the Copper Trails Master Plan and the Maple Glen Master Plan, were drafted but never adopted by the City. The following discussion summarizes the existing and planned land uses proposed in each plan area. Table 5-1 identifies the number of dwelling units and commercial, office, and/or industrial square footage that could be developed under each plan. Exhibit 5-1 shows the location of related projects.

Ceres Downtown Specific Plan

Ceres Downtown Specific Plan was adopted in 2011 and encompasses 121 acres in Downtown Ceres. The Ceres Downtown Specific Plan builds on existing investments made Downtown, including the development of a Community Center in 2009, a fire station in 2003, and the Turlock Irrigation District offices in 2009. In addition, the Downtown Specific Plan is inspired by the existing retail businesses, historical resources, residential neighborhoods, and parks in the area. Policies and strategies to achieve this vision include attracting new development Downtown; enhancing the unique character of each of the north/south streets; improving the streetscapes and multi-modal transportation infrastructure; and providing connections between new and existing green spaces.

Mitchell Road Corridor Specific Plan

The Mitchell Road Corridor Specific Plan encompasses approximately 450 acres along 2.5 miles of Mitchell Road. The Specific Plan is intended to guide development to produce an urban corridor that integrates industrial, commercial, and residential uses. The Specific Plan emphasizes large-scale commercial development in the southern portion of the plan area near State Route (SR) 99; a mix of local-serving uses in the central portion of the plan area; and a mix of recreational, residential, commercial and office uses in the area north of Hatch Road near the Tuolumne River. The Mitchell Road Corridor Specific Plan identifies design guidelines that cover site planning, architecture, circulation, open space, and other aspects of physical planning and design.

West Landing Specific Plan

The West Landing Specific Plan encompasses approximately 960 acres of land. Although the land was annexed in 2012, most of the plan area has not yet been developed, with the exception of the Stanislaus County-related buildings, including the Public Safety Center, County Sheriff/Detention Center (Jail), Community Services Agency, Animal Shelter, and Agricultural Center. The vision for West Landing includes two elementary schools, a mixed-use and compact development pattern, and a diversity of housing choices. The West Landing Specific Plan would permit the development of single-family and multi-family homes; commercial, office, research and development, light manufacturing, warehousing, distribution; and two elementary schools.

5.1.3 RELEVANT PROJECTS

The list of related past, present, and reasonably foreseeable future projects used for this cumulative analysis includes development projects expected to occur in the City's Planning Area[3], established by the Ceres 2035

[3] City of Ceres Planning Area consists of the area within the City limits, the area within its sphere of influence, and areas within the adjacent unincorporated areas where the City anticipates annexation in the future.

General Plan, and other potential development projects in the unincorporated Stanislaus County. The projects listed in Table 5-2 and shown in Exhibit 5-1 are not intended to be an all-inclusive list of projects in the region, but rather an identification of larger projects approved or planned in the region that may affect the same resources as the proposed project.

Table 5-1. Related Projects in the City of Ceres and Stanislaus County

Map Key	Project Name	Location	Status	Dwelling Units	Commercial/ Office/ Industrial Area
City of Ceres					
1	Anderson Estates	2340 River Road	Under construction	7	--
2	Aspen Survey	3136 Blaker Road	Approved	6	--
3	Cambridge Estates II	Hackett Road/Malik Drive	Approved	38	--
4	Cherry Hollow	2800-2808 Blaker Road	Approved	20	--
5	Davante Villas	River Road/Mitchell Road	Under construction	12	--
6	Green River Estates	1936 and 1941 Butcher Avenue	Under construction	13	--
7	Marrad Group	3616 Morgan Road	Approved	4	--
8	Middleton	2606 Lawrence Street	Approved	3	--
9	Mummert	3537 Morgan Road	Approved	7	--
10	On Point Design Group	1538 Moffet Road	Approved	4	--
11	San Juan Ranch	3507, 3413, & 3307 Morgan Road	Approved	24	--
12	San Pedro North #2	San Pedro Avenue/Morgan Road	Approved	13	--
13	Tuscany Village	1578 East Whitmore Avenue	Approved	40	--
14	Westpointe #4	Malik Avenue/East Whitmore Avenue	Under construction	80	--
15	Blaker Brewing	1063 Montclaire Drive	Under Construction	--	6,000
16	Dhillon Center	3106 Mitchell Road	Approved	--	102,500
17	Rai Nursing Facility	1930 E. Hatch Road	Approved	--	47,348
18	Nanak Plaza	3505 Mitchell Road	Approved	--	14,010
19	Tom Mitsopoulos	1307 E. Service Road	Approved	--	36,000
20	Walmart	East Service Road and Mitchell Road	Approved	--	300
21	Whitmore Car Lot	1612 E. Whitmore Avenue	Approved	--	2,400
22	West Landing Specific Plan	North of West Service Road, south of East Whitmore Road, east of Ustick Road, and west of Union Pacific Railroad tracks	Approved	3,659	1,383,910
23	Downtown Specific Plan	North of Park Street, south of Whitmore Avenue, east of El Camino Avenue, and west of Ninth Street	Approved	495	237,000
24	Mitchell Ranch Center	Northwest corner of the intersection of Mitchell Road and East Service Road and south of Don Pedro Road	Approved	--	299,830
25	Coppers Trails Master Plan[1]	North of Redwood Avenue, south of East Service Road, east of Blaker Road, and west of Central Avenue	Proposed	740	--
26	Maple Glenn Master Plan[2]	North of Turlock Irrigation District Lateral #2 Canal, south of East Service Road, east of the Copper Trails Master Plan and Central Avenue, and west of Moffett Road	Proposed	910	--
Stanislaus County					
27	North Ceres	Northeast of South 9th Street, south of the Tuolumne River, east of Bystrum Road, west of the Ceres city limits		51	--
28	Bret Harte	North of West Whitmore Avenue, surrounded by the southern portion of Modesto city limits		135	--
29	Shackelford	North and south of the Modesto city limits, north of East Hatch Road, east of Crows Landing Road, south and southwest of State Route 99		71	--
30	South Ceres	North of East Service Road, vacant lots are generally east and west of State Route 99		23	--

Notes:
ac = acre
sq ft = square feet
Source: Dyatt and Bhatia 2016; Stanislaus County 2016; Michaels, James pers. comm. 2017

Eastgate Planned Community Master Plan

The Eastgate Planned Community Master Plan was adopted in 2000 and revised in 2004 based on the City's acquisition of adjacent parkland. The master plan included annexation of 377 acres in the Ceres's Phase 1 Urban Growth Area. The Eastgate Planned Community Master Plan is intended to create a "unique and innovative community design" around an existing Samuel Vaughn Elementary School.

The majority of the Eastgate Planned Community Master Plan area has been developed as planned. However, a small amount of land designated for medium-density housing has been built as low-density housing and a small area of neighborhood commercial designated land has not yet been developed.

Maple Glenn Master Plan

The Maple Glen Master Plan consists of 195 acres in unincorporated Stanislaus County and encompasses an existing elementary school, agricultural land, and very low-density housing. The Maple Glenn Master Plan proposes mostly low-density housing, as well as some very-low, medium-density and high-density housing; neighborhood commercial uses; and a neighborhood park, trails, and bicycle paths. The City has not adopted the Maple Glenn Master Plan or annexed the master plan area.

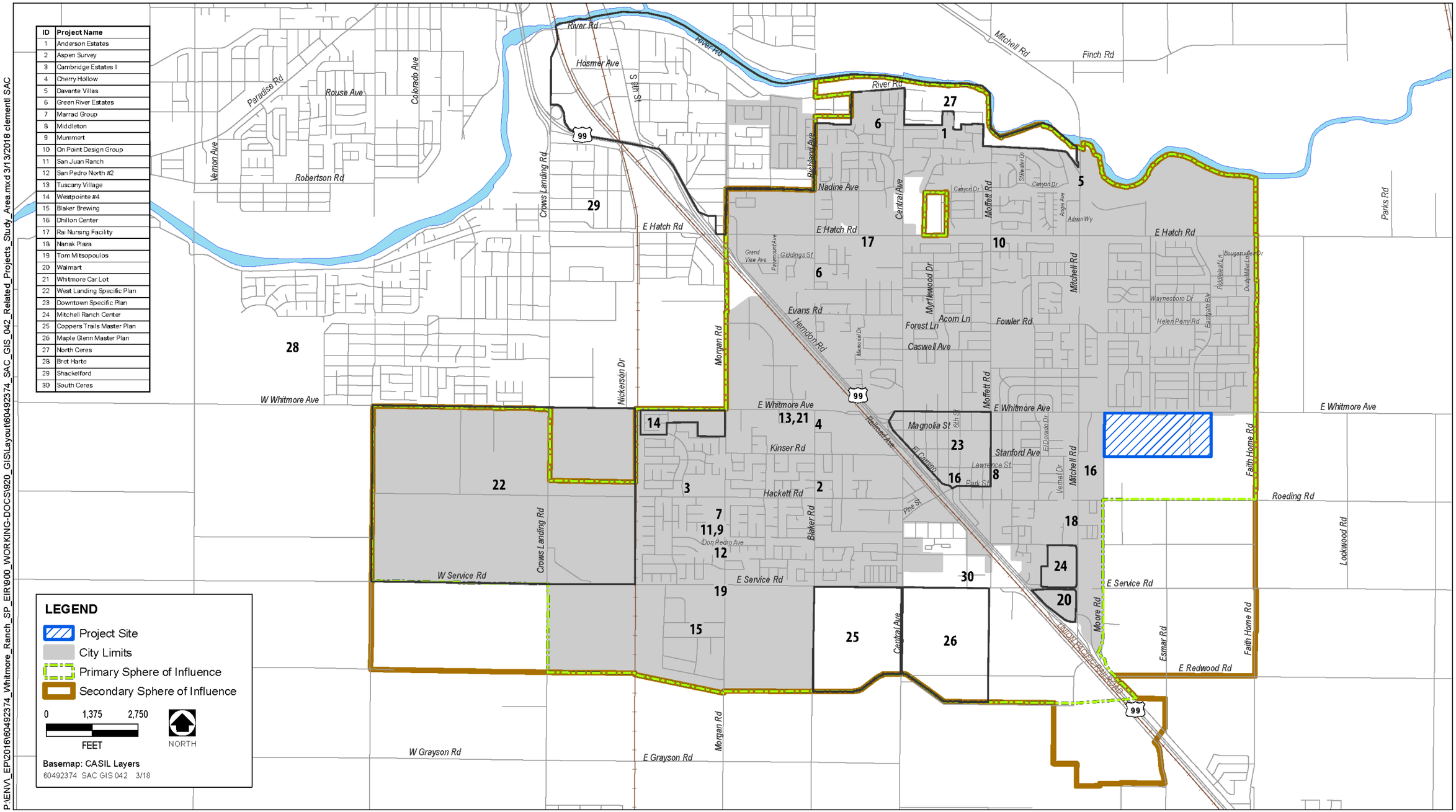
Copper Trails Neighborhood Master Plan

The Copper Trails Neighborhood Master Plan consists of 175 acres along the southern edge of the city in the Phase 1 Urban Growth Area and includes the existing Central Valley High School. The master plan includes a variety of existing City General Plan land use designations, including residential, public facilities, and parks. The City has not adopted the Copper Trails Neighborhood Master Plan or annexed the master plan area.

5.1.4 GEOGRAPHIC SCOPE

The geographic area associated with an environmental resource analysis may vary depending on the type of environmental issue considered. Issues considered in a more local context (*i.e.*, construction noise, public services) are not addressed in a greater regional context because the impacts associated with these activities/resources generally occur in close proximity to the Specific Plan Area. However, the cumulative effects analysis for other environmental resources includes a larger area, when appropriate. For example, the regional context of transportation, air quality, and greenhouse gas emissions issues considers the potential effects of projects occurring in surrounding counties and cities. The regulatory context for greenhouse gas emissions impacts is at the State level, while the impacts of climate change occur at the global scale.

Table 5-2 presents the general geographic areas associated with the different environmental topics addressed in this EIR.



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Source: AECOM 2018

Exhibit 5-1 Related Projects in the City of Ceres and Stanislaus County

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Table 5-2. Geographic Scope of Cumulative Impacts

Issue Area	Geographic Area
Aesthetics	Within the viewshed of the project site
Agricultural Resources	Stanislaus County
Air Quality	San Joaquin Valley Air Basin
Biological Resources	Project site and surrounding areas, as well as Stanislaus County corresponding with affected species and habitat
Cultural Resources	Project site and surrounding areas as well as individual project sites within California
Geology, Soils, Minerals, and Paleontological Resources	Individual ground disturbance sites. For paleontological resources, the significance of potential finds is considered in the context of California
Greenhouse Gas Emissions	Global with emissions levels and rates established at the statewide level
Hazards and Hazardous Materials	Project site and surrounding areas
Hydrology and Water Quality	Project site and surrounding areas downstream from project site
Land Use and Planning	City of Ceres and Stanislaus County
Noise	Sensitive uses along studied roadway segments and adjacent land uses. Construction noise is limited to the Specific Plan Area and would not be compounded with other known adjacent projects that will be under construction at the same time
Population and Housing	City of Ceres and Stanislaus County
Public Services and Utilities, Including Recreation and Energy	Ceres Fire Department, Ceres Police Department, Ceres Unified School District, City of Ceres Public Works Department (water and wastewater), Fink Road Landfill service area, Turlock Irrigation District, Pacific Gas and Electric Company. The wasteful and inefficient use of energy is considered in the context of California
Transportation and Traffic	Roadways affected by project traffic

Source: Data compiled by AECOM in 2018

5.1.5 CUMULATIVE IMPACT ANALYSIS

AESTHETICS

The cumulative context for aesthetic resources consists of past, present, and planned projects throughout Stanislaus County. Important visual resources present in the county (i.e., agricultural resources, waterways, scenic vistas, major corridors) would be affected by land use change anticipated under regional plans, including the Ceres 2035 General Plan and the StanCOG RTP/SCS.

Past, present, and future development in the county has caused, and will continue to cause, substantial changes to the existing visual character as agricultural land and open viewsheds are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region, more limited views of the night sky, and sky glow effects, and would disrupt the rural nature of much of the county. As development continues to expand (see list of projects above) the current visual separation between cities will be

reduced. From the perspective of a resident of the county or a traveler through the area, development of former agricultural land or other open space creates a **significant cumulative impact**.

Projects developed within the Specific Plan Area will be required to comply with design guidelines and relevant policies and standards of the Specific Plan. Compliance with this guidance for community design and other important visual components of development will help to maintain locally important elements of visual character.

However, views of the Specific Plan Area and the visual character of the area would be substantially altered as rural land is replaced by urban development. The impacts on visual resources from Specific Plan implementation are **cumulatively considerable**.

While mitigation can address impacts related to light and glare, there is no feasible mitigation that would fully preserve existing nighttime views, while at the same time allowing development of the Specific Plan Area. Although Specific Plan design guidance will ensure that development remains within certain aesthetic guidelines, there is no mechanism to allow implementation of the Specific Plan while avoiding the conversion of open space and agricultural use to urban development. Aesthetic impacts are considered **significant and unavoidable**.

AGRICULTURAL RESOURCES

Past, present, and future projects throughout the region have, and will continue to convert existing agricultural land to other uses – predominantly urban use. This includes the West Landing Specific Plan, North Ceres, and South Ceres. In addition to these local development projects, there are several development projects in Stanislaus County and throughout the Central Valley that are contributing to the cumulative loss of agricultural resources, including Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Continued urbanization of the region in accordance with applicable land use plans, as well as those approved and proposed development projects described previously, would continue to convert agricultural and open space land to urban uses with residential and commercial buildings and associated roadways and other infrastructure. The continued conversion of farmland in the region is a **significant cumulative** impact.

The Department of Conservation estimated that Stanislaus County had 837,116 acres of agricultural land in 2006, of which 395,680 acres were identified as Important Farmland and 441,436 acres were identified as Grazing Land. Overall, the total acreage of Important Farmland increased by approximately 7.5 percent over the 10-year period between 2006 and 2016, while the total acreage of agricultural land decreased by 0.9 percent. A similar trend continued between 2008 and 2016, with the percent of Important Farmland increasing while the overall amount of agricultural land decreasing.

Based on analysis of the Stanislaus County Important Farmland map, approximately 51.7 acres of Prime Farmland on the project site would be directly and permanently converted to nonagricultural, residential uses and parks/open space. In 2016, approximately 249,967 acres of Prime Farmland existed in Stanislaus County of which 6,463 acres of Prime Farmland were located in the City's Planning Area. A conversion of approximately 51.7 acres of Prime Farmland would account for less than one percent of the total Prime Farmland in Stanislaus County as a whole, as well as less than one percent of total Prime Farmland in the City's Planning Area. The total conversion of Important Farmland would be relatively small (i.e., less than one percent) in the context of the City's Planning Area and the county's entire agricultural land base and would not likely cause a substantial reduction in the county's total agricultural production. However, implementation of the Specific Plan would

contribute to the incremental decline of Important Farmland in the county, region, and state and result in the irreversible conversion of this agricultural land. The impact is **cumulatively considerable**.

Mitigation Measure 3.2-1 would require the project applicant(s) to prepare an Agricultural Preservation Plan that identifies a method for conservation of Important Farmland. However, no new farmland would be made available and a net loss of Important Farmland would occur. There is no additional feasible mitigation available that would reduce impacts associated with the permanent conversion of agricultural land, including Prime Farmland, to a less-than-significant level. Consequently, full compensation for loss of Important Farmland would not be achieved, and a net loss of Important Farmland would still occur. Therefore, this impact would remain **significant and unavoidable**.

AIR QUALITY

Air quality is inherently a cumulative impact, as current emission levels and attainment status are a result of past and present projects. The SJVAB is designated as nonattainment for the State O_3, and PM_{10}, and $PM_{2.5}$ standards. Each additional project within the SJVAB has the potential to cause a net increase in emissions that would contribute to this cumulative air quality impact. Construction activities throughout the region would emit criteria air pollutants from earthmoving activities and construction equipment. The operation of past, present, and future projects would contribute criteria air pollutant and precursor emissions to the region that when added to the other emissions occurring within the region. Pollutant emissions, collectively could cause an exceedance of NAAQS or CAAQS. The SJVAPCD considers projects that would generate air quality emissions that exceed applicable thresholds of significance to be cumulatively considerable (SJVAPCD 2015 p.105).

Construction

Construction-related activities would result in temporary and short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment used during site preparation (*e.g.*, excavation, grading, and clearing), trenching for utilities, asphalt paving for roads, and building construction, among other miscellaneous activities both on- and offsite. Construction-related diesel PM emissions would vary throughout the buildout of the project, depending on both market conditions and construction phases. Projects developed under the proposed Specific Plan and related development projects are required to comply with current regulatory requirements. Specifically, SJVAPCD's Regulation VIII Fugitive Dust Prohibitions and ISR (Rule 9510), both of which contain measures to reduce air quality impacts (see Section 3.3, "Air Quality," for a detained discussion of specific control measures).

SJVAPCD thresholds are used as a proxy for determining whether impacts would be cumulatively considerable. As discussed in Impact 3.3-1, construction-related emissions of ozone precursors and criteria air pollutants will not exceed SJVAPCD thresholds of significance. When 25 percent of the proposed Specific Plan land uses are constructed in one year, a conservative approach, construction emissions do not approach the SJVAPCD annual thresholds of significance. The proposed Specific Plan's construction-related emissions contribution to this significant cumulative impact would be **less than cumulatively considerable**.

Operation

Operational emissions associated with the proposed project would not exceed SJVAPCD thresholds of significance for any pollutants. The SJVAPCD operational threshold of significance for ozone, PM_{10}, and $PM_{2.5}$,

for which the region is currently nonattainment, would not contribute to a cumulatively considerable impact. The impact would be **less than cumulatively considerable**.

Toxic Air Contaminants

The City is not aware of large construction projects planned directly adjacent to the project site that would combine with project-related toxic air contaminant (TAC) emissions in such a way that any significant cumulative impact could occur.

Mobile source emissions associated with freeways and major roadways produce TACs that could adversely affect adjacent sensitive receptors. As noted in Stanislaus Council of Governments (StanCOG's) Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) EIR, the health effects for people living adjacent to high-volume roadways could exceed impacts associated with air quality elsewhere in the County. The RTP/SCS EIR compared health risks in areas adjacent to high-volume roadways to health risks in other areas of the region, concluding that the impact was potentially significant (StanCOG 2014b, p.4.3-18). Within the context of the projected growth described in the RTP/SCS, this is a **significant cumulative** impact.

To help provide information on land use compatibility and TAC sources, ARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* in 2005 (ARB 2005). The handbook offers advisory recommendations for the siting of sensitive receptors near sources of TACs. The handbook recommends locating sensitive uses at least 500 feet from a freeway, urban road carrying 100,000 vehicles or more per day, and rural roads carrying 50,000 vehicles or more per day based on studies showing a 70-percent drop-off in particulate pollution levels at 500 feet (ARB 2005).

As noted in the Transportation Impact Assessment developed for the Specific Plan, the portion of Whitmore Avenue in the vicinity of the project site (i.e., Moore Road to Eastgate Boulevard) is anticipated to carry between approximately 19,690 vehicles per day in 2040 (KD Anderson & Associates 2017). There are no urban roads carrying 100,000 vehicles per day or rural roads carrying 50,000 per day in the broader vicinity that would be expected to handle this level of traffic in 2040. The project would add approximately 1,760 daily trips to Whitmore Avenue between Mitchell Road and Moore Road in 2040. This is the roadway segment to which the Specific Plan would add the most traffic under 2040 condition. This is an 8-percent increase. 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 2005, ARB adopted new public-transit bus fleet rule and emissions standards for new urban buses. These rules and standards include: more stringent emission standards for some new urban bus engines beginning with 2002 model year engines; zero-emission bus demonstration and purchase requirements applicable to transit agencies; and reporting requirements under which transit agencies must demonstrate compliance with the public-transit bus fleet rule. 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. Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than current vehicles. Mobile-source emissions of TACs (*e.g.*, benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade, and they will be reduced further in California through a progression of regulatory measures (*e.g.*, Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies.

Implementation of ARB's risk reduction plan was estimated to reduce diesel PM concentrations by 75 percent in 2010 and 85 percent in 2020 from the estimated year 2000 level. Adopted regulations are also expected to

continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced. Given the Specific Plan's traffic contribution to area roadways and existing regulations, the Specific Plan would have a **less than cumulatively considerable** contribution to the cumulative impact of exposing sensitive receptors to substantial pollutant concentrations.

The Transportation Impact Assessment prepared for the Specific Plan evaluated affected intersections under existing and cumulative conditions, with and without the proposed project. The intersection affected by Specific Plan traffic with the highest peak-period volumes in 2040 is Mitchell Road and Whitmore Avenue. In 2040, with the Specific Plan, this intersection would have a morning peak-hour volume of approximately 3,895 and an afternoon peak-hour volume of approximately 5,165. The Specific Plan's contribution to this intersection is approximately 3 to 4 percent. Neighboring air districts, such as Sacramento Metropolitan Air Quality Management District (SMAQMD) and Bay Area Air Quality Management District (BAAQMD), have developed screening thresholds based on air dispersion modeling to determine if a project would cause an intersection to potentially generate a CO hotspot. The screening thresholds have been developed with conservative assumptions to avoid underestimating CO concentrations. Therefore, a project that would not exceed the screening thresholds would be highly unlikely to generate a CO hotspot and would not expose sensitive receptors to CO concentrations harmful to public health. According to these methodologies, projects would have the potential to generate a CO hotspot if it contributed a substantial volume of vehicle trips to an intersection that exceeded 44,000 vehicles per hour and 31,600 vehicles per hour for BAAQMD and SMAQMD, respectively (SMAQMD 2016, BAAQMD 2010). For intersections located in areas where vertical and/or horizontal mixing is substantially limited, the screening threshold is 24,000 vehicles per hour (BAAQMD 2010). These screening methods are developed to be protective of the public health and are as applicable in the SJVAPCD jurisdiction area as in these other locations. These volumes do not approach the conservative screening threshold described above (*i.e.*, 24,000 vehicles per hour). In addition, the Specific Plan Area is largely flat and would not include any topographical features (*e.g.*, canyons) or transportation infrastructure (*e.g.*, tunnels) that would substantially limit vertical or horizontal mixing. Therefore, implementation of the proposed project is not expected to have the potential to generate CO hotspots. This impact would be **less than cumulatively considerable**.

Odors

Odor impacts are generally localized and do not combine with odor impacts in nearby jurisdictions to increase the severity of impacts. Because odor emissions from various land uses differ in nature, these emissions would not cumulatively contribute to each other to expose residents. There is no significant cumulative impact.

The City does not anticipate land uses within the project site that would generate substantial odorous emissions that would contribute to the existing or future ambient odor conditions. Following buildout of the proposed land uses, the project is not anticipated to contribute cumulatively considerable odorous emissions to existing odor emissions that would affect a substantial number of people. Residential development does not generally generate substantial odors and the existing school uses and residential uses north of the Specific Plan do not generate substantial odors. Therefore, the impact of exposing populations to substantial odors is **less than cumulatively considerable**.

BIOLOGICAL RESOURCES

Past development in the San Joaquin Valley region of Stanislaus County, ranging from conversion of land to agricultural production more than a hundred years ago to more recent expansion of urban and residential development, has resulted in a substantial loss of native habitat. This land conversion has had an overall adverse effect on many native plant and wildlife species in the region and has resulted in loss of special-status species populations and known suitable and potential habitat for these species. For some species, such as Swainson's hawk, habitat losses have been great and have had a substantial effect on regional population numbers. For Swainson's hawk, row crops provide an important foraging habitat substitute for native grassland habitat that was lost over the past century. As conversion of row crops to urban land uses continues, availability of foraging habitat becomes an increasingly important factor in sustaining local population numbers in an area that is important to the species overall. It is expected that habitat value would continue to decrease as commercial and residential development progresses in the region. This is a **significant cumulative** impact on regional biological diversity.

As described in Section 3.4, "Biological Resources," the Specific Plan Area is comprised of cultivated crops (alfalfa, rye, and oat hayfields, and almond orchards), residential uses, and two schools. Project development would result in potentially significant impacts on Swainson's hawk, burrowing owl, and other nesting raptors; loggerhead shrike and common nesting birds; and western red bat; however, these potential impacts would be mitigated to a less-than-significant level with implementation of the mitigation measures described in Section 3.4, "Biological Resources." With mitigation, the project's incremental contribution to the cumulative impact on biological resources in the region would be **less than cumulatively considerable**.

CULTURAL RESOURCES

Stanislaus County has been inhabited by prehistoric and historic peoples for thousands of years. Cultural resources in the region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th and 20th centuries, urbanization and intensive agricultural use in the region has caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. From the latter half of the 20th century to the present, prehistoric and historic structures have been disturbed and destroyed. During this period, regulations protecting cultural resources have substantially reduced the rate and intensity of these impacts. However, even with these regulations, cultural resources are still degraded or destroyed as cumulative development in the region proceeds. This is a **significant cumulative** impact.

The proposed project, in combination with other development in the region, could contribute to the loss of significant cultural resources. Because all significant cultural resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region since these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site extend beyond the project site. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing understanding of the past environmental conditions and cultures by recording

data about sites discovered and preserving artifacts found. Federal, State, and local laws can protect these resources, in most instances.

The proposed project will include earthmoving activities and grading during on- and off-site construction. As of 2016, there are no known historical resources or unique archaeological resources or human remains identified with the Specific Plan Area as a result of the cultural resource investigations. Based on the results of the investigation, the vicinity of the Specific Plan Area does not appear to be sensitive for cultural resources. However, the lack of previously recorded cultural resources and the lack of surface indications do not preclude the possibility that significant subsurface cultural resources could be inadvertently encountered and damaged during project construction. Because cultural resources are non-renewable, any significant impacts to cultural resources have a cumulative effect on resources in the region. Implementing mitigation measures described in Section 3.5, "Cultural Resources," will ensure that any cultural resources encountered during construction, including archaeological features or potential human remains, would be treated in an appropriate manner under CEQA and other applicable laws and regulations. Since the potential for an impact is low, and since the mitigation measures would further reduce the potential for an impact, the impact is **less than cumulatively considerable with mitigation**.

GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

Geology and Soils

The Specific Plan Area and related projects are located within the central portion of the San Joaquin Valley. The geologic formations and soil types vary depending on project location, and therefore are site specific.

There are known faults in the vicinity of the Specific Plan Area that could result in seismic ground shaking. The Specific Plan Area is subject to these hazards and, depending on the location of the related projects, damage to structures could result from strong seismic ground shaking. In addition, the Specific Plan Area could be subject to expansive and unstable soils from causes other than seismic activity. Depending on the location of the related projects, damage to buildings from these same geologic and soils hazards could also occur. Implementation of mitigation measures contained in Section 3.6, "Geology, Soils, and Paleontological Resources," would reduce these impacts at the Specific Plan Area to less-than-significant levels through completion of site-specific geotechnical studies and implementation of construction and design measures developed in response to the studies, in addition to compliance with the California Building Standards Code. Therefore, the proposed project's impact is **less than cumulatively considerable with mitigation**.

Development and construction within the city, Stanislaus County, surrounding counties, and the balance of the San Joaquin Valley would involve grading and construction activities for development of residential and business uses, infrastructure, and road foundations, including vegetation removal, grading, staging, trenching, excavation, and other activities that would result in the temporary and short-term disturbance of soil and would expose disturbed areas to storm events. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss due to wind erosion. This is a **significant cumulative** impact.

Mitigation described in Section 3.6, "Geology, Soils, and Paleontological Resources," requires erosion and sediment control measures that could include the use of could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Construction of the Specific Plan and related projects will require development and implementation of Stormwater Pollutant

Prevention Plans, as well. These measures would reduce short-term construction-related erosion impacts because grading and erosion control plans with specific erosion and sediment control measures would be prepared and implemented, and because a site-specific SWPPP with appropriate best management practices designed to maintain surface water quality conditions in adjacent receiving waters. In addition, the proposed project and related projects would comply with the State Water Resources Control Board and Central Valley Regional Water Quality Control Board's National Pollutant Discharge Elimination System permits for construction activity. The proposed project's impacts associated with construction-related erosion are **less than cumulatively considerable with mitigation**.

Paleontological Resources

Fossil discoveries resulting from excavation and earthmoving activities associated with development are occurring with increasing frequency throughout California. The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions, such as part of a research project. Unique, scientifically important fossil discoveries are relatively rare, and the likelihood of encountering them is specific to a site and based on the type of specific geologic rock formations found underground.

Ceres is underlain by Pleistocene-age sediments of the Modesto Formation, which is considered a sensitive rock unit under Society of Vertebrate Paleontology guidelines. As discussed in Section 3.6, "Geology, Soils, and Paleontological Resources," numerous vertebrate fossil specimens have been recorded from the Modesto Formation in Stockton, Lathrop, Manteca, Modesto, Tracy, and other locations throughout the San Joaquin Valley. The fact that vertebrate fossils have been recovered near the Specific Plan Area and other recorded vertebrate fossil localities have been recorded throughout the Central Valley, all in sediments referable to the Modesto Formation, suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities of the related projects. Therefore, this is considered a **potentially significant cumulative** impact and the proposed project's contribution could be **cumulatively considerable**.

Mitigation in Section 3.6, "Geology, Soils, and Paleontological Resources," would reduce the Specific Plan's impact associated with potential damage to or destruction of unique paleontological resources to a less-than-significant level because construction workers would be alerted to the possibility of encountering unique paleontological resources, and in the event that paleontological resources were encountered, fossil specimens would be recovered, recorded, and would undergo appropriate curation. The proposed project's impact associated with potential damage to unique paleontological resources during earthmoving activities is **less than cumulatively considerable with mitigation**.

GREENHOUSE GAS EMISSIONS

Greenhouse gas (GHG) emissions from past, present, and future projects create a significant cumulative impact. Significance thresholds can be developed by federal or State regulatory agencies or by air districts, but these thresholds and their related goals are ultimately designed to effect change at a global level. Although the analysis provided in Section 3.7, "Greenhouse Gas Emissions," focuses on the proposed project and is project specific, it also is considered cumulative because it is only as a contribution to a cumulative effect that the project specific emissions have environmental consequences.

HAZARDS AND HAZARDOUS MATERIALS

Health and safety impacts associated with the past or current uses of a project site usually occur on a project-by-project basis and are generally limited to the specific project site; in this case, the Specific Plan Area and immediate vicinity. If hazardous materials are encountered on site during construction of the related projects, the associated impacts would be localized to those projects and would not be additive to other hazardous materials-related impacts on the project site. There is **no significant cumulative impact**.

The proposed project would involve the storage, use, disposal, and transport of hazardous materials (such as asphalt, fuel, lubricants, and solvents) to varying degrees during construction. Residential development could use household cleaners, electronic wastes, paint, oil, pool chemicals, fertilizers, and pesticides. The storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, State, and local agencies, and therefore construction companies that would handle any hazardous substances would be required by law to implement and comply with these existing hazardous-materials regulations. The City provides educational material emphasizing the importance of proper household hazardous waste disposal, including disposal of motor oil, antifreeze, paint, thinners, and solvents. Stanislaus County operates a hazardous waste collection center located at County Center IV in Modesto that offers free disposal of household hazardous wastes to all county residents. Related projects would be subject to the same regulations implemented by federal, State, and local agencies, which are specifically designed to protect the public health. Therefore, there is **no cumulative impact**.

The project site contains several steel and plastic drums, potentially an underground storage tank, water wells, and septic systems. Further, lead-based paint could be present in on-site buildings proposed for demolition. Based on its past and current agricultural use and review of previous reports prepared for portions of the project site, the likely presence of organochloride pesticides and other agrochemicals in site soil exists. Construction workers could be exposed to hazardous materials present on-site during construction activities and hazardous materials on-site could create an environmental or health hazard for later residents or occupants, if left in place. Implementation of mitigation included in Section 3.9, “Hazards and Hazardous Materials” would reduce the potential for exposure of people or the environment to hazardous materials to a less-than-significant level. There is **no significant cumulative impact**.

Local roadways would experience a higher traffic volume during construction that could potentially slow emergency access. In addition, proposed pedestrian and bicycle improvements along Whitmore Avenue and Moore Road and multi-modal extensions of Lunar Drive and Boothe Road would result in traffic delays during construction as a result of temporary lane closures, increased construction truck traffic, and other roadway effects that could slow emergency access. It is unknown if other infrastructure or roadway improvement projects and the proposed project would be constructed simultaneously along nearby roadways in the vicinity of the Specific Plan Area. Implementation of mitigation included in Section 3.9 would reduce significant impacts associated with decreased emergency response times during construction by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities. There is **no significant cumulative impact**.

HYDROLOGY AND WATER QUALITY

Local hydrology, drainage, and water quality conditions are often affected by regional activities, in addition to local activities and related projects. Past and present projects from the Sierra Nevada (dams and reservoirs, mining operations, logging, urban development) to the Sacramento–San Joaquin Delta (water supply diversions,

agricultural diversions, flood control projects, urban development, river channelization) affect hydrology and water quality conditions in Stanislaus County.

Construction activities associated with development of the project would create the potential for soil erosion and sedimentation of drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of other pollutants to surface waters. Implementation of mitigation measures contained in Section 3.9, "Hydrology and Water Quality," of this EIR would reduce this impact to a less-than-significant level by requiring a grading and erosion control plan and preparation and implementation a stormwater pollution prevention plan and associated best management practices. Just as with the proposed project, related projects would be required to adhere to applicable requirements designed to prevent significant water quality impacts. Therefore, implementation of related projects **would not result in a cumulative impact**, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to temporary, short-term construction-related water quality impacts.

Implementation of the project could change the long-term potential for contaminant discharges at the project site, and there is a potential for the project to cause or contribute to long-term discharges of urban contaminants (*e.g.*, oil and grease, fuel, trash, pesticides, fertilizer). The project would conform with applicable State and local regulations pertaining to surface water runoff, including the measures outlined in the applicable version of the City's Storm Water Design Standards Manual for New Development and Redevelopment and Storm Water Management Program (i.e., MS4 permit), both of which require incorporation of source controls, treatment controls, and hydromodification measures into project designs. In addition, the Ceres 2035 General Plan and Chapter 13.18 of the City of Ceres Municipal Code require preparation and implementation of a drainage plan that shows measures designed to protect long-term water quality. Related projects would be required to meet similar requirements. Therefore, implementation of related projects **would not result in a cumulative impact**, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to cumulative impacts from contaminant discharge.

As discussed below in "Public Services and Utilities, Including Recreation and Energy," the City's Urban Water Management Plan (UWMP) has determined that the water supply is projected to be sufficient to meet demand of the proposed project and future, related projects through 2035 in normal, single-dry, and multiple-dry years (City of Ceres 2016). The water supply demands for the Specific Plan Area were accounted for in water demand projections contained in the City's UWMP (City of Ceres 2016). Therefore, implementation of related projects **would not result in a cumulative impact** related to substantial depletion of groundwater supplies such that there would be a net deficit in aquifer volume or a substantial lowering of the level of the local groundwater table, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to groundwater supplies.

The project would result in a substantial increase in overall groundwater usage as compared to existing conditions. Implementation of the project could result in a reduction in percolation to the groundwater basin underlying the project site due to the conversion of irrigated agricultural land to urban land uses. The proposed project includes low impact development measures that would allow for groundwater infiltration. The proposed central park blocks would be used for stormwater quality treatment and detention and would also permit excess runoff to percolate through the soil to the groundwater table. However, at full buildout, the project site would add impervious surfaces. This could reduce the amount of water available for local groundwater recharge, and this impact is **cumulatively considerable**.

Mitigation in Section 3.9, "Hydrology and Water Quality," would reduce potentially significant impacts from interference with groundwater recharge because a best management practice and water quality maintenance plan would be prepared and implemented. This plan would demonstrate to the City of Ceres Engineering Division that the proposed Specific Plan includes development and implementation of best management practices and low impact development measures (e.g., the detention basin, plants appropriate for stormwater management) that would help to increase groundwater recharge following project site development. Therefore, the proposed project would not result in a substantial interference with local groundwater recharge and the impact would be **less than cumulatively considerable with mitigation**.

LAND USE AND PLANNING

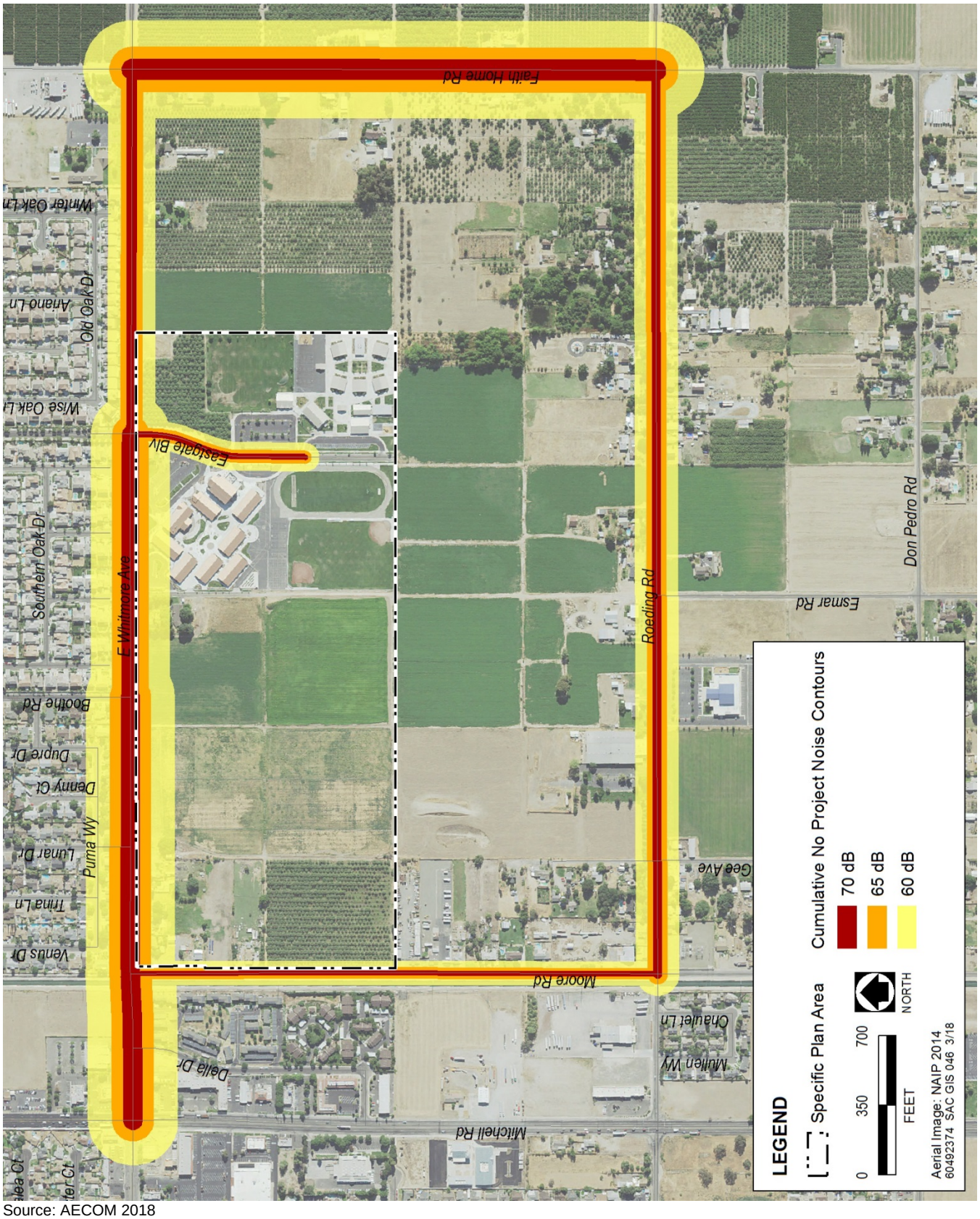
Cumulative development within the region would result in a significant change in land use, and individual projects would need to be considered in context of their compliance with adopted land use plans. Plans with which compliance may be analyzed include general plans, habitat conservation plans, and regional transportation plans. For the Specific Plan, appropriate plans to consider include the StanCOG RTP/SCS, the Ceres 2035 General Plan and master plans, and the County's General Plan. The City is unaware of any broadscale and sustained future inconsistencies with these plans that would generate significant cumulative impacts. Land use inconsistencies are not physical effects in and of themselves and combinations of policy inconsistencies would not rise to the level of a physical effect. Cumulative effects of the physical changes related to the project are discussed in the other topics in this section. **No cumulatively considerable** impacts would occur.

NOISE

Noise impacts are normally localized and attenuated rapidly with distance. Implementation of the Specific Plan would reduce construction-related noise by implementing noise reduction measures. Also, compliance with applicable noise regulations and mitigation from environmental documents prepared for related projects would reduce construction-related noise impacts from other projects in the immediate vicinity of the Specific Plan Area. Construction projects occurring simultaneously would not result in cumulative impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Adding construction traffic to the local roadway network would result in increase in traffic noise levels in the vicinity of the Specific Plan Area. It is possible that construction occurring outside the Specific Plan Area could add construction traffic to some of the same roadways that would be expected to handle construction traffic during buildout of the Specific Plan.

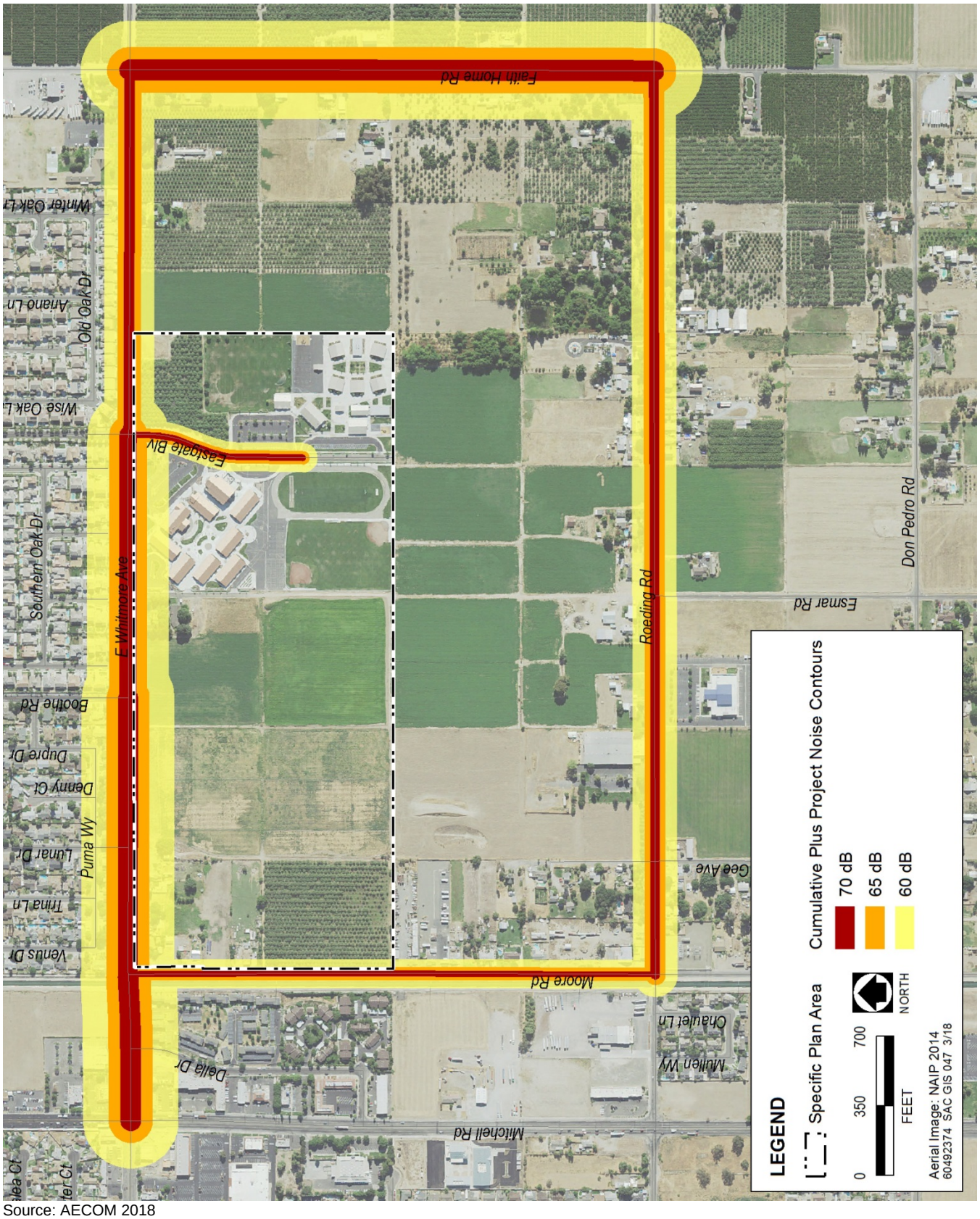
Existing development occurs north and west of the project site and continued agricultural uses are expected to continue south and east of the project site. No proposed roadway or utility infrastructure improvements, except those associated with the Specific Plan, are proposed in the vicinity of the Specific Plan Area. Therefore, no construction projects would occur simultaneously in a way that would create cumulative construction noise impacts and **no cumulative** impact would occur.

Predicted future cumulative traffic noise levels along primarily affected roadways, with and without Specific Plan implementation, are summarized in Table 5-3 and Exhibits 5-2 and 5-3. Under future cumulative conditions with the Specific Plan, predicted traffic noise levels along affected off-site roadways would range from approximately 62 to 70 dBA CNEL/L_{dn} at 50 feet from the roadway centerline. Predicted increases in traffic noise levels for future cumulative conditions would be largely attributable to projected increases in development within the surrounding community. As shown in Table 5-3, under future cumulative conditions with traffic attributable to the



Source: AECOM 2018

Exhibit 5-2 Cumulative No Project Traffic Noise Levels



Source: AECOM 2018

Exhibit 5-3 Cumulative plus Project Traffic Noise Levels

Specific Plan, predicted traffic noise levels along all studied roadway segments would increase approximately 0.2 to 1 dB. A 1-dB increase in noise level is imperceptible. Therefore, the Specific Plan's contribution to future cumulative traffic noise levels along these roadway segments is **less than cumulatively considerable** with respect increase above cumulative no project conditions.

However, predicted future cumulative transportation noise levels with and without Specific Plan at the property line of existing and future land uses located adjacent to studied roadway segments would be projected to exceed the City's noise standards (Table 5-3). Implementation of Mitigation Measure 3.11-2 would substantially reduce cumulative traffic noise impacts at nearby land uses. However, given that detailed development plans are not currently available, it is conceivable that traffic noise levels at some land uses may continue to exceed applicable noise impact criteria. In addition, commonly employed traffic noise mitigation measures, such as sound barriers, may not be feasible at some land uses. As a result, this impact is considered **cumulatively considerable** and **significant and unavoidable.**

Table 5-3. Predicted Traffic Noise Levels, Cumulative Conditions

Roadway	Segment Location	L_{dn} at 50 Feet, dB				
		No Project	Plus Project	Net Change	Significant Impact? Vs. No Project	Significant Impact? Vs. City Threshold
Whitmore Avenue	From Mitchell Road to Della Drive	69.9	70.2	0.3	No	Yes
Whitmore Avenue	From Della Drive to Moore Road	69.9	70.2	0.3	No	Yes
Whitmore Avenue	From Moore Road to Boothe Road	69.8	70.0	0.3	No	Yes
Whitmore Avenue	From Boothe Road to Eastgate Boulevard	69.0	69.2	0.2	No	Yes
Whitmore Avenue	From Eastgate to Faith Home Road	65.7	66.0	0.3	No	Yes
Faith Home Road	From Whitmore Avenue to Roeding Road	70.4	70.4	0.0	No	Yes
Eastgate Boulevard	From Whitmore Avenue to South of Whitmore Avenue	62.3	62.5	0.2	No	Yes
Moore Road	From Whitmore Avenue to Roeding Road	61.4	62.3	1.0	No	Yes
Roeding Road	From Moore Road to Faith Home Road	65.1	65.3	0.2	No	Yes

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level, SB = Southbound, NB=Northbound.

* Traffic noise levels are predicted at a standard distance of 50 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: Data modeled by AECOM 2018

POPULATION AND HOUSING

Like land use policy inconsistency, population growth is not considered a significant cumulative effect because it is not a physical environmental impact. However, the direct and indirect effects, such as housing and infrastructure needs that are related to population growth, can lead to physical environmental effects.

At a regional level, in 2008, the RTP/SCS analysis identified a total population of 501,597 persons, 169,075 households, and 174,997 employees. By 2040, the RTP/SCS analysis projects that these figures would increase to a population of 688,730 persons, with 235,433 households and 236,032 employees.

The county and incorporated cities implement general plans and specific or master plans that could potentially accommodate substantially greater population and employment growth compared to regional forecasts and

planning efforts. Increased population and employment in the region could generate the need for additional housing and infrastructure, which could lead to conversion of undeveloped land and associated adverse physical environmental impacts of the sort that are considered in this topic-specific sections of this EIR. Considering the indirect effects from past, present, and future development under the cumulative plans, the potential for population growth in the county is a **significant cumulative** impact.

Specific indirect impacts associated with increased population, such as traffic congestion, air quality degradation, and noise generation, are addressed in each section of this EIR and this chapter, as appropriate. These sections provide a detailed analysis of other relevant environmental effects as a result of development of the proposed project. This section focuses on any additional impacts related to population, employment, or housing not already fully addressed and mitigated, where appropriate, in other sections.

At buildout, the proposed Specific Plan is estimated to provide up to 441 housing units. Implementation of the proposed Specific Plan would directly facilitate population growth through the construction of homes and could indirectly facilitate population growth through the development of infrastructure, which could lead to additional housing development. However, the Specific Plan Area was designated for development by both the City and the County. Furthermore, as discussed in Section 3.10, "Land Use and Planning," the preferred scenario identified in the RTP/SCS anticipates development of new housing within the Specific Plan Area, and development under the Specific Plan is consistent with this regional scenario. Thus, the provision of a range of housing types within the Specific Plan reduces the extent to which the Specific Plan would induce development elsewhere. Therefore, impacts of the project are **less than cumulatively considerable**.

PUBLIC SERVICES AND UTILITIES, INCLUDING RECREATION AND ENERGY

Future development in Stanislaus County and the incorporated cities within the county, including Ceres, would increase demand for public services and utilities, including recreation and energy. In terms of cumulative impacts, appropriate service providers are responsible for ensuring adequate provision of public services within their service boundaries.

Public services would be provided by the Ceres Fire Department, Ceres Police Department, and the Ceres Unified School District (CUSD) and parks and recreation facilities are provided by the City of Ceres. Water and wastewater services would be provided by the City of Ceres Public Works Department. Electrical service would be provided by Turlock Irrigation District (TID) and natural gas service would be provided by Pacific Gas and Electric Company (PG&E). The following discussion analyzes the cumulative impacts on these service providers from implementation of the project and future, related projects within their respective service areas.

Fire Protection Services

The Ceres Fire Department currently provides fire protection services for the City of Ceres and its two contracted districts (Ceres Fire Protection District and Industrial Fire Protection District). New development within the Ceres Fire Department service area would increase demand for fire protection services and facilities, potentially resulting in the need for additional staff members, facilities, and equipment. Individual development projects would be required to assess impacts related to fire protection services during the environmental review process to ensure that the Ceres Fire Department has sufficient facilities and equipment to meet demand.

The project applicant(s) would provide funding for additional fire facilities and equipment necessary to serve the Specific Plan through payment of the City's Public Facilities Fee. This one-time fee establishes a uniform procedure for fairly allocating the cost of the public improvements. In addition, Ceres requires all new development to create or be annexed into a community facilities district as a condition of approval. Annual community facilities district fees allow the maintenance of an adequate service level as development occurs by ensuring new development pays for its pro-rata share. Similarly, all individual development projects within the City of Ceres Fire Department service area would be required to pay the Public Facilities Fee and be within a community facilities district. In addition, the proposed Specific Plan and individual development projects would incorporate California Fire Code and City standards into project designs. Therefore, a **cumulatively significant impact would not occur**, and the proposed Specific Plan would **not result in a cumulatively significant incremental contribution** to impacts related to increased fire protection services and facilities.

Police Protection Services

The Ceres Police Department provides law enforcement services to the City of Ceres. In 2016, the Ceres Police Department had a service ratio of 1.11 sworn officers per 1,000 persons is slightly under the department goal of 1.3 officers per 1,000. The Ceres Police Department estimates that approximately 20 new officers are required to meet the service ratio goal. New development within the Ceres Police Department service area would increase demand for fire protection services and facilities, potentially resulting in the need for additional staff members, facilities, and equipment. Individual development projects would be required to assess impacts related to police protection services during the environmental review process to ensure that the Ceres Police Department has sufficient facilities and equipment to meet demand.

The City requires new development to fund police protection facilities, personnel, and operations that maintains minimum feasible response times. The project applicant(s) would provide funding for additional fire facilities and equipment necessary to serve the Specific Plan through payment of the City's Public Facilities Fee. This one-time fee establishes a uniform procedure for fairly allocating the cost of the public improvements. In addition, Ceres requires all new development to create or be annexed into a community facilities district as a condition of approval. Annual community facilities district fees allow the maintenance of an adequate service level as development occurs by ensuring new development pays for its pro-rata share. Similarly, all individual development projects within the City of Ceres Police Department service area would be required to pay the Public Facilities Fee and be within a community facilities district. Therefore, a **cumulatively significant impact would not occur**, and the proposed Specific Plan would **not result in a cumulatively significant incremental contribution** to impacts related to increased police protection services and facilities.

Public Schools

The Specific Plan Area is located within the CUSD boundaries and students within the Specific Plan Area would attend would attend La Rosa Elementary School, Cesar Chavez Junior High School, and Central Valley High School. La Rosa Elementary School and Cesar Chavez Junior High School are substantially below capacity, and Central Valley High School is currently exceeding design capacity. While it is likely that Cesar Chavez Junior High School would have sufficient capacity to accommodate all anticipated middle school students, La Rosa Elementary School and Central Valley High School, which is exceeding capacity, would potentially have insufficient capacity to accommodate all anticipated elementary school students and high school students at buildout of the proposed Specific Plan Area. Therefore, a shortfall of elementary school and high school services and facilities would occur.

The CUSD currently does not have excess property on which to construct additional schools within its district boundary to meet existing and future demands. The CUSD estimates that buildout of proposed residential development within the CUSD boundaries would result in 363 unhoused elementary school students, 121 unhoused middle school students, and 261 unhoused high schools students (CUSD 2015).

The proposed Specific Plan and related projects within CUSD's boundaries would pay the State-mandated school impact fees to the CUSD that are being levied at the time of development. The City would determine the assessable square footage that would be subject to the fee at the time of development. The California Legislature has declared that payment of the State-mandated school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section 65996). Therefore, a **cumulatively significant impact would not occur**, and the proposed Specific Plan **would not result in a cumulatively significant incremental contribution** to impacts related to increased demand for school facilities and services.

Depending on the timing of future development within the Specific Plan Area, future students could potentially be bused or driven to schools within the CUSD boundaries, resulting in indirect cumulative impacts related to transportation, such as air pollutant emissions, greenhouse gas emissions, and transportation noise. In addition, if development of future schools occurs, future development could result in cumulative impacts that are not knowable at this time. It is speculative to gauge the extent to which this would create any cumulative impact that is distinct from the analysis of direct Specific Plan impacts.

Parks and Recreation

The City of Ceres currently provides residents with 13 City parks and owns parkland totaling over 170 acres of land. River Bluff Regional Park is the largest of these with a total of 76 acres of developed and undeveloped parkland. Many City parks are less than five acres and serve the immediately surrounding neighborhoods. Private parks contribute approximately four acres to the City's total parkland. Two mid-sized parks and one smaller park are planned for development, totaling about 22.5 acres of new parkland. As of 2016, considering gated private parks and City-owned as-yet undeveloped parkland, the City provides about 4.2 acres of parks per 1,000 residents. This is more than the City's goal of four acres of parkland per 1,000 residents. The City requires individual development projects to maintain the City's ratio of at least four acres of parkland for every 1,000 residents to meet demand.

The Specific Plan includes approximately 5.2 acres of public open space located in the center of the Specific Plan Area. The City anticipates that this open space would provide passive recreational opportunities, as well as a high-quality, east-west bicycle and pedestrian connection across the Specific Plan Area. The proposed 5.2 acres of public open space is slightly less than the 5.9 acres required to meet the City's parkland requirements; however, the City requires as a condition of approval of a tentative subdivision map or parcel map, the subdivider must dedicate land for development of local parks and/or pay an in-lieu park fee. In addition, the project applicant(s) would provide funding for parks and recreation facilities necessary to serve the Specific Plan through payment of the City's Public Facilities Fee. This one-time fee establishes a uniform procedure for fairly allocating the cost of the public improvements. Similarly, all individual development projects would be required to pay the Public Facilities Fee and dedicate land for development of local parks and/or pay an in-lieu park fee. Therefore, a cu**mulatively significant impact would not occur**, and the proposed Specific Plan would **not result in a cumulatively significant incremental contribution** to impacts related to parks and recreation facilities.

Water Supply

Water supply for the Specific Plan would be provided by the City. Existing water demands in the City are currently met by groundwater supplies. As discussed in Section 3.13, the City anticipates groundwater supplies will be used to meet all of the City's current water needs through 2020. The City, as a member of the SRWA, has entered into a water sales agreement for delivery of 1,825 million gallons per year (5,600 afy) of TID surface water. The TID anticipates providing the City with surface water supply starting in 2020.

The City's UWMP addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled water use within the City's service area. The UWMP considers groundwater and surface water supplies and demand within the City over the planning period in normal, single-dry, and multiple-dry years (i.e., 2035). In all year types, if demand cannot be met from surface water alone, the City plans to meet any additional demand through increased groundwater pumping, ensuring the City will maintain 100 percent supply reliability (City of Ceres 2016). Water supply is projected to be sufficient to meet demand of existing and future development through 2035 in all water years. The water supply demands for the Specific Plan Area were accounted for in water demand projections contained in the City's UWMP. Therefore, sufficient water supplies would be available to meet the demands of the Specific Plan as well as existing and future development within the City's service area. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to water supply demand.

Water Storage and Conveyance Facilities

Implementation of the proposed Specific Plan would require construction of on-site water supply conveyance facilities. The on-site water system would consist of a looped trunk line system consisting of 8-inch water mains within road rights-of-way that would connect to new 16-inch water main along Whitmore Avenue. The water infrastructure is planned to serve the project's needs, and the construction of water supply infrastructure would not combine with construction of water supply facilities of related projects to create a cumulative impact. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to water storage and conveyance facilities.

Wastewater Conveyance Facilities

The on-site wastewater collection and conveyance system would consist of 8-inch gravity sewers constructed within road rights-of-way that would convey wastewater flows to the proposed 10-inch gravity sewer in Whitmore Avenue. The Specific Plan Area is identified in the City of Ceres Sewer System Master Plan and the Ceres 2035 General Plan as within Area 17. Sewer lines within Area 17 in Whitmore Avenue are surcharged and the Barbour's Lift Station. The City has recently upgraded the capacity of the lift station and its capacity is no longer an issue to serve upstream peak flows from existing and anticipated future development, including this Specific Plan Area. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to wastewater conveyance infrastructure.

Wastewater Treatment Facilities

The Specific Plan Area is within the Ceres Sewer Service Area (CSSA), which consists of approximately 4,100 acres of developed and undeveloped lands, where wastewater collection, treatment, and disposal service is

provided to approximately 13,800 sewer connections. Sewer service is provided to a mix of single-family and multi-family residential uses and commercial, industrial, and institutional land uses within the Ceres City limits and to adjacent unincorporated areas of Stanislaus County.

Wastewater flows generated by the CSSA are ultimately transported to the Ceres Wastewater Treatment Plant and Turlock Regional Water Quality Control Facility for treatment and disposal. The Ceres WWTP currently has a waste discharge permit limits the disposal capacity to 2.5 million gallons per day (mgd). The City has a contract in place to send 2.0 mgd of treated wastewater to the City of Turlock Regional Water Quality Control Facility for disposal. As a result, the City has a total disposal capacity of 4.5 mgd.

When proposed Specific Plan-related wastewater flows (0.225 mgd) are combined with the current average dry-weather flows (2.7 mgd), implementation of the proposed Specific Plan would not result in an increase in wastewater flows that exceed the current disposal capacity of 4.5 mgd average dry-weather flow. In the long term, the Ceres 2035 General Plan estimates the average daily flow would be 8.1 mgd at buildout of the City's Planning Area. The City plans to provide long-term wastewater treatment by improving the existing Ceres WWTP with increased pumping capacity. In addition, the City plans to fund development to export wastewater to Modesto's Jennings WWTP. Ceres would also provide funding for pumps to increase capacity at Turlock's wastewater treatment facilities for treatment of a portion of the City's wastewater flows. Therefore, the City would ensure sufficient long-term wastewater treatment is available to treat wastewater flows generated at buildout of the CSSA service area, including flows generated by the proposed Specific Plan. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to wastewater treatment.

Solid Waste

Implementation of the project would generate approximately 3.0 tons per day (tpd) of solid waste that would be disposed of at the Fink Road Landfill. This landfill has a maximum permitted throughput of 2,400 tpd. The estimated 3.0 tpd of solid waste generated by the proposed Specific Plan would be less than one percent of the maximum tpd that could be received at the landfill. The County recently revised its projections for the life of the landfill to 2029 for Class III waste and 2043 for Class II (Stanislaus County 2014). In addition, the County has initiated plans for an expansion and reconfiguration of the existing facility to extend its useful life by another 10 to 15 years beyond the revised projections (Stanislaus County 2009:2-1). Therefore, the Fink Road Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the proposed project and existing and future development in its disposal area. Therefore, **no significant cumulative** impact would occur.

Energy

The increased demand for electrical and natural gas supplies and infrastructure is a byproduct of development in Stanislaus County and the region. Energy is consumed for heating, cooling, and electricity in homes and businesses; for public infrastructure and service operations; and for agriculture, industry, and commercial uses. Each service provider is responsible for ensuring adequate provision of these utilities within their jurisdictional boundaries and would be responsible for upgrading their existing electrical and natural gas distribution systems or constructing new distribution systems to meet the demands of individual projects.

Stanislaus County and some of the cities within the region implement general plans and other policy documents that include goals and policies to reduce energy demands through the use design features, building materials, and

building practices; encourage the use of renewable energy sources; and ensure adequate electricity and natural gas and related distribution systems are available to meet energy demands. In addition, many service providers encourage energy conservation through programs, such as offering rebates for installation of energy efficient appliances and lighting fixtures. The location, density, mix of land uses, and quality of the multi-modal transportation system is directly related to the amount of travel and transportation-related energy demands. The City requires that new residential development meets local and State requirements for energy conservation and encourages the use of energy conservation devices and passive design concepts which make use of natural climate to increase energy efficiency.

The Specific Plan includes energy conservation strategies, including window shading devices, selection of colors to reduce heat gain, energy efficient windows, cool roofs, high-quality insulation and radiant barriers, solar panels, and whole house energy systems, to reduce energy consumption associated with heating and air conditioning during winter and summer months. The proposed project and new development would be required to comply with the Building Energy Efficiency Standards (Title 24 of the California Code of Regulations), including the Building Energy Efficiency Standards, and the 2016 CalGreen Code, resulting in reductions in energy demand. These Codes were developed to enhance the energy efficiency of the design and construction of buildings and construction practices. Since these regulations are likely to change over time, all site development will need to comply with energy regulations or standards that are in effect at the time of construction.

As noted by StanCOG:

> The RTP/SCS would help to minimize energy consumption by improving the overall efficiency of the transportation system. In addition, many RTP/SCS projects (*e.g.*, bikeway and pedestrian projects, rail projects, transit projects, and Transportation Demand Management (TDM) projects) as well as the proposed land use pattern would improve the availability of alternative transportation modes, help reduce congestion, and resultant harmful air quality emissions in the County. Generally, the availability of these alternative modes would be expected to reduce overall motor vehicular trips, vehicle miles traveled, and associated energy consumption (StanCOG 2014b, page 4.6-8).

There is **no significant cumulative** impact, and the project **would not result in a cumulatively significant** incremental contribution to a significant cumulative impact related to the wasteful, inefficient, excessive, and unnecessary consumption of energy.

Electrical and Natural Gas Service

Electrical and natural gas service in the city is provided by TID and PG&E, respectively. Implementation of the Specific Plan and related projects within the TID and PG&E service areas would increase demand for electricity and natural gas and require the development of new utility infrastructure to deliver services. Individual development projects would be required to assess project impacts during the environmental review process to ensure that PG&E has sufficient electrical and natural gas supplies to meet demand.

Projects under the Specific Plan would construct a self-contained distribution system that connects to the existing off-site electrical and natural gas systems. The proposed electrical-utility improvements would be required to comply with all existing local and utility requirements, Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) and applicable requirements of the California Building Standards Code and

TID's electric service rules and construction standards identified in the *Developer Information Book for Installing Underground Electrical Facilities*. Natural gas facilities are to be installed in accordance with established Pacific Gas and Electric rules and construction standards, as required in the PG&E's *Electrical & Gas Service Requirements* (also referred to as the Greenbook Manual). New projects would also construct self-contained distributions systems that connect to the existing electrical and natural gas systems, and these systems would comply with the same electrical and natural gas standards and requirements. Therefore, **a cumulatively significant impact would not occur**, and the project **would not result in a cumulatively significant incremental contribution** to impacts related to the increased demand for electrical and natural gas services.

TRANSPORTATION AND TRAFFIC

Implementation of the project, along with past, present, and future developments would generate vehicular trips on roadways in the City of Ceres and the surrounding region. The environmental effects associated with the increase in travel demand include criteria air pollutants and toxic air contaminants associated with vehicle trips, GHG emissions associated with increases in vehicle miles traveled, and transportation noise along local and regional roadways. As with population growth, increase in travel demand in and of itself is not an adverse physical environmental impact. The environmental impacts are associated with the burning of fossil fuels necessary to power vehicles, the noise made by engines and interaction with the roadway, and other physical outcomes of an increase in travel demand – both during construction and operational phases. The increase in travel demand associated with buildout of the project is comprehensively analyzed and feasible mitigation identified in the body of this EIR. A regional traffic model was used to analyze impacts of the project, along with projected regional growth. Section 3.2, "Air Quality," comprehensively analyzes and provides feasible mitigation for air pollutant emissions associated with project vehicular trips, during both construction and operational phases. Section 3.7, "Greenhouse Gas Emissions," comprehensively analyzes and provides feasible mitigation for GHG emissions associated with project vehicular trips, during both construction and operational phases. Section 3.11, "Noise and Vibration," comprehensively analyzes and provides feasible mitigation for noise and vibration impacts associated with project vehicular trips, during both construction and operational phases. The cumulative impact for each of these topics is evaluated in this section. Other than the comprehensive analysis of environmental effects associated with the increase in travel demand attributable to the project, there are no other adverse physical environmental impacts associated with this cumulative increase in travel demand.

Methodology and Assumptions

An "incremental approach" was taken to use the traffic model to create intersection turning movements and roadway segment volumes to best account for inherent limitations of a regional traffic model. The Tri-County Traffic Model employed in conducting traffic demand forecasting for year 2040 was adapted based on the Ceres 2035 General Plan and includes new roadways in the network that are anticipated to exist in 2040. The 2040 run results were compared to the Ceres 2035 General Plan model's Year 2015 calibrated baseline year forecasts, and the incremental difference in segment volume was identified on a daily and peak hour basis. These increments were added to observed Year 2016 volumes to create the "adjusted" future condition. Individual growth rates were then calculated for each segment and intersection approach by comparing observed and adjusted future volumes. Finally, these growth rates were applied to the turning movement volumes at each intersection, and the results were balanced using the techniques contained in *Transportation Research Board's (TRB's) NCHRP report 255, Highway Data for Urbanized Area Project Planning and Design*.

Because the long term cumulative analysis assumes community wide growth, including development of neighboring properties, the evaluation of future traffic conditions also assumes implementation of planned regional and local circulation system improvements. For the cumulative analysis the following programmed improvements have been assumed:

- Completion of the SR 99 / Mitchell Road interchange Modification Project.
- Widening of Whitmore Avenue to 4-lanes per the City of Ceres Public Facilities Fee (PFF).
- Construction of the Faith Home Road Bridge across the Tuolumne River per the Regional Transportation Fee.
- Widening of Faith Home Road south of the Tuolumne River to a four-lane expressway per the City of Ceres PFF.
- Installation of new traffic signals at the Whitmore Avenue / Boothe Road and Whitmore Avenue / Faith Home Road intersection per the City of Ceres PFF.

The City of Ceres considered the possibility of other local area development and indicated that the following local area improvements should be assumed although specific funding mechanisms are not in place:

- Completion of Stanford Avenue from Moore Road to Eastgate Blvd along the south side of the Specific Plan Area.
- Extension of Lunar Drive south from the Specific Plan Area to Roeding Road.
- Extension of Esmar Road to the north to connect to Boothe Road at the southern limits of the Specific Plan Area and to the south to Service Road.
- Extension of Eastgate Blvd from the current terminus across Roeding Road to Service Road.

Cumulative No-Project Conditions

The Cumulative No Project condition assumes that circulation system improvements above are implemented but that no development occurs on the project site.

Intersection Operations

Table 5-4 shows the 2040 cumulative conditions without project traffic. Under cumulative conditions, the following intersections will degrade to a level of service (LOS) of E or lower:

- the northbound and southbound approaches to the Roeding Road / Esmar Road / Boothe Road intersection will operate at LOS E–F during the a.m. and p.m. peak hours,
- the Mitchell Road / Whitmore Avenue intersection is projected to operate at LOS E in the p.m. peak hour, and
- the Whitmore Avenue / Boothe Road intersection is projected to operate at LOS E in the a.m. peak hour.

LOS at these intersections without project traffic is a significant cumulative impact.

Table 5-4. Intersection Level of Service: 2040 No-Project and 2040 plus Project Conditions

Intersection	Traffic Control Type	2040 No-Project				2040 plus Project			
		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Mitchell Road / Roeding Road	Signal	C	30.7	C	24.5	C	30.4	C	25.7
Moore Road / Roeding Road	All-Way Stop	D	26.5	C	15.6	D	31.9	C	17.3
Esmar Road / Roeding Road	NB/SB Stop								
Northbound Approach		**E**	**37.4**	**F**	**58.3**	**E**	**43.4**	**F**	**86.5**
Southbound Approach		**F**	**54.4**	**E**	**32.8**	**F**	**75.3**	**E**	**44.3**
Faith Home Road / Roeding Road	Signal	C	24.2	C	24.2	C	25.0	C	25.7
Mitchell Road / Whitmore Avenue	Signal	D	47.6	**E**	**72.5**	D	51.9	**F**	**78.2**
Della Drive / Whitmore Avenue	NB/SB Stop								
Northbound Approach		C	16.0	C	24.0	C	17.6	D	28.0
Southbound Approach		C	22.6	C	15.9	D	26.1	C	17.1
Moore Road / Whitmore Avenue	NB Stop								
Northbound Approach		C	22.9	C	23.0	**F**	**384.4**	**F**	**75.2**
Lunar Drive / Whitmore Avenue	SB Stop								
Southbound Approach		D	29.5	C	17.4	D	29.2	D	26.7
Northbound Approach		-	-	-	-	**F**	**66.8**	**F**	**50.6**
Boothe Road / Whitmore Avenue	Signal	**E**	**66.9**	C	32.1	**F**	**80.6**	C	30.1
Eastgate Blvd / Whitmore Avenue	Signal	D	43.9	C	26.1	D	46.0	C	27.2
Faith Home Road / Whitmore Avenue	Signal	D	50.3	D	43.1	**E**	**58.2**	D	48.4

Notes:
LOS = Level of Service
Shaded = Below acceptable LOS
Bold values exceed LOS standard
Source: KD Anderson 2018

Roadway Segment Operations

All of roadway segments will have adequate LOS during cumulative conditions, according to standards maintained by the City. Therefore, **no significant cumulative** impact would occur.

Cumulative with Project Conditions

Intersection Operations

Table 5-4 shows the 2040 cumulative conditions with the addition of project-related traffic. With the addition of project-related traffic to cumulative conditions, the following intersections would exceed the applicable LOS thresholds during peak-hour operations:

- the northbound approach to the Roeding Road / Esmar Road / Boothe Road intersection will operate at LOS E in the a.m. and p.m. peak hours,
- the southbound approach to the Roeding Road / Esmar Road / Boothe Road intersection will operate at LOS F in the a.m. and p.m. peak hours,

- the Mitchell Road / Whitmore Avenue intersection is projected to deteriorate from LOS E to LOS F in the p.m. peak hour,
- the northbound approach to the Whitmore Avenue / Moore Road intersection will deteriorate to LOS F in the a.m. peak hours,
- the northbound approach to the Whitmore Avenue / Lunar Drive intersection will deteriorate to LOS F in the a.m. peak hours,
- the Whitmore Avenue / Boothe Road intersection is projected to deteriorate from LOS E to LOS F in the a.m. peak hour, and
- the Whitmore Avenue / Faith Home Road intersection is projected to operate at LOS E in the a.m. peak hour.

LOS at these intersections with the addition of project-related traffic to cumulative conditions is **cumulatively considerable**.

Mitigation Measure 5-1: Implement Roadway Improvements

The project applicant(s) shall implement the following roadway improvements:

- Contribute on a cumulative fair-share basis to the signalization for the Roeding Road / Moore Road intersection when directed by the City of Ceres.
- Construct a signalized intersection with separate northbound left turn lane at the Whitmore Avenue / Boothe Road intersection before 10 percent of Specific Plan's dwelling units are occupied, when Boothe Road is extended south from Whitmore Avenue, or when directed by the City of Ceres.
- Construct an "overlap" phase for the southbound right-turn lane at the Whitmore Avenue / Mitchell Road intersection when directed by the City of Ceres.
- Construct a barrier at the Whitmore Avenue / Moore Road intersection to prohibit northbound left turns after construction of the Eastgate Boulevard extension when directed by the City of Ceres.
- Construct a barrier at the Whitmore Avenue / Lunar Drive intersection to prohibit northbound and southbound left turns after construction of the Whitmore Avenue / Boothe Road intersection when directed by the City of Ceres.
- Contribute their fair share the cost of constructing a dual northbound left-turn lane at the Mitchell Road / Whitmore Avenue intersection.
- Contribute their fair share the cost of widening the Mitchell Road to 6 lanes.

Significance after Mitigation

Figure 13 of Appendix G and Table 5-5 identifies the results of implementing cumulative mitigation measures in terms of intersection LOS. With implementation of the improvements identified in Mitigation Measure 5-1, the Faith Home Road / Whitmore Avenue intersection would operate at a LOS D and the intersections of Moore Road/ Whitmore Avenue, Lunar Drive / Whitmore Avenue, and Boothe Road / Whitmore Avenue would operate

at a LOS C or better (Table 5-4). Therefore, impacts associated with these intersections are **less than cumulatively considerable with mitigation**.

Table 5-5. Mitigated Intersection Level of Service: 2040 No-Project and 2040 plus Project Conditions

Intersection	Traffic Control Type	2040 A.M. Peak Hour				2040 P.M. Peak Hour			
		No Mitigation		With Mitigation		No Mitigation		With Mitigation	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Mitchell Road / Roeding Road	Signal	C	22.4	C	25.3	C	20.9	C	22.2
Moore Road / Roeding Road	All-Way Stop	D	31.9	**E**	**41.2**	C	17.3	C	18.4
	Signal			A	7.4				
Esmar Road / Roeding Road	NB/SB Stop	**E**	**43.4**	**E**	**43.4**	**E**	**44.3**	**E**	**44.3**
Northbound Approach		**F**	**75.3**	**F**	**75.3**	**F**	**86.3**	**F**	**86.5**
Southbound Approach									
Faith Home Road / Roeding Road	Signal	C	24.2	C	25.0	C	25.7	C	25.7
Mitchell Road / Whitmore Avenue	Signal	D	51.9	D	54.2	**F**	**78.2**	**E**	**71.6**
Della Drive / Whitmore Avenue	NB/SB Stop								
Northbound Approach		C	17.6	C	12.8	D	28.0	D	27.7
Southbound Approach		D	26.1	D	16.0	C	17.1	C	16.7
Moore Road / Whitmore Avenue	NB Stop								
Northbound Approach		**F**	**384.4**	B	13.6	**F**	**75.2**	C	17.5
Lunar Drive / Whitmore Avenue	SB Stop								
Southbound Approach		D	29.2	B	17.6	D	26.7	B	14.1
Northbound Approach		**F**	**66.8**	C	11.6	**F**	**50.6**	B	11.9
Boothe Road / Whitmore Avenue	Signal	**F**	**88.4**	C	34.0	C	30.1	C	32.1
Eastgate Blvd / Whitmore Avenue	Signal	D	46.0	D	46.0	C	27.2	C	27.2
Faith Home Road / Whitmore Avenue	Signal	**E**	**58.2**	D	45.7	D	48.4	D	42.2

Notes:
LOS = Level of Service
Shaded = Below acceptable LOS
Bold values exceed LOS standard
Source: KD Anderson 2018

Implementation of Mitigation Measure 5-1 would improve the LOS at the Mitchell Road/Whitmore Avenue intersection from a LOS F to a LOS E in the p.m. peak hour; however, the LOS at this intersection would still exceed the City's acceptable LOS D standard (Table 5-4). There is no feasible mitigation to improve the LOS at the Mitchell Road/Whitmore Avenue intersection to LOS D or better (KD Anderson 2018). Therefore, this cumulative impact is considered **significant and unavoidable**.

The redistribution of existing traffic created by new roads and traffic controls under cumulative conditions would increase traffic through the Roeding Road / Moore Road intersection. As shown in Table 5-4, the LOS would decrease from an acceptable LOS D to LOS E in the a.m. peak hour. No improvements are proposed at this time and no additional feasible mitigation is available. This cumulative impact is considered **significant and unavoidable**.

5.2 GROWTH-INDUCING IMPACTS

CEQA (*CEQA Guidelines*, CCR Section 15126.2[d]) requires an examination of the direct and indirect impacts of the proposed project, including the potential of the project to induce growth leading to changes in land use patterns and population densities and related impacts on environmental resources. Specifically, CEQA states that the EIR shall:

> [d]iscuss ways in which the 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 that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring the construction of new facilities that could cause significant environmental effects. Also discuss characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth-inducement would result if a project involved construction of new housing. Indirect growth-inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (*e.g.*, commercial, industrial, or governmental enterprises);
- a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; or,
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (*e.g.*, construction of a major sewer line with excess capacity through an undeveloped area) or adding development adjacent to undeveloped land.

Growth-inducement itself is not an environmental effect, but it may lead to foreseeable environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

5.2.1 GROWTH INDUCING IMPACTS OF THE PROJECT

Implementation of the Specific Plan does not include commercial, office, or industrial land uses that would generate permanent employment opportunities. Project construction activities would generate temporary and short-term employment, but these construction jobs are anticipated to be filled from the existing local and regional employment pool. In addition, if some nonlocal construction workers were employed for the project, the temporary and short-term nature of the work supports the conclusion that these workers would not typically change residences when assigned to a new construction site. Therefore, construction of the Specific Plan would not indirectly result in a population increase or induce growth by creating permanent new jobs.

The proposed project would be expected to increase the population in the City of Ceres through the construction of 441 new low-, medium-, and high-density housing units that could generate approximately 1,485 new residents. The Ceres 2035 General Plan designates the Specific Plan Area as High-, Medium-, and Low-Density Residential, as well as School and Parks uses. The Ceres 2035 General Plan guidance was used to develop land use designations for the proposed Specific Plan. Specific Plan designations are consistent with the Ceres 2035 General Plan Because implementation of the Specific Plan would not involve more residential development and population than proposed by the Ceres 2035 General Plan, the proposed project would not induce unplanned population growth.

The Specific Plan will provide a roadway connection or connections that stub to the south, which could be useful to future development, but this area has been planned for eventual development as a part of the Ceres 2035 General Plan. Additionally, new stormwater facilities and on-site water and wastewater infrastructure required to serve the Specific Plan would be sized to accommodate project-related demands and would not be intended to serve development on lands other than the Specific Plan Area. Infrastructure improvements will be phased with development. Because the infrastructure that would be provided for the proposed project would only serve the projected demand by the project, the Specific Plan would not result in indirect growth-inducing effects by increasing infrastructure capacity that could serve additional development.

Overall, any minimal growth that the Specific Plan could induce has been evaluated and provided for in the Ceres 2035 General Plan, and the Specific Plan would not result in permanent employment opportunities. In addition, the Specific Plan would not induce substantial population growth indirectly through the extension of roads or other utility infrastructure. Therefore, the Specific Plan would not induce substantial growth in the City of Ceres.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The CEQA Guidelines require a discussion of the significant irreversible environmental changes that would be caused by project implementation (CEQA Guidelines Section 15126.2[c]).

The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled, or those that are consumed or reduced to unrecoverable forms. Implementation of the proposed project would result in the irreversible and irretrievable commitment of energy and material resources during project construction and maintenance, including the following:

- construction materials, including such resources as soil and rocks;
- land area committed to new/expanded project facilities; and
- energy expended in the form of electricity, gasoline, diesel fuel, and oil for construction equipment and transportation vehicles that would be needed for project construction, operation, and maintenance.

Energy used during project construction would be expended in the form of electricity, gasoline, and diesel fuel, which would be used primarily by construction equipment, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction

sites in other parts of the City. Therefore, it is not expected that construction fuel consumption associated with the proposed project would be more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Other nonrenewable and slowly-renewable resources consumed as a result of project development would include, but not necessarily be limited to, lumber and other forest products, sand and gravel, asphalt, petrochemical construction materials, and water. The use of these nonrenewable resources is expected to account for only a small portion of the region's resources.

Operation of the Specific Plan would consume energy for multiple purposes including, but not limited to, residential heating and cooling, lighting, appliances, electronics, as well as vehicle trips associated with proposed residential uses. Furthermore, these uses could increase emissions of greenhouse gases and other air pollutants. It is important to note that actual energy usage could vary substantially, depending upon factors such as the operation of heating and cooling equipment in homes, actual miles driven by future residents, and the degree to which energy conservation measures are incorporated into the design of on-site construction.

Implementation of the Specific Plan would permanently convert agricultural land, including Important Farmland, to nonagricultural uses. All agricultural uses on the project site would be converted to urban uses at buildout of the proposed project. This change in land use would represent a long-term commitment to new land uses, since the potential for developed land to be reverted back to undeveloped land uses is highly unlikely.

The Specific Plan would not result in irreversible damage from environmental accidents, such as an accidental spill or explosion of a hazardous material. During construction, equipment would be using various types of fuel and material classified as hazardous. In California, the storage and use of hazardous substances are strictly regulated and enforced by various local, regional, and state agencies to prevent impacts related to environmental accidents. The nature of construction would not involve unusual amounts or types of hazardous materials that could result in irreversible damage from an accidental release. Similarly, long-term occupation of the Specific Plan Area by residential uses would not involve hazardous materials beyond standard, common-place household and landscaping chemicals which would not result in significant environmental accidents with their use in accordance with manufacturer instructions.

5.4 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

Section 15216.2(b) of the CEQA Guidelines requires an EIR to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented.

Chapter 3 of this EIR provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the proposed project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant and potentially significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to less-than-significant levels.

Chapter 5, Section 5.1 identifies the significant cumulative impacts resulting from the combined effects of the proposed project and related projects. If a specific impact in either of these sections cannot be fully reduced to a less-than-significant level, it is considered a significant and unavoidable adverse impact.

Following is a listing of significant and unavoidable impacts associated with implementation of the Specific Plan.

SECTION 3.2, AGRICULTURAL RESOURCES

- Impact 3.2-1: Loss of Important Farmland and Conversion of Agricultural Land to Nonagricultural Urban Uses
- Impact 3.2-2: Conflict with Existing On-Site and Off-Site Agricultural Operations

SECTION 3.11, NOISE

- Impact 3.11-1: Potential for Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise
- Impact 3.11-4: Long-Term Exposure of On-site Sensitive Receptors to On- and Off-site Non-transportation Noise Sources (Stationary Noise Exposure and Temporary Agricultural Operations Noise Exposure)
- Impact 3.11-5: Potential Exposure of On- and Off-site Sensitive Receptors to Groundborne Noise and Vibration

CUMULATIVE IMPACT AREAS

- Aesthetics
- Agricultural Resources
- Greenhouse Gas Emissions
- Noise
- Traffic

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6 REFERENCES

6.1 1. INTRODUCTION

None.

6.2 2. PROJECT DESCRIPTION

None.

6.3 3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

None.

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